Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

The National Institute for Occupational Safety and Health (NIOSH)

NIOSH > Workplace Safety and Health Topics
> Fatality Assessment and Control Evaluation(FACE) Program > State FACE Reports

Promoting productive workplaces through safety and health research NIOSH

Carpenter Dies after Falling 11 Feet off a Ladder Jack Scaffold in Massachusetts

MASSACHUSETTS FACE-91-04

SUMMARY

A 54 year old carpenter died after falling 11 feet from a ladder jack scaffold he was standing on to prepare the roof of a new building for shingling. He was working with two other carpenters applying tar paper to the roof. The victim and one other worker were standing on wooden staging, and a third worker was on top of the roof section. A forklift lull truck driven by an unlicenced operator hit and ran over one of the ladders supporting the scaffolding causing it to collapse. The victim fell to the ground and the scaffold plank fell on top of him. The forklift operator then backed up the truck crushing the victims head. The fall was witnessed by the victims two co-workers. The victim was not provided with fall protection to any personal protective equipment. He died of head trauma. The Department of Labor and Industries investigators concluded that, to prevent future similar occurrences, employers should:

- **ensure that only trained employees operate machinery and motor vehicles at the job-site**
- **protect ladders by barricades it the ladders are located in areas where they could be displaced**
- **place ladders on a stable base and keep the area at the bottom of the ladder clear and unobstructed**
- **secure parable ladders to keep them from being displaced**
- **maintain an appropriate pitch when using ladders to prevent their sliding down the face of the building**
- **develop, implement and enforce a comprehensive safety program that includes worker training in recognizing and avoiding unsafe working conditions**
- **conduct daily safety inspections of the job site**

INTRODUCTION

The victim was an interior/exterior finish carpenter, one of a five member roofing crew. He had thirty years experience in his trade and nine months employment with the contractor. The project had been started two weeks earlier. The contractor, who had been in business for fourteen years, had not provided the workers with health and safety training.

INVESTIGATION

The employer, a roofing contractor, was hired to shingle a new addition to a school. Three of the crew members were working on the west side of the addition, lacing tar paper in preparation for shingling. The victim and a co-worker were standing on a 2″x10″x16′ plank supported by ladder jacks. An employee of another on-site subcontractor, driving a forklift truck along the west side of the building, misjudged the clearance of the truck as he was making a turn and ran over the bottom section of one of the ladders supporting the plank. The victim fell approximately eleven feet to the ground. He landed on his back with the plank on his chest. The forklift driver, who was neither licensed nor formally trained in the operation of such a vehicle, claimed not to have seen any workers in the area wen he hit the ladder. The driver stopped the forklift and backed it up so he could pick up the ladder. When he got off the forklift, the driver saw the victim lying on the ground. The victim's head had been crushed by the forklift tire.

The local police and ambulance were immediately summoned. The victim was unresponsive at the scene. Cardiopulmonary resuscitation was administered and the patient was airlifted to a medical center. He died shortly after.

Neither the victim nor any of his co-workers used any fall protection. The ladders were not secured to the building and the work area was not barricaded. Regular safety inspections were not conducted on-site.

CAUSE OF DEATH

The medical examiner reported the cause of death to be traumatic injury to the head.

RECOMMENDATION/DISCUSSION

Recommendation #1: Employers should ensure that only trained employees operate machinery and mother vehicles at the job-site.

Discussion: the driver of the forklift did not have a State forklift operator's license. While such a license is not required, OSHA standard 29 CFR 1926.20(b) (4) does require that employers permit only those employees qualified by training and experience to operate equipment and machinery. The driver was an iron worker by trade and had some experience operating forklift trucks. However, these vehicles can vary in size and operation, and the ironworker had not previously operated the forklift truck involved in the incident. In fact, the vehicle was owned by an onsite contractor other than the ironworker's employer.

Recommendation #2: Employers should protect ladders by barricades if the ladders are located in areas where they could be displaced.

Discussion: OSHA standard 29 CFR 1926.1053(b) (8) and DLI Standard 454 CMR 10.103(1) (i) prohibit ladders form being placed in any location where they may be displaced by activities being conducted on any other work, unless protected by barricades or guards. A visible barricade or other marker delineation the bade of the ladders could have been effective in encouraging the forklift driver to allow a wider berth in making the turn around the corner of the building.

Recommendation #3: Employers should place ladders on a stable bade and keep the area at the bottom of the ladder clear and obstructed.

Discussion: OSHA Standard 29 CFR 1926.1053(b) (6) and (9) and DLI Standard 454 CMR 10.103(1) (g) require that portable ladder feet be placed on a substantial base and that the surrounding area be kept clear. The ladders had been placed on irregular ground and the surrounding area was undifferentiated from the roadway.

Recommendation #4: Employers should secure portable ladders to keep them from being displaced.

Discussion: OSHA Standard 29 CFR 1926.1053(b) (1) and DLI Standard 454 CMR 10.103(1) (k) require that portable ladders in use be tied, blocked, or otherwise secured. While this precaution is not likely to have prevented the accident, it might have provided enough stability for the victim to have grabbed the ladder before falling off the scaffolding.

Recommendation #5: Employers should maintain an appropriate pitch when using ladders to prevent their sliding down the face of the building.

Discussion: OSHA Standard 29 CFR 1926.1053(b) (5) (i) and DLI Standard 454 CMR 10.103 (1) (h) require that portable ladders be used at such a pitch tat the horizontal distance from the top support to the foot of the ladder is about one quarter of the working length of the ladder. The low pitch resulted in the feet of the ladders being located far enough from the building that they were vulnerable to being struck by moving vehicles.

Recommendation #6: Employers should develop, implement and enforce a comprehensive safety program that includes worker training in recognizing and avoiding unsafe working conditions.

Discussion: OSHA Standard 29 CFR 1926. 21(b) (2) requires that the employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury. The lack of a safety program was evidence by numerous ongoing safety hazards observed on-site by the DLI inspectors. Safe work practices related to the job being performed should be regularly reviewed with employees. If the crew members had been trained and informed of the hazards of some of their work practices, they may have insisted on the proper precaution.

Recommendation #7: Employers should conduct daily safety inspections of the job site.

Discussion: OSHA Standard 29 CFR 1926.20(b) (2) requires that the employer designate competent persons to perform frequent and regular inspections of the job site, materials and equipment. DLI Standard 454 CMR 10.03(8) requires daily inspections by the general contractor and/or subcontractor. Such inspections could have brought to light in a timely fashion the safety hazards that contributed to the incident.

REFERENCES

1. 29 CFR 1926.20(b)(2) and (4), Code of Federal Regulations, Washington, D.C.: U.S. Government Printing Office, Office of the Federal Register. Page 16. (1991)

2. 29 CFR 1926.1053(b), Federal Register, Vol. 55 No. 220. Pages 47690-47691. (November 14, 1990)

3. 29 CFR 1926.21(b) (2), Code of Federal Regulations, Washington, D.C.: U.S. Government

Printing Office, Office of the Federal Register, Page 16. (1991)

4. 454 CMR 10.103, Code of Massachusetts Regulations, Boston, MA. (July 8, 1988)

5. 454 CMR 10.03, Code of Massachusetts Regulations, Boston, MA. (July 8, 1988)

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

Back to Massachusetts FACE reports (http://wwwn.cdc.gov/NIOSH-FACE/Default.cshtml?Category=0000&Category2=ALL&State=MA&Submit=Submit)

Back to NIOSH FACE Web

Page last reviewed: November 18, 2015
Content source: National Institute for Occupational Safety and Health