MARYLAND DIVISION OF LABOR AND INDUSTRY
MARYLAND FACE PROGRAM

CASE: 98MD00501

TO: **Project Officer, State FACE Project, Division of Safety Research**

FROM: **Maryland FACE Program, Division of Labor and Industry**

SUBJECT: **An industrial truck operator was crushed when the forklift he was driving down a ramp skidded off a ramp and tipped over and pinned him between the forklift, the ground and a parked car.**

SUMMARY

On Thursday, January 15, 1998 a 33-year-old male industrial truck operator (the victim) was fatally injured when the forklift he was driving down a ramp, lost traction and skidded off the side of the ramp. He was bringing the forklift out of the building, where it had been stored over night, into the yard where it was to be used during the day.

After the victim started his forklift, he went outside to spread an ice melting compound on the ramp. He then went on to drive the vehicle down the ramp. Approximately halfway down the ramp the back end of the forklift began to skid to the right. The victim attempted to correct the skid. However, before he could straighten it out, the left front wheel struck the left lip of the ramp, and the front end went off the ramp and tipped over to the left. The victim tried to jump free of the forklift but he jumped in the direction the vehicle was tilting. The forklift's overhead guard struck and pinned the victim to the ground and against an automobile parked nearby.

A witness to the incident tried to help but was unable to move the forklift. He ran to the office and called 911. Emergency crews responded within minutes and used air bags to raise the forklift and removed the victim. He was pronounced dead at the scene of the accident.

The MD/FACE Field Investigator concluded that to prevent similar future occurrences, employers should:

- *Train employees in the proper use of de-icing agents.*
- *Train forklift operators in the OSHA proposed guidelines for power equipment operators.*
- *Require the use of seat belts when operating forklifts.*

INTRODUCTION

On Thursday, January 15, 1998, a 33-year-old male industrial truck operator (the victim) died after being caught between his forklift's protective cage, the ground and a parked automobile. A MOSH Preliminary report notified the MD/FACE Field Investigator of the accident. Information regarding the incident was gathered from an on-site visit, discussion with the company owner, and supplementary information gathered from a police report, the Medical Examiner's Post Mortem Report and the MOSH inspector's report.

The employer was a recycling facility for used pallets, in the suburbs of a large metropolitan area. The facility had been in operation for eleven months and had eight employees; two drivers, three repairers, two band saw operators and one utility person. Most of the employees had worked for the company since it started. They worked one shift, five days a week. Recycling operations involved; receiving truckloads of wooden pallets, removing damaged or rotted pieces, cutting off nails, reconstructing the pallets with new wood and delivering the refurbished pallets to the customers.

The employer had not established a formal safety and health program. Approximately one month before the accident loss prevention personnel from its insurance carrier inspected the facility. Many suggested recommendations had not been started. No documented formal training program existed, only informal on-the-job training existed.

INVESTIGATION

On Thursday, January 15, 1998, the victim started work at 6:30 A.M.. His normal duty at the beginning of the day was to drive the forklift from its storage area, inside the building, down the ramp, to the fenced parking lot, where it would be used to unload pallets from customers' trucks. The forklift was a leased Daewoo, model G20S, serial No. E24970003, with a capacity of 6000 pounds. Preventive maintenance is provided by the leasing agent every 500 hours; the vehicle was serviced approximately six weeks before the accident. Although the 26-inch diameter solid tires showed no defined tread pattern, the maintenance service said that they did meet service standards.

After the victim started the forklift, he checked the condition of the ramp that went from the dock to the ground. The ramp was approximately 50-inches wide, 5'-6" high at the dock level and inclined 28'-6' to the ground (13% grade). It was fabricated from raised diamond pattern plate, structural steel and had a six-inch lip on each side. Inclement weather had made the ramp slippery due to a light coating of sleet, so the victim sprinkled a granulated chemical de-icer on the ramp. Instructions on the container were to wait ten minutes to allow the chemical to melt the ice. After spreading the de-icer the victim immediately returned to the forklift and began to drive it forward down the ramp.

Halfway down the ramp, the forklift's counter-weighted back end began to slide to the right. He attempted to correct the skid, but the left front tire struck and rolled over the six-inch lip of the ramp (about a third of the way from the bottom of the ramp). As the forklift began to tilt to the left, the victim jumped in the direction it was tilting. It dropped approximately twelve inches to

the ground and turned over on its left side. An automobile, parked approximately ten feet from the ramp, prevented the victim from clearing the path taken by the forklift as it fell. The victim was struck in the back by the forklift's overhead guard and pinned to the ground next to the automobile. A witness to the incident tried to get the victim out from under the forklift, but was unsuccessful. He then went to the office to call for help.

Emergency crews arrived and used air lifter jacks to raise the forklift high enough to remove the victim from under the overhead guard. He was pronounced dead at the scene of the accident.

CAUSE OF DEATH

Compression asphyxia was the stated cause of death in the autopsy report.

RECOMMENDATIONS/DISCUSSION

Recommendation # 1: Train employees in the proper use of de-icing agents.

Discussion: The instruction on the container of the chemical de-icing agent recommends that the material be allowed to "work" for ten minutes before using the surface on which it was spread. The victim did not wait the recommended time. He spread the de-icer on the ramp and immediately drove the forklift out of the building and onto the ramp before the ice-melting granules had a chance to take affect on the ice.

Recommendation # 2: Train forklift operators in the OSHA proposed guidelines for power equipment operators.

Discussion: Tipover accidents cause the most lift-truck-related deaths in the workplace. Many employees believe that they can operate a forklift simply because they can drive a car. A typical lift truck has a high center of gravity, its wheel base is small and has only three points of stability. Therefore, operating a forklift truck requires a great deal of skill and training. Occupational Safety and Health Standards for General Industry(29 CFR Part 1910.178(l) training) requires that only trained and authorized operators be permitted to operate a powered industrial truck. " Methods shall be devised to train operators in the safe operation of powered industrial trucks." The employer in this case did not have a formal training program. On March 14, 1995, OSHA issued proposed guidelines for training power equipment operators. Among these guidelines are: every employer must develop a training program; every operator must qualify to operate the vehicle; effectiveness of training must be evaluated; operators must be tested and trained on each piece of equipment; and recertification and record keeping are key components of the program. Such a comprehensive program will not only reduce the possibility of a tipover accident, it will also help prevent other powered equipment accidents.

Recommendation # 3: Require the use of seat belts when operating forklifts.

Discussion: The leased forklift involved in this incident was equipped with a seat belt. The operator was not wearing the belt as he drove the truck down the ramp. The Operations and Maintenance manual provided by the leasing agent had instructions on what to do in case of tipover. Specifically, it suggested using the seat belt, and not to jump from the vehicle. In the 1980s, the Industrial Truck Association added a warning label on lift trucks that stated, “Tipover can occur if the truck is improperly operated. Injury or death could result. In case of tipover, do not jump. Hold on tight, brace feet, lean away from point of impact. ”Employers are obligated to require operators of powered industrial trucks equipped with operator restraint devices or seat belts to use the devices.

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Additional information regarding this report or the Maryland FACE Program is available from:

FATALITY ASSESSMENT AND CONTROL EVALUATION

The Maryland Division of Labor and Industry administers the Fatality Assessment and Control Evaluation (FACE) program under a cooperative agreement with the National Institute for Occupation Safety and Health, Division of Safety Research (NIOSH/DSR). The Maryland FACE program performs investigations of selected occupational fatalities, prepares summary reports and engages in prevention activities. The goal of our program is to prevent fatal work injuries in the future by studying the working environment, the worker, the task being performed, the tools employed, the energy exchange resulting in fatal injury and the role of management in controlling how these factors interact.

NIOSH/DSR developed the FACE research protocol in the early 1980's and continues to perform FACE investigations. To increase the research and prevention activities of NIOSH/DSR, states across the nation have been invited to participate in the State FACE Project. Maryland and seventeen other states currently participate in the State Based FACE Project. The other states are : Alaska, California, Colorado, Iowa, Indiana, Kentucky, Massachusetts, Minnesota, Missouri, New Jersey, Ohio, Oklahoma, Texas, Washington, Wisconsin and Wyoming.

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