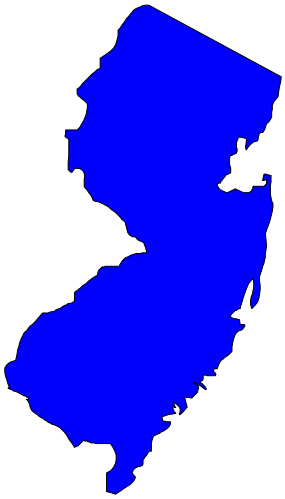
F.A.C.E.
INVESTIGATION REPORT

Fatality Assessment and Control Evaluation Project

FACE #97-NJ-047-01
Forklift Operator Crushed to Death Between Forklift Truck Cage And Metal Beam



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FROM: Fatality Assessment and Control Evaluation (FACE) Project
New Jersey Department of Health & Senior Services (NJDHSS)

SUBJECT: FACE Investigation #97-NJ-047-01
Forklift Operator Crushed to Death Between Forklift Truck Cage
And Metal Beam

DATE: February 23, 1998

SUMMARY

On July 7, 1997, a 37-year-old forklift operator at a trucking company was killed when he was caught and crushed between his forklift's protective cage and a metal load bar. The incident occurred at a shipping terminal as the victim was unloading a trailer with a forklift truck. He was working inside a trailer equipped with a built-in racking system that allowed pallets to be set on adjustable horizontal load bars inside the trailer. The victim was unloading near the back of the trailer when he approached a load bar that he could not pass under. Standing up inside the forklift, he reached out the front of the lift's protective cage to push the beam up and out of the way. As he did this, he apparently leaned against a control lever which moved the idling forklift forward, trapping his head between the lift's cage and the load bar he was trying to move. NJ FACE investigators concluded that, in order to prevent similar incidents in the future, these safety guidelines should be followed:

! Employers should develop and implement a written training and certification program for operating forklift trucks.

! Employers should conduct a job hazard analysis of all work activities with the participation of the workers.

! Employers should develop and implement a comprehensive written safety program.

INTRODUCTION

On July 7, 1997, NJ FACE investigators were notified by a county medical examiner's office of a death resulting from a forklift truck incident that occurred earlier that day. After contacting the employer, FACE investigators conducted a site visit on July 24 to interview the employer and examine the incident site. The trailer involved in the incident was not available, so an identical trailer was examined and photographed. Additional information was gathered from the OSHA investigation file, the police report, and the medical examiner's report.

The employer was a large, non-union trucking company that transported goods over a large regional area. In business for over 65 years, the family-owned company employed 4,000 workers at 62 terminals on the east coast. The company had been operating in New Jersey for three years, opening this terminal (the incident site) about 18 months prior to the incident. This terminal employed 125 workers in a seven day per week, 24 hour per day operation. The terminal did not have an on-site safety person. However, the facility was inspected quarterly by the corporate safety officer. The company hired most forklift operators as experienced workers and provided basic safety training followed by a written test. After passing the test, each operator was observed by the supervisors before being permitted to operate the trucks. Workers with less experience were given on-the-job training until they could satisfactorily operate the forklift. The terminal manager stated that some workers were let go when they could not learn to use the forklifts.

The victim was a 36-year-old male platform dock worker who had worked for the company since October 14, 1996. In addition to working part-time (25 hours per week) for the trucking company, he also worked full time in a nearby distribution warehouse. The terminal manager described him as a good worker who had not been involved in any other accidents.

INVESTIGATION

The incident occurred at a trucking company terminal located in an urban industrial area. The terminal was a large rectangular building that had recently been expanded to hold a total of 50 loading bays. Freight was processed using a "cross-dock" system, where small company "city" trucks picked up freight from customers and transported it to the terminal. The freight was unloaded on one side of the terminal, sorted, and transferred to larger tractor trailers on the opposite side. Once trucked to a destination terminal, the freight was unloaded from the larger trailers and transferred back to the city trucks for delivery. The terminal owned seven propane powered, 1,500 pound capacity forklifts for loading and unloading the trucks.

To increase efficiency, the company had recently purchased a number of "logistical" trailers. These were specially designed trailers equipped with horizontal metal loading bars that held pallets of freight off the floor of the trailer. This better utilized the space within the trailer and prevented damage caused by stacking pallets directly on top of each other. The loading bars were adjustable aluminum bars running along vertical metal tracks mounted on the sides of the trailers. Designed to hold 1,500 pounds, the loading bars locked into slots in the metal tracks and could only be lowered using a metal handle to unlock the mechanism. A racheting feature allowed the bars to be manually pushed up without the handle. When the loading bars were not in use, they were pushed up to their neutral position against the roof of the trailer. The trailer measured nine feet high by 8.5 feet wide by 63 feet deep and was equipped with a translucent fiberglass roof that illuminated the interior.

There were no witnesses to the incident. The weather was warm and clear when the victim arrived for work at 5:00 that evening. This was a relatively quiet night, as the work load after the July 4th holiday was light due to many customers closing down for vacation. As usual, there were two supervisors and a lead man on the dock. The victim started his forklift and went about unloading the large trailers as usual. At around 7:00 p.m. he started to unload freight from a logistical trailer. When he was about two-thirds into the trailer, he came up to a loading bar that had not been fully raised to the ceiling. One end was locked into the first slot from the ceiling and was hanging down about 18 inches from the trailer roof, creating an obstacle that he could not drive his forklift under. The victim apparently stopped his forklift just short of the load bar and stood up in the lift's cab to push the bar up, bringing his head and upper body outside of the forklift's protective cage. As he leaned over the steering wheel and control levers to reach the bar, he apparently leaned against a lever that caused the idling forklift to move forward, crushing the victim's head against the lift's cage and load bar.

The victim may have been trapped for 5-15 minutes before being discovered by a co-worker, who immediately yelled for help. Several co-workers came to help and backed the forklift away to release the victim, who was placed on the floor of the trailer until the police arrived and started cardio-pulmonary resuscitation. The paramedics and fire department arrived a few minutes later and took him to the local hospital where he was pronounced dead at 8:14 p.m.

CAUSE OF DEATH

The county medical examiner attributed the cause of death to "head and neck injuries."

RECOMMENDATIONS/DISCUSSIONS

Recommendation #1: Employers should develop and implement a written training and certification program for operating forklift trucks.

Discussion: The company did not violate any OSHA standards as their training program included a policy prohibiting employees from placing legs and other body parts outside of the forklift truck. However, the victim's failure to follow this procedure suggests a serious lack of understanding in the dangers of operating a forklift. To prevent similar incidents in the future, the FACE program recommends a formal employee training and certification program for the safe use of forklifts. Training should include classroom instruction on general operating and safety procedures, followed by hands-on training with the equipment. Once an employee has successfully completed the program, a written certification is issued authorizing the employee to operate the machine. FACE recommends periodic refresher training to renew the certification.

Recommendation #2: Employers should conduct a job hazard analysis of all work activities with the participation of the workers.

Discussion: FACE recommends that employers conduct a job hazard analysis of all work areas and job tasks with the employees. A job hazard analysis should begin by reviewing the work activities that the employee is responsible for and the equipment that is needed. Each task is further examined for fall, electrical, chemical, or other hazards the worker may encounter. After the analysis, appropriate controls and safety training can be used to eliminate the hazards. Additional information can be found in the attached OSHA publication, *Job Hazard Analysis*.

Recommendation #3: Employers should develop and implement a comprehensive written safety program.

Discussion: The trucking terminal was periodically inspected by the company safety officer, however, the terminal did not have a site specific safety program. It is recommended that employers emphasize worker safety by developing and implementing a comprehensive safety program to reduce or eliminate hazardous situations. This program, which may be developed as part of a joint labor/management safety committee, should include the recognition and avoidance of hazards identified by the job hazard analysis and include appropriate worker safety training.

REFERENCES

Code of Federal Regulations 29 CFR 1910. US Government Printing Office, Office of the Federal Register, Washington DC

ATTACHMENTS

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

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Figure 1

Interior of Trailer Showing Loading Bar Positions