



Massachusetts FACE • Occupational Fatality Report

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



Municipal Lead Custodian Dies in Fall from Mobile Scaffolding – Massachusetts

Investigation: # 11-MA-008-01

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SUMMARY

On March 27, 2011 a 69-year-old male municipal custodian (victim) was fatally injured while painting an interior section of a school lobby. The victim went to the school alone early on a Sunday morning to finish painting the lobby area that was previously started. Although the incident was un-witnessed, it appears that the victim was on mobile scaffolding when he fell from the scaffolding landing on the lobby floor. The victim was found by a co-worker later that same day when the co-worker had opened the school to let in two cooks for a fundraiser event that was going to take place that afternoon. The co-worker immediately placed a call for Emergency Medical Services (EMS). Within minutes EMS and the local police arrived at the incident location and the victim was transported to a local hospital where he was pronounced dead. The Massachusetts FACE Program concluded that to prevent similar occurrences in the future, schools should:

- **Ensure scaffolds are erected according to the manufacturer's guidelines and OSHA standards;**
- **Ensure that fall protection is available and used by employees exposed to fall hazards;**
- **Implement a buddy system for custodial staff to limit working alone from heights during off hours;**
- **Conduct a job safety analysis (JSA) for custodial tasks to ensure proper practices and procedures are implemented enabling the task to be performed safely;**
- **Provide all custodial staff with training on scaffolding and ladders that are used to complete tasks;**
- **Ensure that custodial departments develop, implement, and enforce a comprehensive health and safety program; and**
- **Provide work environments that, at a minimum, meet all relevant Occupational Safety and Health Administration (OSHA) regulations and industry accepted standards of practice per the Department of Labor Standards' policy.**

INTRODUCTION

On March 27, 2011, the Massachusetts FACE Program was notified by a local police department through the 24-hour Occupational Fatality Hotline that on the same day a 69-year-old male school custodian had died from injuries sustained when he fell from scaffolding. An investigation was initiated. On April 14, 2011, the Massachusetts FACE Program Director and a representative from the Massachusetts Department of Labor Standards (DLS) traveled to the school superintendent's office, the incident location, and to the police/fire departments and met with representatives at each location to discuss the incident. The police report and death certificate were reviewed during the course of the investigation. Photographs were taken of the incident location.

The elementary school where the incident took place is one of four elementary schools in a regional district that is made up of three towns. The school has approximately 700 students enrolled in kindergarten through fourth grade and is a 145,000 square foot two story building. The school maintenance crew consists of five custodians, including the victim who was the lead custodian. The victim had worked at this one school for 27 years and worked his way up from a second shift custodian to the first shift lead custodian.

The typical work day and week for the victim was Monday through Friday 7:00 a.m. to 3:00 p.m. The school district does provide training, some health and safety-based training, to staff, including the custodian staff. Training ranges from right to know (hazard communication), to sexual harassment, to blood borne pathogens. It was reported that there is no specific safety training about tools and equipment, such as safe use of ladders and scaffolding. The victim was part of a collective bargaining unit.

INVESTIGATION

The victim had taken the lead in applying for and successfully receiving a grant from a home improvement store for the school. Grants were available for a variety of kindergarten through grade twelve public school improvement projects. Improvement projects eligible for funding included, but were not limited to, landscaping and grounds improvement, library/media center enhancement, science/specialty lab creation or upgrade, or parent education programs. Grants provided each awarded school with \$100,000 in supplies. To complete the school improvement tasks, the school staff would perform the work, mostly on weekends. The school improvement work had been on going for approximately four months prior to the incident.

At the time of the incident, the victim had been painting an interior section of the school lobby (Figure 1). The school's lobby has a carpeted floor and the middle section of the lobby is an open foyer with a two story high ceiling. Two sides of the lobby have a second story hallway with a railing that overlooks the lobby area. Painting the lobby was one of the many projects scheduled to get completed using the supplies from the grant. Painting started the day before the incident, a Saturday, but the work crew, which included the victim, was not able to finish

painting the lobby in the one day. Work on the next day, a Sunday, had not been previously planned. However, it appears that the victim decided to go to the school that Sunday morning to finish painting the lobby. Reportedly, the school did not know that the victim was at the school on the day of the incident to continue the painting task.

There were three pieces of equipment located in the lobby that had been used during the painting tasks. These included a step ladder, a man lift, and mobile tubular frame scaffolding. Although the incident was un-witnessed, it appears that the main piece of equipment involved in the incident was the mobile scaffolding (Figure 2). The mobile scaffolding was approximately eight years old and appeared to be in good condition. The scaffolding had been donated to the school. The school did not have the owner's manual for the scaffolding.

The scaffolding found in the lobby on the day of the incident was assembled three levels high. It had four lockable caster wheels, some cross bracing, and some aluminum and plywood planking. None of the three scaffold levels were fully planked. The lowest level and the highest level of the scaffold had one plank each and the middle level of the scaffold had two planks. Cross bracing was missing on one side of the top level of the scaffold. Each section of scaffold was a little more than five feet high and approximately six and one half feet long. Therefore, both the middle and the highest sections that were planked would have been more than ten feet high. (Fall protection for scaffolding is needed on scaffold more than 10 feet above the ground or floor.) It appeared that only two of the four caster wheels were locked during the incident.

The section of wall that the victim was going to paint was located in the open foyer section of the school's lobby. The wall started at the first floor ceiling height, approximately 12 feet above the floor level of the lobby, and was approximately four feet high (Figure 1). A plastic drop cloth had been placed on the lobby floor to cover the carpet prior to the painting task, and the scaffolding was positioned on the plastic.

According to the time that the school alarm had been turned off, the victim had arrived at the school at 8:00 a.m. on the day of the incident. It appears that the victim was on one of the planked sections of the scaffolding when he fell from the scaffolding and landed on the floor below. There was a large amount of paint spilled covering some of the lowest level of the scaffolding, the plastic drop cloth, and the victim. There was a closed five gallon bucket of paint located on the scaffold's middle level and two paint trays with paint in them on the floor.

A co-worker of the victim arrived at the school at approximately 11:25 a.m. to open the school for two cooks who were part of a fundraiser that was taking place in the school auditorium later that afternoon. The co-worker and the two cooks found the victim lying underneath the scaffolding. The co-worker went to the victim then placed a call to Emergency Medical Services (EMS). Within minutes EMS and the local police arrived at the incident location and the victim was transported to a local hospital where he was pronounced dead.

CAUSE OF DEATH

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

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Municipal schools should ensure scaffolds are erected according to the manufacturer's guidelines and OSHA standards.

Discussion: In this case, the school did not have the owner's manual for the scaffold. The first step to ensure that a product is being set up and used as it was intended is to follow the procedures outlined in the manufacturer's owners manual. Therefore, in this case, an owner's manual for the specific scaffolding involved in the incident should have been obtained.

OSHA has regulations for the safe erection, use, and dismantling of scaffolding (29 CFR 1910.28, 29 CFR 1926.451 and 1926.452). OSHA requires that scaffolding is erected and dismantled under the supervision of a competent person. OSHA defines a competent person as a person who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. OSHA's general requirements for mobile tubular frame scaffolding includes, but is not limited to:¹

- Installing cross bracing;
- Ensuring all levels to be accessed are fully planked;
- Providing safe ladder access;
- Locking the scaffolding wheels;
- Installing guardrails along all open sides and ends of platforms;
 - Toprails must be installed at a height between 38 inches and 45 inches high and must be able to withstand a force of at least 200 pounds applied in any downward or horizontal direction;
 - Midrails must be installed at a height approximately midway between the toprail and the platform surface; and
 - Toeboards must be installed on all open sides of the scaffolding more than 10 feet above a lower level and that the toeboards are a minimum of at least three and one half inches in height.

In lieu of guardrails, cross bracing may serve as a toprail or midrail instead of guardrails, as long as the crossing point of the cross bracing is:¹

- Between 38 and 48 inches above the work platform for a toprail, or
- Between 20 and 30 inches above the work platform for a midrail.

Recommendation #2: Municipal schools should ensure that fall protection is available and used by employees exposed to fall hazards.

Discussion: The Occupational Safety and Health Administration (OSHA) requires that fall protection and/or personal protective equipment (PPE), such as safety harnesses and lanyards, are available and used by all employees exposed to fall hazards.² Specifically, OSHA requires fall protection to be used when working from a scaffolding section that is more than ten feet above a lower level.¹ Fall protection for scaffolding could have been in the form of guardrails as outlined in Recommendation #1.

In this case, it was unclear which level the victim was on prior to falling. If he was on the lowest level of the scaffolding, then no fall protection would have been needed based on OSHA regulations because it was less than ten feet from the floor. If the victim was on the middle or top level of the scaffolding, both levels would have been higher than ten feet from the floor, and fall protection should have been used.

Recommendation #3: Municipal schools should implement a buddy system for custodial staff to limit working alone from heights during off hours.

Discussion: School personnel reported they had not known that the victim went to the school on Sunday morning to continue to paint the lobby area. Implementing a buddy system, so no custodial employee is alone in the school or on the school grounds during off hours and performing tasks other than checking on the building, will help ensure that if an incident was to occur that help could be summoned more quickly.

In this case, the victim was performing physical tasks that required him to use equipment (scaffolding, man lift, and/or ladder) that would elevate him so he could access the area to be painted. Having another co-worker with him on the day of the incident might have benefited the victim by either potentially preventing the fall or by allowing for emergency medical services to be called immediately.

Recommendation #4: Municipal schools should conduct a job safety analysis (JSA) for custodial tasks to ensure proper practices and procedures are implemented enabling the task to be performed safely.

Discussion: A job safety analysis (JSA) is a technique to systematically evaluate job tasks to ensure the tasks are performed safely. It involves identifying all potential hazards and hazardous situations that could occur when performing tasks by focusing on the relationship between the worker, the task, the tools and the work environment. JSAs should be routinely performed to identify uncontrolled hazards by breaking down the tasks to be performed into steps, including the operation of any equipment and use of tools to complete the task. Each step should be evaluated to identify the hazards or potential hazards. Once hazards are identified, schools should take steps to eliminate or control these hazards.³

In this case, a JSA might have identified elements of the scaffolding that were not properly erected, including the levels that were not fully planked, the lack of fall protection available for accessing scaffolding levels higher than ten feet above the lower level, and that not all four of the scaffold wheels were locked. Once these hazards were identified during the JSA, the hazards could have been eliminated or controlled.

Recommendation #5: Municipal schools should provide custodial staff with training on scaffolding and ladders used to complete tasks.

Discussion: In this case, there were multiple pieces of equipment readily available for employees to use to access the area to be painted. Employees, including the victim, had not been provided training on the use of scaffolding and ladders, two of the available pieces of equipment. OSHA requires that employers provide training to employees about proper scaffold and ladder use and safety. The OSHA regulation 1926.454, *Training requirements*, requires employers to provide employees with training when they will be using scaffolding and aerial work platforms to complete tasks.⁴ Scaffolding work platform training should include, but not be limited to:

- How to choose the correct scaffold or aerial work platform for the job.
- Maximum weight capacity of the scaffold or aerial lift.
- Proper set up and use of the scaffold or aerial lift.
- Proper selection and use of fall protection.

Training requirements for ladders are located in the OSHA regulation 1926.1060, *Training requirements*, and states that employers should provide employees training on ladders that will enable each employee to recognize hazards related to ladders and stairways, and will train each employee in the procedures to be followed to minimize these hazards.⁵ Ladder training should include, but not be limited to:

- How to choose the correct ladder for the job, including type of ladder, length, and maximum weight capacity.
- Proper inspection of the ladder prior to use.
- Proper placement and handling of ladders.
- Proper set up and use of a ladder (Recommendation #2).

All trainings, including routine retraining, should be performed by a competent person (see definition of competent person in Recommendation #1).

Recommendation #6: Municipal schools should ensure that custodial departments develop, implement, and enforce a comprehensive health and safety program.

Discussion: In this case, the school did not have a comprehensive health and safety program, but did provide employees with some training addressed safety. A comprehensive written health and safety program that addresses common hazards custodial employees face, such as falls, electrical hazards, confined spaces and chemical hazards should be developed. When developing the program, schools should use their employees' expertise throughout the development process. Seeking employee input especially when conducting JSAs (Recommendation #4) will help ensure that hazards employees are exposed to when performing tasks are identified. Once controls for the identified hazards are developed these controls should be implemented into the tasks performed by employees. 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.

Schools should provide employees training on all sections of the health and safety program. The training should also include how to recognize hazards, avoid unsafe conditions, and that employees should not risk physical harm to accomplish tasks. Also it should be clear to employees who should be contacted when health and safety issues or questions arise. The training program content and the names and dates of employees completing the training should be documented and retained by the school. It should be ensured that the trainer who provides the training is qualified through education and/or experience to conduct training. OSHA has developed Web resources that address how to implement health and safety programs (www.osha.gov/dsg/topics/safetyhealth/evaluation.html).

Recommendation #7: Municipal schools should provide work environments that, at a minimum, meet all relevant Occupational Safety and Health Administration (OSHA) regulations and industry accepted standards of practice per the Department of Labor Standards policy.

Discussion: The federal Occupational Safety and Health Act requires private sector employers to provide workplaces that are free from recognized hazards likely to cause death or serious physical harm to employees. While private sector employees are covered by federal OSHA, public sector employees in Massachusetts are not. The Massachusetts Department of Labor Standards (DLS), in accordance with Chapter 149 Section 6, is charged with inspecting public sector workplaces in Massachusetts and determining what procedures and practices are required to protect workers.⁶ As a matter of policy, DLS references OSHA Standards as well as other consensus standards, such as ANSI (American National Standards Institute), in determining whether proper procedures are being followed to protect workers.

REFERENCES

1. Code of Federal Regulations, 29 CFR 1926.541 General requirements. Washington D.C.: U.S. Printing Office, Office of the Federal Register.
2. Code of Federal Regulations, 29 CFR 1926.501 Duty to have fall protection. Washington D.C.: U.S. Printing Office, Office of the Federal Register.
3. U.S. DOL 2002. *Job Hazard Analysis*. Occupational Safety and Health Administration, OSHA Publication No. OSHA-3071, 2002 (revised).
4. Code of Federal Regulations, 29 CFR 1926.454 Training requirements. Washington D.C.: U.S. Printing Office, Office of the Federal Register.
5. Code of Federal Regulations, 29 CFR 1926.1060 Training requirements. Washington D.C.: U.S. Printing Office, Office of the Federal Register.
6. General Laws of Massachusetts, Title XXI, Labor and Industries, Chapter 149: Section 6. Safety devices and means to prevent accidents and diseases generally; fees for structural painting.

Figure 1 – School lobby.



Figure 2 – Scaffolding involved in the incident.

