TO: Director, National Institute for Occupational Safety and Health

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

SUBJECT: A mechanic dies when struck in the head by a forklift that slipped off a jack

SUMMARY
California FACE Report #01CA001

A 52 year-old mechanic died when struck in the head by a forklift that slipped off a jack. The victim was lying on a creeper replacing a leaking hose underneath the forklift when the incident occurred. The area of the shop yard where the forklift was being repaired had a slight incline. The victim blocked only one wheel of the forklift with a wooden block. The victim was working alone. A co-worker who witnessed the incident said he was unable to react in time to help the victim. The employer had no written Injury and Illness Prevention Program, written hazard job evaluations, or documented training programs for employees.
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 all jacked loads are properly supported before beginning work.
- Ensure vehicles are on level floors before elevating them.
- Ensure all workers are properly trained and supervised in the safe use of tools in their trade.

INTRODUCTION

On January 31, 2001, at approximately 3:30 p.m., a 52-year-old male mechanic died when the forklift he was working on slipped off a jack and struck him in the head. The CA/FACE investigator learned of this incident on February 7, 2001, through the Los Angeles Coroner's Office post mortem reports. On March 5, 2001, the CA/FACE investigator traveled to the business where the incident occurred and interviewed the company owner and a witness to the incident.

The business where the incident occurred was an auto repair shop that specialized in imports. The owner of the auto repair shop stated that the victim was not an employee because he had no employees. However, the victim performed tasks for him intermittently and would use some of

the shop tools and workspace. The tasks the victim performed were usually of the same type as the primary business of the company; i.e. auto repair. The victim was paid for performing these tasks. The owner of the auto repair shop had no safety program or written IIPP. There were no written task specific safe work procedures or operator manuals for the machines. There was no training made available.

INVESTIGATION

The site of the incident was a small auto repair shop that specialized in import vehicles. The shop yard was cluttered with disabled vehicles and miscellaneous debris. On the day of the incident, the owner of the auto repair shop retrieved a forklift that had a leaking hose from a customer. The owner told the customer that an estimate for repairs would be available after a mechanic evaluated the problem. Later that afternoon, the victim lifted the forklift with a large bottle-type hydraulic jack and blocked only one tire of the forklift with a piece of wood. The forklift was in the shop area where the ground was at a slight incline.

While the victim was lying on a creeper reaching under the forklift to remove the leaking hose, the forklift slipped off the jack and struck him in the head. A witness to the incident stated he ran to find the owner who subsequently called 911. The paramedics administered CPR and transported the victim to the hospital, where he died shortly thereafter.

CAUSE OF DEATH

The cause of death, according to the death certificate, was blunt head trauma.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure all jacked loads are properly supported before beginning work.

Discussion: Most jacks are designed to lift heavy objects, not support them. Proper use of a jack involves knowing the weight limit and proper placement of the jack. Once a jack lifts a heavy object, the object must then be supported by either a jack stand or cribbing. Cribbing is the process whereby blocks of wood are placed under the object to support it in an elevated position. Supporting elevated objects with jack stands or cribbing ensures stability of the object especially when work has to be performed under the object. Had the decedent used proper jack stands or cribbing to support the load before placing his body underneath it to do work, this incident might have been prevented.

Recommendation #2: Ensure all vehicles are on level floors before elevating them.

Discussion: Most jacks are designed to lift a load straight up. This is why it is essential to assure that the surface the load is on is level. An elevated load is unstable to begin with and an un-level surface will allow the center of gravity of the load to shift more rapidly to the down side. Any movement caused by work being performed on the load could also cause the load to slip off the jack, especially if it is not properly cribbed or blocked. Had the victim used a jack on a level surface, this incident might have been prevented.

Recommendation #3: Ensure all workers are properly trained and supervised in the safe use of tools in their trade.

Discussion: The configuration of a load being lifted can require special jacks that have to be placed in certain positions and used a certain way to ensure stability. The forklift in this incident

required a special jack because the body of the forklift was close to the ground. Forklifts also have a distinctive weight proportion due to the rear-mounted counterweight, which must be considered when being lifted. Training is the most effective way to attain knowledge of specialized tools and supervision is an effective method to ensure the proper use of specialized tools. Had the employer trained and supervised his workers, this incident might have been prevented.

References:
California Code of Regulations, Vol. 9, Title 8, Sections 3203, 3562, 3650

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Health Services, in cooperation with the California Public Health Institute, and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations on work-related fatalities. The goal of this program, known as the California Fatality Assessment and Control Evaluation (CA/FACE), is to prevent fatal work injuries in the future. 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: Alaska, California, Iowa, Kentucky, Maryland, Massachusetts, Maryland, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Texas, Washington, West Virginia, and Wisconsin.

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

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