Massachusetts FACE • Occupational Fatality Report

Massachusetts Department of Public Health
Occupational Health Surveillance Program
Fatality Assessment and Control Evaluation Project

Plumbing Supply Warehouse Worker Dies in a Fall From a Raised Order Picker - Massachusetts

Investigation: # 08-MA-026-01
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SUMMARY

On May 29, 2008 a 53-year-old male warehouse worker (victim) for a plumbing supply company was fatally injured when he fell from a raised order picker he was operating. The victim was accessing a toilet located on a top section of shelving when he fell approximately 16 feet from the raised order picker onto the concrete floor below. A co-worker discovered the victim and ran to the office area where another co-worker called for emergency medical services (EMS). EMS and the local police department arrived within minutes. The victim was then transported to a local hospital where he was pronounced dead. The Massachusetts FACE Program concluded that to prevent similar occurrences in the future, employers should:

- **Ensure warehouse management systems require heavy items to be stored on lower shelves that are clearly labeled;**
- **Ensure that fall protection equipment is worn by employees exposed to fall hazards;**
- **Adopt and enforce a mandatory tie-off / no unhook policy for order picker operators;**
- **Provide employees comprehensive training on powered industrial trucks;**
- **Ensure that employees operating order pickers have a state required hoisting license; and**
- **Develop, implement, and enforce a comprehensive written safety and health program that includes topics such as powered industrial trucks and fall protection.**

INTRODUCTION

On May 29, 2008, the Massachusetts FACE Program was notified by a local police department through the 24-hour Occupational Fatality Hotline that on the same day a male forklift operator had died after falling from a forklift. An investigation was initiated. On June 20, 2008, the Massachusetts FACE Program Director traveled to the employer location and met with multiple company representatives to discuss the incident. The police department report, death certificate,

company information, and information on the forklift were reviewed during the course of the investigation. In addition the incident location was photographed.

The employer is a plumbing supply company that has been in business for 58 years at the time of the incident. The company has approximately 83 employees at multiple locations in two states. Twenty of these 83 employees, including the victim, work at the incident location. The company's usual operating hours began at 7:00 a.m. and ended at 5:00 p.m. The victim worked five days per week, Monday through Friday, with his day beginning at 9:00 a.m. and ending at 5:00 p.m. The victim had been employed by the company for nine years and was hired as a warehouse manager. Approximately seven years ago, the victim reduced his hours and switched to a warehouse worker position. It was reported that the victim had over 20 years of warehouse work experience.

The company did not have a comprehensive health and safety program, but had an employee manual with a section on health and safety. The company provided powered industrial truck training every two years for all employees who operated powered industrial trucks to complete tasks. The training, which included a section on using fall protection when operating order pickers, consisted of written materials, observations of employee competence while operating equipment, and written multiple choice exams. Trainings were documented by the company. The victim did not have the Massachusetts Department of Public Safety Hoisting License, which is required in Massachusetts to operate order pickers. The company did have monthly management meetings where safety topics were usually discussed. There was no union representation at the company.

INVESTIGATION

The company is a plumbing supply warehouse and has multiple locations in Massachusetts and one other state. The incident location, which is one of the larger locations for the company, has been in operation for 12 years. The company uses three different types of powered industrial trucks at the incident location. These include two order pickers, one of which was involved in the incident (Figure 1), two sit-down forklifts, and one reach truck. The majority of the victim's time was spent performing tasks in the company's warehouse. The typical daily tasks for the victim included, but were not limited to, loading and unloading delivery trucks, putting stock away, picking orders, and pulling product to be transferred between the different company locations. The warehouse consisted of multiple rows of shelving that were approximately 16 feet high with a range of four to six shelves. The warehouse was organized primarily by product type and by brand name, typically resulting in similar products stored together.

The powered industrial truck involved in the incident was a high lift order picker style truck (Figure 1). This battery powered order picker was manufactured in the mid 1990s and has a lifting capacity of 3,000 pounds and a lift height of approximately 17 feet. Order pickers are designed so that the operator is standing while operating the order picker, the tines are behind the operator when being driven in the forward direction and the operator's area raises and lowers

with the machine's tines. This design enables the order picker operator to pick desired product from different locations within the warehouse and place the product directly onto the pallet located on the order picker tines. The company provides fall protection consisting of body belts and six foot lanyards designated for each order picker. The lanyards are always attached to the order picker's tie off point, with the body belts attached to the lanyards. The company did have a policy that operators wear the supplied fall protection when operating order pickers.

The incident occurred on a Thursday afternoon of a week where Monday was a holiday, which the victim did not work. On the day of the incident, the victim arrived at work for his normal scheduled start time of 9:00 a.m. It was reported that he worked most of the day performing his typical warehouse tasks. During the afternoon, prior to the incident, the victim was pulling items to be transferred the following day to one of the other company locations. Once the products for the transfer are pulled, they are usually set aside at the loading dock area. Transfers between company locations usually occur around 11:15 a.m. and any products that are not pulled the night before are pulled the morning of the transfer.

At the time of the incident, the victim was working alone while operating one of the company's two order pickers. One of the items to be included in the next day's transfer was a toilet. It was reported that this particular toilet was not commonly purchased. The victim was accessing a top shelf where he thought this particular toilet was located (Figure 2). It was unclear if or when the victim realized that he had accessed the wrong toilet.

To access this top shelf location, the victim had positioned the order picker parallel to the shelf and adjacent to the toilet. The order picker was raised approximately 16 feet and had an empty wood pallet positioned with a plywood base on its tines. The victim was standing in the order picker raised operator's area and was not wearing the available body belt. The body belt, which was attached to one end of a lanyard, had been placed on the order picker's roof. The other end of the lanyard was attached to the order picker's tie off point. As the victim was accessing the box containing the toilet, he fell off the order picker to the concrete floor below, landing approximately 11 feet away from the order picker and face down.

A co-worker who was on his way out of the break room noticed the victim on the floor of the warehouse and the order picker in the raised position. The co-worker went to the victim and noticed some blood and that the victim potentially was not breathing. The co-worker then went to the warehouse's customer counter area and informed other co-workers of the incident. A call was placed for Emergency Medical Services (EMS). The local police and EMS arrived to the incident location within minutes. Co-workers met the police and EMS personnel and brought them to the incident location. EMS transported the victim to a local hospital where he was pronounced dead. Since the incident the company has placed signs on all order pickers that state "Warning Safety Belt and Lifeline Required".

CAUSE OF DEATH

The medical examiner listed the cause of death as blunt force trauma to head and torso with fractures of skull and ribs and injuries of brain.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should ensure warehouse management systems require heavy items to be stored on lower shelves are clearly labeled.

Discussion: Warehouse management systems should include clearly labeled shelves with readily accessible corresponding charts, outlining where items are stored, and policies for heavy items to be stored on lower shelves, routinely accessed items to be stored on chest-height shelves, and lighter items to be stored on higher shelves.[1]

In this case, the employer had a warehouse management system, but the system did not seem to include policies on storage of heavy items. If heavy items, such as toilets, were stored on lower shelves, the victim would have been able to access the toilet while standing on the ground, eliminating the fall hazard. In addition, clearly labeled shelves and readily accessible corresponding charts will help reduce time spent picking incorrect items.

Recommendation #2: Employers should ensure that fall protection equipment is worn by employees exposed to fall hazards.

Discussion: The Occupational Safety and Health Administration (OSHA) requires that personal protective equipment (PPE), such as safety harnesses and lanyards, are available and used by all employees exposed to fall hazards.[2] Because the operator platforms on order pickers rise, this creates a fall hazard for the operator. Therefore, as this employer did, all employers must provide fall protection for employees exposed to fall hazards. Providing PPE is only the first step to ensuring employee safety; employers should strictly enforce PPE use by employees when required (see Recommendation #3).

In this case, the employer provided a body belt as part of the fall protection for the order picker operators. Although the use of a body belt in this situation is allowed under the appropriate OSHA standard (29 CFR 1910.132), it might not be the best choice. OSHA states in a standard interpretation, that there are no specific OSHA general industry standards that either require the use of body harnesses or prohibits the use of body belts to protect personnel against falls from elevated power industrial truck platforms. OSHA also states in the interpretation that there are hazards associated with body belts that are greatly reduced by the substitution of body harnesses and that it is believed that body harnesses rather than body belts are the appropriate form of fall protection for employees working on elevated powered industrial truck platforms.[3]

Recommendation #3: Employers should adopt and enforce a mandatory tie-off / no unhook policy for order picker operators.

Discussion: Companies that have order picker trucks or similar equipment in use should adopt a mandatory tie-off / no unhook policy. A company's policy should state that at all times when using order pickers, operators must be tied off to the order picker and under no circumstances will the operator unhook the lanyard from the order picker's anchor point when the lift is in the raised position. The policy should also prohibit stepping off order pickers onto boxes of product located on shelves. As the employer did after the incident, it is a good idea to ensure that all order pickers have signs posted that state the use of fall protection is required when operating.

To ensure the effectiveness of the mandatory tie-off / no unhook policy, the employer should ensure that training on the policy and proper use of fall protection is performed along with the order picker training. In addition, it must be ensured that the mandatory tie-off / no unhook policy is strictly enforced.

Recommendation #4: Employers should provide employees comprehensive training on the operation and safe use of powered industrial trucks.

Discussion: In this case, the employer did provide employees with the OSHA required powered industrial truck training.[4] Training provided to equipment operators should be comprehensive to ensure that they have the knowledge to operate the equipment safely while performing their routine and non-routine tasks. Employers should always include machine specific information in the training, which can be found in the equipment manufacturers' owners/operators manuals. Developing and providing employees with a machine-specific checklist that covers all procedures from accessing and assessing the equipment prior to use through operating and returning the equipment to its storage location will provide employees with an accessible reference about the machines they are operating. Assessing employees' comprehension and knowledge of the material in the training must be performed and documented. This documentation should also include who provided the training and their qualifications, the content of the training, and the workers who were trained.

Recommendation #5: Employers should ensure that employees operating order pickers have a state required hoisting license.

Discussion: In this case, employees operating the order pickers and other forklifts did not have the Massachusetts Department of Public Safety (DPS) issued 1C Hoisting license. This Hoisting license is required in Massachusetts to operate order pickers. In order to obtain a hoisting license, operators must be 18 years of age, complete an application, and successfully pass an examination covering all working parts of the hoisting machinery, safe operating practices, hand signals, and inspection procedures.[5] Information about the hoisting license can be found on the DPS Web site at www.mass.gov/dps.

Recommendation #6: Employers should develop, implement, and enforce a comprehensive written safety and health program that includes topics such as powered industrial trucks and fall protection.

Discussion: At a minimum, a comprehensive safety and health program should include an explanation of the worker's rights to protection in the workplace, safe work practices workers are expected to adhere to, specific safety protection for all tasks performed, ways to identify and avoid hazards, and who they should contact when safety and health issues or questions arise. In this case, topics to also be included are powered industrial trucks, fall protection, how to control identified hazards, and the avoidance of unsafe conditions. Employers should use their employees' expertise throughout the development process of the comprehensive safety and health program by seeking employee input. Even after the safety and health program is developed, employers should continue to seek employees' input during the routine updating of the program. The program should be updated when safety concerns arise and when new equipment and new tasks are introduced into the workplace.

As a reference, a summary of the Occupational Safety and Health Administration's (OSHA) draft proposed safety and health program rule, which discusses the safety and health responsibility of employers, has been included at the end of this report. In addition, the Massachusetts Division of Occupational Safety (DOS) offers free consultation services to help small employers improve their safety and health programs, identify hazards, and train employees. DOS can be contacted at 617-969-7177. More information about DOS can be found on their Web site at www.mass.gov/dos/consult/.

REFERENCES

1. Benson, D. Warehouse Coach. *Item Placement – Repack Location Slotting.* [www.warehousecoach.com/images/Item_Placement_-_Repack_Slotting.pdf]. Date accessed: March 1, 2010.

2. Code of Federal Regulations. 29 CFR 1910.132. *General requirements.* Washington DC. U.S. Government Printing Office, Office of the Federal Register.

3. DOL. OSHA. Standard interpretations: *Use of body harness verses body belt for all protection when working from elevated powered industrial truck platforms.* [www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=25152]. Date accessed: November 9, 2009.

4. Code of Federal Regulations. 29 CFR 1910.178. *Powered industrial trucks.* Washington DC. U.S. Government Printing Office, Office of the Federal Register.

5. Code of Massachusetts Regulations. 520 CMR 6.00. *Hoisting Machinery.*

Figure 1 – Order picker involved in the incident with an empty pallet on the tines.

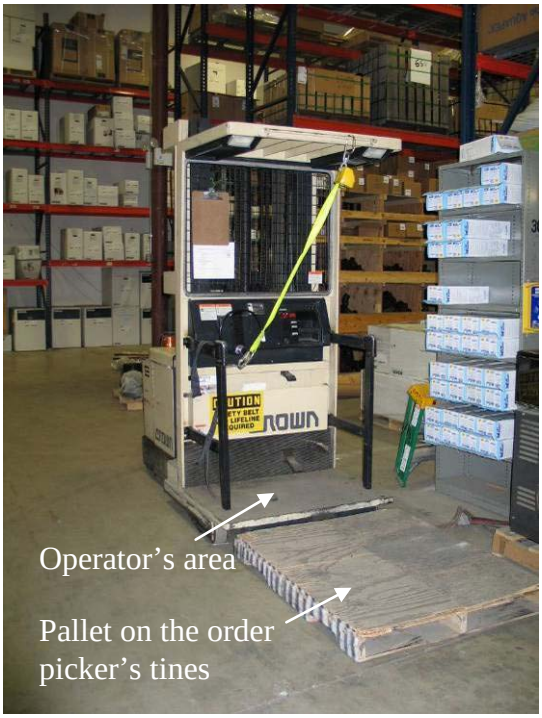

Figure 2 – Location of the incident with the toilet box askew on the top shelf.