TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (FACE) Program

SUBJECT: A Female Material Handler Dies When She is Crushed Against a Podium by a Backing Forklift.

SUMMARY
California FACE Report #07CA008

A 35-year-old Hispanic female material handler died when a backing forklift crushed her against a podium that was anchored against a steel beam. The victim had exited a trailer parked at the warehouse dock and walked to the adjacent podium to enter loaded items onto the manifest. A forklift on the dock was moving pallets and was backing up and turning to the left when it crushed the victim against the podium. The forklift operator was not looking where he was backing at the time of the incident. The location of the podiums required the material handlers to have their backs to the activity on the dock. The CA/FACE investigator determined that, in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP), should:

- Ensure forklift operators constantly look in the direction of travel.
- Engineer a podium that would have material handlers facing the activity on the dock.

In addition:

- Employer and manufacturers should consider additional warning systems for forklifts.
- Employers should consider changing the type of forklift being used on docks to those where the operator stands sideways.

INTRODUCTION

On September 9, 2007, at approximately 12:45 p.m., a 35-year-old Hispanic female material handler died after she was crushed against a podium by a backing forklift. The CA/FACE investigator learned of this incident on September 10, 2007, from the Monrovia District Office of Cal/OSHA. Contact with the company where the victim was working was made on October 25, 2007. On December 20, 2007, the CA/FACE investigator, along with a Spanish interpreter, traveled to the incident site and interviewed warehouse management, contract staffing company representatives, and

coworkers. The warehouse where the incident occurred was inspected and pictures of the incident scene, forklift, and podium were taken.

The employer of the victim was a national contract staffing company that provided temporary and long-term employees. The company had been in business for ten years and the California office had been in operation for three years. The warehouse company operated a fleet of company-owned and owner-operator equipment to support a warehouse operation that stored merchandise from ocean carriers. The contract staffing company provided employees to move material in the warehouse and operate forklifts.

The victim had worked at this location for three years. She was born in Mexico and had been in the United States for 17 years. She had a sixth grade education and spoke only Spanish. The forklift operator also worked for the contract staffing company and had been at the same location for three years. He was a licensed forklift operator for one and one half years. The warehouse and contract staffing company had a joint safety program which included employee orientation, formal classroom training, inspections, and audits. The forklift operators had to undergo additional training and testing before they were licensed and allowed to work. The contract staffing company had a full-time safety supervisor onsite who conducted daily safety meetings at the beginning of every shift. The safety supervisor was bilingual, and the safety meetings were conducted in both Spanish and English.

INVESTIGATION

The site of the incident was a manual cross-dock warehouse operation. Trucks carrying containers from ocean carriers would dock on the inbound side of the warehouse and trucks carrying containers for transport to customers would dock on the outbound side of the warehouse. Merchandise from inbound trailers was placed in the warehouse and then packed in the outbound trailers depending on their destination. The material handlers packing the outbound trailers would log the packed material on a manifest that was placed on a podium attached to a support column on the dock. The forklift involved in the incident was a standard natural gas powered forklift that weighed approximately 8,800 pounds. The forklift was in good operating condition and the back-up alarm was working at the time of the incident. The forklift did not have any rear view mirrors.

On the day of the incident, the victim was packing a trailer as part of her normal routine. A forklift operator was moving pallets on the dock in the same area as the victim. The forklift operator was backing his forklift in an “S” pattern and turning to his left. Based on statements from the forklift operator, prior to backing the forklift he looked over his shoulder into the area in which he was going to back. The forklift operator stated the area was clear, but he did not continually look behind him as he was backing the forklift. As he was backing, the victim exited the trailer, and stood by the podium facing away from the forklift. The forklift operator backed into the victim crushing her against the podium. The paramedics were called, performed emergency procedures on the victim, and transported her to a local hospital where she was pronounced dead.

CAUSE OF DEATH

The cause of death, according to the death certificate, was multiple blunt force injuries.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure forklift operators constantly look in the direction of travel.

Discussion: A forklift operator must always be looking in the direction of travel. In this incident, the forklift operator may have become accustomed to his task and assumed that the area was clear as he was backing. Daily safety meetings with forklift operators should reinforce the necessity of continuously looking in the direction of travel while backing forklifts. Employers can enhance worker compliance with safe work practices through programs of task specific training, supervision, recognition, and progressive disciplinary measures.

Recommendation #2: Engineer a podium that would have material handlers facing the activity on the dock.

Discussion: In this particular case, the podium was anchored to the steel pillar that supported the roof over the dock. These podiums had been in place since the structure had been built in the early 1970s. Part of the material handlers' responsibilities was to log on the manifest all the cargo they loaded into the trailers. This activity had been done for many years in the same manner without incident. The installation of portable clipboards attached to the steel pillars would allow material handlers to maintain eye contact with any forklift in the area and to move out of the way. Employers should always strive to limit worker exposure to moving equipment.

Recommendation #3: Employers and manufacturers should consider additional warning systems for forklifts.

Discussion: Workers on shipping and receiving docks often work in close proximity to moving forklifts. Being exposed on a daily basis to the noise and warning devices of backing equipment can desensitize individuals to the presence of such vehicles. Other devices such as a strobe light or different noises should be considered as additions to the standard back-up alarm to warn workers of a backing vehicle. There are also devices available that can detect the presence of persons in the blind spots of vehicles and provide a warning to the driver. A hazard assessment of forklift operations should be conducted to determine the potential for failure of standard back-up alarms to prevent injuries to other workers. The use of other warning systems in this incident might have alerted the victim to move out of the way of the backing forklift in her work area.

Recommendation #4: Employers should consider changing the type of forklift being used on docks to those where the operator stands sideways.

Discussion: The standard sit-down type of forklift used in most industry is very versatile. However, one of the drawbacks of this type of machinery is that the operator sits in the direction of forward travel and the machine travels in reverse as much as it does in forward. Being able to see in the direction of travel at all times is essential to the safety of all workers in the area. When backing the standard sit-down forklift, the operator is required to look over either their right or left shoulder, depending on the direction of rear travel. In either case, the view is restricted and there will always be a blind spot, and a safety risk.

Forklift manufacturers make a variety of types of forklifts for warehouse and dock work. One type allows an operator to stand sideways on the machine, providing an unrestricted view of the direction of travel, both forward and reverse. Companies that own and operate warehouses and docks might consider changing to these types of forklifts as a matter of safety without sacrificing production.

References:

California Code of Regulations, Subchapter 7. General Industry Safety Orders, Group 1. General Physical Conditions and Structures Article 2. Standard Specifications. §3212. Floor Openings, Floor Holes and Roofs

http://www.cdc.gov/niosh/2001-109.html#6

http://www.cdc.gov/niosh/pdfs/2001-109.pdf

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EXHIBITS:

Exhibit 1. The podium that was attached to the steel column on the edge of the dock.

Exhibit 2. The steel column where the podium was secured.

Exhibit 3. The work area where the incident took place showing the outbound trailers.

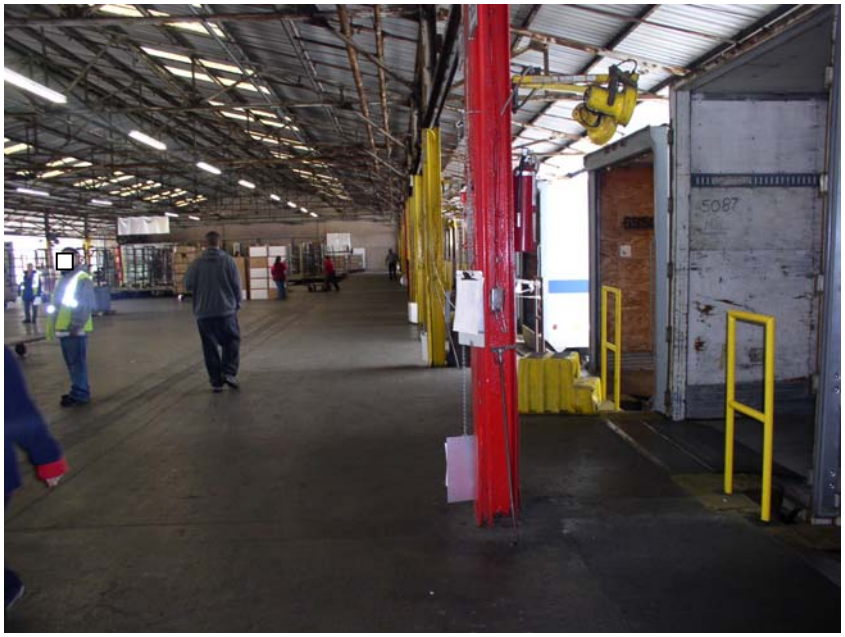

Exhibit 4. The warehouse showing the outbound trailers backed into the dock.

Exhibit 5. The receiving dock with trailers waiting to be loaded.

Exhibit 6. The forklift involved in the incident.

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Public Health, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatalities. The goal of the CA/FACE program is to prevent fatal work injuries. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. NIOSH-funded, State-based FACE programs include: California, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

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Additional information regarding the CA/FACE program is available from:

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