NJ FACE

INVESTIGATION REPORT

Fatality Assessment & Control Evaluation Project

FACE 02-NJ-081 **August 6, 2003**

Forklift Operator Dies After Backing his Forklift Off a Loading Dock

On August 30, 2002, a 39-year-old male forklift operator was fatally injured when he was crushed under a fallen forklift. The victim was a full-time forklift operator at a company that manufactured wooden pallets. At 2:48 p.m., the victim was using an 8,600 pound forklift to move waste material into a large, drive-in waste dumpster positioned at the company's outdoor loading dock. The victim had apparently just dumped the waste and was backing out of the dumpster when he backed off the side of the loading dock, falling 3 feet 9 inches to the asphalt. He was partly thrown from the forklift and was crushed under the lift's rollover cage. He was taken by helicopter to the area trauma center where he was admitted with injuries to his hip and leg. Despite treatment, he suffered complications related to his injury and his condition deteriorated. The victim died at the hospital on September 9, 2002, nine days after the incident. NJ FACE investigators recommend following these safety guidelines to prevent further incidents:

- **Employers should ensure that employees are fully trained and certified as per OSHA regulations before operating a forklift truck.**
- **Operators should always wear a seatbelt while running a forklift or other industrial truck.**
- **Employers should provide safety curbs and railings around the perimeter of outdoor loading docks.**
- **Employers should conduct a job hazard analysis of all work activities with the participation of the workers.**

NJ Department of Health & Senior Services
Occupational Health Service
PO Box 360, Trenton NJ 08625-0360
(609) 984-1863

INTRODUCTION

On September 24, 2002, a county medical examiner notified the FACE Project of the death of a forklift operator who had been injured in a forklift accident at work. A FACE investigator contacted the victim's employer and arranged to conduct an investigation, which was done on October 28, 2002. During the visit, FACE investigators interviewed company representatives and examined and photographed the incident site. Photos from the day of the incident were provided by the employer. Additional information was obtained from the police report, the medical examiner's report, and the OSHA investigation file.

The victim's employer was a family-owned pallet manufacturer that had been in business for 20 years. The company specializes in manufacturing wooden pallets using wooden parts recovered from older pallets. The process uses up to 90% wood recycled from pallets, and the company is expanding the business to include other recycled lumber products. Thirty-four workers were employed at the time of the incident, including office workers and truck drivers. Work is done during a single 7:00 a.m. to 3:30 p.m. production shift. Forklift training is provided by the plant manager, an OSHA-certified operator / trainer who trains the operators over a two-week training period. There is no formal written training and safety program, but some of the company policies and procedures are stated in an employee booklet. The company conducts monthly safety meetings to discuss safety concerns and provide training. Company employees are not unionized.

The victim was a 39-year-old black male forklift operator who had worked for the company for two years. He had come to the company as part of a work program where he started as a laborer disassembling pallets in the plant. He had been promoted to forklift operator approximately four weeks before the incident. He did not receive training due to his previous work experience as a forklift operator with another company, with included three years of forklift operation and indoor construction work. The plant manager stated that he was able to do all of the operations in the plant.

INVESTIGATION

The company is a small pallet manufacturer located in the center of an old industrial town. The company owns a 16,000-square-foot main manufacturing plant and nearby office and storage buildings. The outdoor loading dock and pallet storage areas are located in a large asphalt lot behind the plant. Manufacturing begins with buying or otherwise collecting old pallets from users who would normally discard or destroy them. A company truck is sent to pick up the pallets which are unloaded and stored in the plant's rear lot. As they are needed, the pallets are brought into the plant's breakup area where they are broken down into individual sections with a band saw that cuts the nails connecting the pieces together. Each piece is inspected and, if acceptable, cut down to the correct size in the saw area. The pieces are reassembled in the specialty pallet area and the finished pallets are moved back to the outdoor lot where they are stored until shipped. The company uses about 90% recycled pallet parts, but will manufacture pallets with new wood on order.

Material is moved through the plant with three identical 8,600 pound, seated-rider forklift trucks. Each forklift is propane-powered with a maximum lifting capacity of 1,000 pounds and a maximum lifting height of 15 feet, 7 inches. All three forklifts in the plant were leased new about two years ago. The plant maintains an outdoor loading dock at the rear of the plant. The 45-inch-high concrete dock is 35 feet 2 inches long by 13 feet 11 inches wide, which is large enough to accommodate two tractor trailers. A concrete ramp provides access to the top of the dock. Except for the ramp, the dock does not have

Photo 1
Front of Loading Dock
Showing Entrance Ramp

Photo 2
Rear of Loading Dock
Showing Dumpster

curbs or safety rails, which would block a forklift's access to place material on the sides of the dock. A large, trucked-in waste container (dumpster) is staged at the dock beside the entry ramp. Scrap lumber and other waste are collected in metal bins inside the plant. A forklift operator transports the waste bins up the ramp and into the dumpster where the bin is overturned and dumped. The operator leaves by backing out of the dumpster onto the loading dock with the empty bin.

The incident occurred on Friday, August 30, 2002 at 2:48 p.m. The victim arrived for work between 6:30 to 7:00 a.m. and started his duties on his forklift truck. Work proceeded uneventfully during the day, with the victim moving material and loading/unloading pallets onto the trucks. There were no witnesses to the incident. At about 2:45, the victim returned to work after taking his afternoon break. He was reported to be the first to come back from break and was alone in the yard. He moved a large steel bin of waste into the dumpster and tipped the bin to dump it. Leaving the bin in the dumpster, he then backed the forklift out, possibly grazing the side of the dumpster as he exited. He apparently backed out at too much of an angle, and the forklift backed off the side of the dock where it turned over on its side.

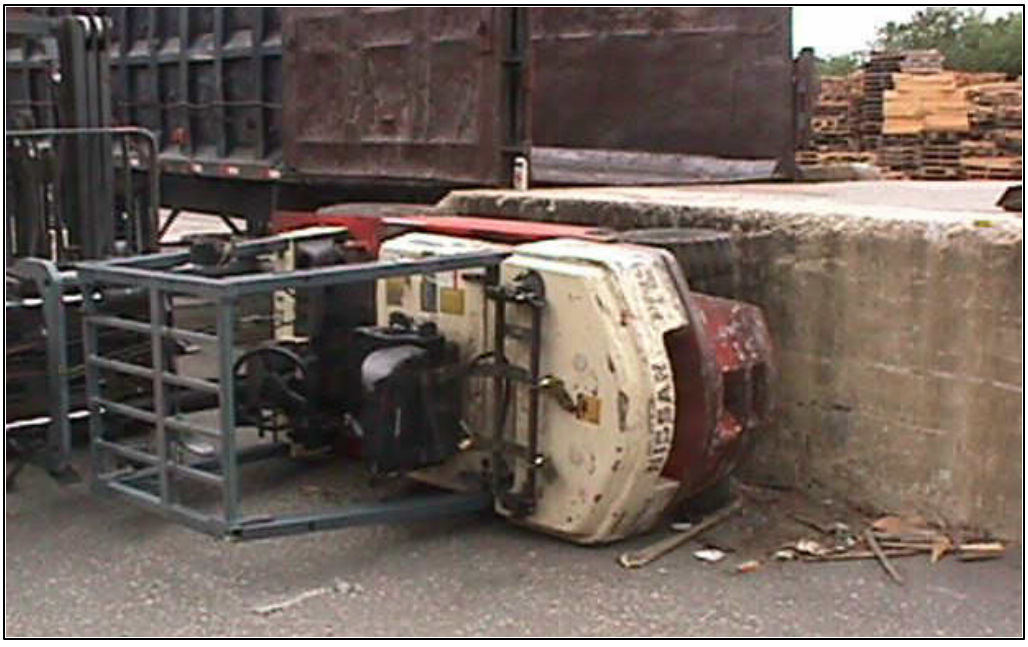

Photo 3
Photo of Incident Scene

The victim, who was not wearing his seat belt, was partly thrown from the lift and pinned under the rollover cage on his hip and leg. No one heard the crash, but a truck driver walking across the yard saw the victim and called for help. His co-workers came out to assist, lifting the forklift off the victim using one of the plant's other forklifts. The police and EMS arrived to find the victim badly injured and ordered a helicopter to med-evac him to a nearby NJ Level I Trauma Center where he was admitted. He remained at the hospital where his condition declined despite treatment. He died of complications related to his injury on September 9, 2002, nine days after the incident.

It is not known precisely why the victim backed off the loading dock. The company had the forklift inspected by their maintenance contractor after the incident, who found that the brakes and other major systems were in good operating order.

RECOMMENDATIONS/DISCUSSIONS

Recommendation #1: Employers should ensure that employees are fully trained and certified as per OSHA regulations before operating a forklift truck.

Discussion: The victim in this incident had three years of experience as a forklift operator with another company. Due to this previous experience, the employer certified but did not fully train him as a forklift operator. NJ FACE recommends that all new forklift operators should be fully trained or retrained before certification as a forklift operator.

Recommendation #2: Operators should always wear a seatbelt while running a forklift or other industrial truck.

Discussion: The forklift operator in this incident was not using a seatbelt, which would have secured him to the seat and prevented him from being crushed under the rollover cage. NJ FACE recommends that all forklift owners train their employees to use seat belts and enforce a policy requiring seat belt use. OSHA also requires that all operators use seatbelts in forklifts or other industrial trucks that are equipped with them. Although not a factor in this case, it should also be noted that OSHA may cite an employer who has not taken advantage of a manufacture's retrofit program to install seatbelts on older industrial trucks that are not equipped with seatbelts.

Recommendation #3: Employers should provide safety curbs and railings around the perimeter of outdoor loading docks.

Discussion: The dock in this incident did not have raised curbs or railings around the perimeter of the dock. The employer explained that this was done to allow material to be moved on and off the dock using two forklifts: a lift on the dock would set a load near the edge of the dock where it would be removed by a second lift on the ground. Although OSHA considers this an acceptable procedure, it leaves the entire perimeter of the dock unguarded. NJ FACE recommends that outdoor docks should be provided with a raised curb high enough to keep a forklift within the dock. A safety railing would not normally be strong enough to contain a forklift, but would provide a visual warning of the dock edge to an operator. It should be noted that plant management installed a heavy-duty railing that can be moved away to allow forklift access.

Recommendation #4: Employers should conduct a job hazard analysis of all work activities with the participation of the workers.

Discussion: To prevent incidents such as this, we recommend 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 mechanical, electrical, chemical, or any other hazard the worker may encounter. The results of the analysis can be used to design or modify a written standard operating procedure. Additional information on conducting a job hazard analysis is included in the appendix.

RECOMMENDED RESOURCES

It is extremely important that employers obtain accurate information on health, safety, and applicable OSHA standards. NJ FACE recommends the following sources of information which should help both employers and employees:

U.S. Department of Labor, OSHA

Federal OSHA will provide information on safety and health standards on request. OSHA has several offices in New Jersey that cover the following counties:

☎ Hunterdon, Middlesex, Somerset, Union, and Warren counties.....(732) 750-3270

☎ Essex, Hudson, Morris, and Sussex counties.....(973) 263-1003

☎ Bergen and Passaic counties.....(201) 288-1700

☎ Atlantic, Burlington, Cape May, Camden, Cumberland, Gloucester,
Mercer, Monmouth, Ocean, and Salem counties.....(856) 757-5181

🖷 Federal OSHA Website: *www.osha.gov*

NJ Public Employees Occupational Safety and Health (PEOSH) Program

The PEOSH Act covers all NJ state, county, and municipal employees. Two state departments administer the act: the NJ Department of Labor (NJDOL), which investigates safety hazards, and the NJ Department of Health and Senior Services (NJDHSS) which investigates health hazards. PEOSH has information that may also benefit private employers.

NJDOL,Office of Public Employees' OccupationalSafety & Health

☎Telephone: (609) 633-3896

🖷 Website: *www.nj.gov/labor/lsse/lspeosh.html*

NJDHSS, Public Employees Occupational Safety & Health Program

☎Telephone: (609) 984-1863

🖷 Website: *www.state.nj.us/health/eoh/peoshweb*

NJDOL Occupational Safety and Health On-Site Consultation Program

Administered by the NJ Department of Labor, this program provides free advice to private businesses on improving safety and health in the workplace and complying with OSHA standards.

☎Telephone: (609) 984-0785

🖷 Website: *www.www.nj.gov/labor/lsse/lsonsite.html*

New Jersey State Safety Council

The NJ State Safety Council provides a variety of courses on work-related safety. There is a charge for the seminars.

☎Telephone: (908) 272-7712. 🖷 Website: *www.njsafety.org*

Internet Resources

Other useful internet sites for occupational safety and health information:

www.palletenterprise.com - Pallet Enterprise, trade magazine.

www.cdc.gov/niosh - The CDC/NIOSH website.

www.dol.gov/elaws -USDOL Employment Laws Assistance for Workers and Small Businesses.

www.nsc.org - National Safety Council.

www.state.nj.us/health/eoh/survweb/face.htm - NJDHSS FACE reports.

www.cdc.gov/niosh/face/faceweb.html - CDC/NIOSH FACE website.

REFERENCES

1. *Safety Standard for Low Lift and High Lift Trucks.* ASME B56.1-1993. The American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017.

2. *Job Hazard Analysis*. US Department of Labor Publication # OSHA-3071, 1998 (revised). USDOL, OSHA/OICA Publications, PO Box 37535, Washington DC 20013-7535.

DISTRIBUTION LIST

Immediate Distribution

NIOSH

Employer

NJ State Medical Examiner

County Medical Examiner

Local Health Officer

NJDHSS Occupational Health Service Internet Site

NJDHSS Census of Fatal Occupational Injuries (CFOI) Project

General Distribution

USDOL-OSHA New Jersey Area Offices (4)

NJDOL Office of Public Employees Safety

NJDHSS Public Employees Occupational Safety & Health Program

NJDOL OSHA Consultative Service

NJ Institute of Technology

University of Medicine & Dentistry of NJ

Rutgers University

Stevens Institute of Technology

NJ Shade Tree Federation

NJ Utilities Association

NJ School Boards Association

Public Service Electric and Gas Company

Liberty Mutual Insurance Company Research Center

Private Consultants (1)

Private Employers (2)

Public Employers (2)

Other Government Agencies (5)

Fatality Assessment and Control Evaluation (FACE) Project
Investigation # 02-NJ-081

Staff members of the New Jersey Department of Health and Senior Services, Occupational Health Service, perform FACE investigations when there is a report of a targeted work-related fatal injury. The goal of FACE is to prevent fatal work injuries by studying the work environment, the worker, the task and tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. FACE gathers information from multiple sources that may include interviews of employers, workers, and other investigators; examination of the fatality site and related equipment; review of OSHA, police, and medical examiner reports, employer safety procedures, and training plans. The FACE program does not seek to determine fault or place blame on companies or individual workers. Findings are summarized in narrative investigation reports that include recommendations for preventing similar events. All names and other identifiers are removed from FACE reports and other data to protect the confidentiality of those who participate in the program.

NIOSH funded state-based FACE Programs include: Alaska, California, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Oklahoma, Oregon, Washington, West Virginia, and Wisconsin. For further information, visit the NJ FACE website at www.state.nj.us/health/eoh/survweb/face.htm or the CDC/NIOSH FACE website at www.cdc.gov/niosh/face/faceweb.html.

Patrick Bost, M.S.
FACE Principal Investigator
Occupational Health Surveillance Program

Emily O'Hagan, R.N., M.P.H.
FACE Investigator
Occupational Health Surveillance Program

Barbara Gerwel, M.D.
Project Coordinator
Occupational Health Surveillance Program

Donald Schill, M.S., CIH
Research Scientist
Occupational Health Surveillance Program

David Valiante, M.S., CIH
Program Manager
Occupational Health Surveillance Program

Gary Ludwig, M.S.
Acting Director
Occupational Health Service

Eddy A. Bresnitz, M.D., M.S.
State Epidemiologist / Assistant Commissioner
Division of Epidemiology, Environmental, and Occupational Health