Asphalt Company Supervisor Forklift Roll in Wyoming

SUMMARY

A 36 year old male supervisor for a paving contractor died from preventable injuries incurred while riding on a forklift being driven by his 11 year old son, which tipped over on a sloped asphalt parking area, trapping the victim under the roll bar and crushing his chest. The driver of the forklift and a customer of the paving contractor alerted employees of a nearby business, who called for emergency medical services. Law enforcement officers intercepting the call were first responders and found the victim face down, breathing but unconscious, with his nose and mouth in contact with a puddle of hydraulic fluid leaking from the forklift. A second forklift had been brought in to lift the roll bar from the victim. While awaiting the ambulance, first responders found that his pulse was weakening and that breathing was becoming shallow. They turned the victim onto his back and his breathing improved as his color returned from deep blue to normal. On ambulance arrival, personnel administered CPR, and transported he victim to the local hospital approximately 22 minutes after the incident. The victim was placed in emergency surgery under full cardiac arrest. He was pronounced dead while in surgery, 25 minutes after entering the emergency room.

Employers may be able to minimize the potential for occurrence of this type of incident through the following precautions:

- **Periodic review of forklift safety, including reminders of the hazards of driving on uneven ground.**
- **Establishment and enforcement of policy regarding the use of company equipment for non-business purposes.**
- **Strict prohibition of unauthorized or untrained personnel operating company owned equipment.**

INTRODUCTION

On a late Saturday morning, June 6, 1992, a supervisor of a paving contractor who had been loading barrels of paving material for a customer, was allowing his 11 year old son to drive a company forklift to the garage area when it overturned. The victim had come to the company office on a Saturday morning to assist an out of town customer purchasing some pavement sealer from the asphalt contractor. After loading 55 gallon drums on a trailer for the customer, the victim allowed his son to drive the forklift around the building to the garage area.

There is a 9:1 to 10:1 slope to the driving area surrounding the building, sloping up to the building from the entry gate. The 11-year-old son was on the left side of the forklift seat operating the steering and the victim was on the right side of the seat to operate the gears and foot pedals. As the unloaded forklift, with the fork raised to travel height, rounded the building, it moved from a low spot in front of the

building (east side) to a raised area at the northeast corner, to a lower area on the north side of the building. As it was making a left turn rounding the northeast corner and dropping down the grade on the north, the driver lost control of the wheel and the forklift began tipping to its right.

Both occupants were thrown to the right of the falling vehicle (in the direction of the fall). The driver fell into the roll case area and landed on his feet. The father apparently tried to catch the falling machinery, and was pinned underneath. The customer, who had not seen the incident, attempted to place a 911 call for assistance. Workers from a nearby building who were working over the weekend, came to help. The victim was transported by ambulance to a local hospital, and died in the operating room undergoing open cardiac massage.

INVESTIGATION

Through a reciprocal notification agreement with the OSHA Administrator of the Wyoming Department of Employment, the WY-FACE Project was notified of the incident at 4:00 pm on June 8, 1992. A meeting was subsequently conducted with the employer and the site was photographed. Conversations were held with the county sheriff, coroner and hospital administrator and reports were requested.

Prior to the incident, the victim had been assisting an out-of-state customer by loading pavement sealer, using a forklift to lift 55 gallon drums to the trailer. Since it was a weekend and the company was closed for normal business, the victim had brought his 11 year old son with him. A shop supervisor of the company was also on the premises and was on the back side of the building when the incident occurred. The son asked to drive the forklift, and the father let him control the steering wheel while the father rode on the right side of the seat to control the foot pedals and gears. When the vehicle began tipping, the son let go of the wheel, thus contributing to the vehicle's tipping motion.

The company is located in an industrial park near the outskirts of town. Sealant material is kept in a large tank overlooking the building, which is on a rise overlooking the adjacent street and entryway. The building is surrounded by an asphalt paved parking area that slopes upward on all sides. There is a road and entryway to the south, the sealant loading tank is on a hill to the west. Another business is to the east, and a sandy unoccupied lot is to the north. The slope to the north of the building ends abruptly with a 1" to 2" drop onto an unpaved area of native sand. Some desert vegetation grows in the sandy soil and at the edge of the pavement.

The forklift was bottom heavy, with the fork in travel position. There was a metal cage to protect occupants from falling objects and roll bar protection. Lifting mechanisms and chain drives were enclosed, and motor covers were encased. After the forklift had fallen onto the victim, the driver ran for help, found the customer and asked him to call an ambulance. The driver ran to a nearby business calling for help, and workers from that business brought their forklift to the scene. As they were lifting the forklift off the victim's chest, law enforcement officers arrived.

The forklift tipped on an incline, throwing both occupants off to the right. The victim tried to hold the vehicle up, and it tipped over on him, pushing him face down onto the surface. He was lying face down under the forklift with his head and face on the asphalt in a puddle of hydraulic fluid and the rest of his body laying in the dirt just off the parking lot. Rescuers, alerted by the calls of the driver and the customer, had brought a second forklift and had used it to lift the forklift off the victim. Law Enforcement responders, noting a weak pulse and breathing problems, turned the victim over and

improved is breathing. EMS personnel arrived on the scene, administered CPR, and transported the victim to a local hospital in full cardiac arrest, where open cardiac massage was conducted.

There was a delay between the occurrence and EMS notification, as the customer, being unfamiliar with the phone system in the office, couldn't find an outside line. While trying to call for help, he answered an incoming call from the victim's apartmentmate, who then placed the emergency call. Law enforcement officers patrolling the area overheard and responded to the call. The apartmentmate then drove to the scene, saw the ambulance taking a wrong turn and led them to the incident site.

By the time EMS arrived, the second forklift had arrived and been used to raise the roll bar of the overturned forklift a few inches off the victim to relieve pressure. Law enforcement officers moved the victim and began CPR prior to EMS arrival. The ambulance took the victim to the hospital in full arrest with CPR in progress. He was intubated and a cardiac defect was sutured, internal cardiac massage was conducted and defibrillation was attempted. The victim was pronounced dead in the operating room approximately 2 hours after the incident occurred.

The second forklift was removed from the scene and pictures were taken. After law enforcement investigation had been completed, the forklift that had been involved in the incident was set upright and removed from the scene. No further changes were made to the scene.

CAUSE OF DEATH

The Medical Examiner listed the cause of death as Cardiac tamponade.

RECOMMENDATIONS/DISCUSSION

This incident could have been prevented through greater concern for the hazards involved in operating a forklift on an incline. The employee should have been sufficiently experienced to understand the tendency of small wheel-based, high profile equipment to tip. He should also have been aware of the grade incline around the building, and of the additional hazard of turning on that grade with that type of equipment. Allowing young, inexperienced drivers to operate the equipment under circumstances such as existed should not have occurred. Further, the additional weight of the victim on the downslope side of the vehicle increased the tendency of the equipment to tip.

Irregardless of age and experience, the victim should not have allowed any unauthorized person to operate company equipment, for both economic and safety reasons. Companies who authorize their employees to operate such equipment should establish and enforce policy that prohibits use of equipment by unauthorized persons and/or for non-business use. Employees who are authorized to operate equipment of this type should be strongly aware of the penalties that accompany unauthorized use.

The combination of uneven terrain and forklift operation carries an inherent risk. Because of its small wheel base and the potential for excess weight being applied with the fork lifted while in motion, this type of vehicle is not safe transport in an area where steep inclines and hilly upslopes exist. This type of

vehicle should be limited to use only on solid, ungraded surfaces. While protective features are adequate to protect occupants from falling objects, they will not protect against side rollovers.

FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (FACE) PROJECT

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying the working 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.

States participating in this study include: Georgia, Indiana, Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

NIOSH Funded/State-based FACE Projects providing surveillance and intervention capabilities to show a measurable reduction in workplace fatalities include: Alaska, California, Colorado, Massachusetts, New Jersey, Minnesota, Missouri, Wisconsin and Wyoming.

Additional information regarding this report is available from:

Wyoming Occupational Fatality Analysis Program
522 Hathaway Building - 2300 Capitol Avenue
Cheyenne, WY 82002
(307) 777-5439

Please use information listed on the Contact Sheet on the NIOSH FACE web site to contact In-house FACE program personnel regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.