NIOSH

FACE

Fatality Assessment and Control Evaluation Program

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A 16-Year-Old Roofer Helper Dies After 28-Foot Fall Down an Unguarded Elevator Shaft Opening - Pennsylvania

SUMMARY

On June 10, 2000, a 16-year-old roofer helper (the victim) died after falling approximately 28 feet down an unguarded elevator shaft opening. The victim's employer (the victim's father) had been subcontracted to put a roof on a two-story commercial office building under construction. On the day of the incident, the victim and his 25-year-old brother were cutting and stacking lumber for roof trusses on the second floor of the structure. To cut the lumber for trusses, the brothers were placing it on wood sawhorses. They had set the sawhorses up in the vicinity of a 19-foot, 7-inch by 25-foot, 2-inch unguarded elevator shaft opening in the floor. The brothers had been working cutting the lumber since 8 a.m. in the same area. At approximately 2 p.m., the older brother told the victim to pick up the scrap lumber around the sawhorses and clean up the work area. The older brother then walked around one sawhorse to pick up the circular saw while the victim walked around the other sawhorse toward the unguarded elevator shaft. The older brother heard boards rattling and looked up and didn't see the victim. He went to the edge of the unguarded shaft opening and saw the victim lying on the dirt floor at the bottom of the elevator shaft. An employee of the prime contractor working at ground level heard a noise and looked over to see the victim lying on the ground. He ran to the victim, then to the company truck to call 911. The victim had a faint pulse and shallow breathing. When the Emergency Medical Service (EMS) responded, they attended to the victim then transported him to the hospital where he was pronounced dead. NIOSH investigators concluded that, to help prevent similar occurrences, employers should

- ***ensure that all employees are protected from falls when the potential for falls exist***
- ***ensure that all employees receive training in hazard awareness, identification, and control***
- ***comply with child labor laws which prohibit youths less than 18 years of age from working in occupations that involve roofing***

Fatality Assessment and Control Evaluation (FACE) Project

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatality Assessment and Control Evaluation (FACE) investigations when notified by participating states (North Carolina, Pennsylvania, South Carolina, Tennessee, and Virginia); by the Wage and Hour Division, Department of Labor; or when a request for technical assistance is received from NIOSH-funded state-level FACE programs in Alaska, California, Iowa, Kentucky, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Texas, Washington, West Virginia, and Wisconsin. The goal of these evaluations is to prevent fatal work injuries in the future by studying the work 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. The FACE program does not seek to determine fault or place blame on companies or individual workers. For further information visit the FACE website at **www.cdc.gov/niosh/face/faceweb.html** or call toll free 1-800-35-NIOSH.

INTRODUCTION

On June 10, 2000, a 16-year-old construction laborer (the victim) died after falling 28 feet down an unguarded elevator shaft. On June 14, 2000, the National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), was notified of the incident by the U.S. Department of Labor, Wage and Hour Division. On August 7, 2000, a DSR occupational safety and health specialist conducted an investigation of the incident. The incident was reviewed with the Occupational Safety and Health Administration (OSHA) compliance officer and Wage and Hour Division investigator assigned to the case. Pictures taken by the OSHA compliance officer immediately after the incident, the police report and death certificate were reviewed. The employer declined to participate in the investigation, and the investigator was denied entry to the site.

The employer (the victim's father) operated a roofing company that had been in business for 15 years, employing six workers at the time of the incident. The company had no written safety policies or safety program. Training for workers was provided on the job. This training was limited to roofing activities. There was no training given to employees pertaining to hazard awareness or identification. Records showed that the employer had been cited by Wage and Hour 10 years prior to the incident for allowing a 15-year-old (the victim's 25-year-old brother) to operate a powered circular saw in violation of Hazardous Occupation Order number 5 which prohibits youths less than 18 years old from operating power-driven woodworking machines. The victim had worked for his father for approximately 3 years.

INVESTIGATION

The employer had been subcontracted to install the roof on a two-story commercial office building under construction. The company had a crew of four workers on site including the victim's grandfather, two roofers (including the owner's 25-year-old son) and a roofer helper (the victim, the owner's 16-year-old son). The crew had been on site for 1 month and had completed approximately two-thirds of the roofing work. On the day of the incident, two crew members were involved in cutting lumber for the roof trusses, while the other crew members installed the trusses; however, all four crew members alternated the jobs of cutting wood for the trusses, installing the trusses, and applying plywood and roofing materials.

On the day of the incident, the two sons of the owner were involved in cutting the lumber for the roof trusses on the second floor of the structure. They had set up two wooden sawhorses and were laying the lumber to be cut on the horses. The horses were placed in the vicinity of an elevator shaft opening in the floor. The opening measured 19 feet, 7 inches by 25 feet, 2 inches. The opening was unguarded and no fall protection was used by the workers. The brothers had stacked the uncut lumber for the trusses on the side of the saw horses nearest the elevator shaft opening. The cut lumber was stacked on the opposite side of the sawhorses.

The crew arrived at the site at 6:45 a.m. The brothers began cutting the lumber at approximately 8 a.m. and continued to do so until their lunch break from noon until approximately 1 p.m. The brothers continued the same task after their lunch. At approximately 2 p.m., the older brother told the victim to pick up the scrap lumber around the sawhorses and clean up the work area. The older

brother then walked around one sawhorse to pick up the circular saw while the victim walked around the other sawhorse toward the unguarded elevator shaft. The older brother heard boards rattling, looked up and didn't see the victim. He went to the edge of the unguarded shaft opening and saw the victim lying on the dirt floor at the bottom of the elevator shaft. An employee of the prime contractor working at ground level heard a noise and looked over to see the victim lying on the ground. He ran to the victim, then to the company truck to call 911. The victim had a faint pulse and shallow breathing. When the Emergency Medical Service (EMS) responded, they attended to the victim with the help of police officers who had arrived at the scene. The police provided traffic support as the EMS transported the victim to the hospital where he was pronounced dead.

CAUSE OF DEATH

The attending physician listed the cause of death as multiple trauma.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should ensure that all employees are protected from falls when the potential for falls exist.

Discussion: Every worker exposed to a fall of over 6 feet due to the unprotected edge of a floor opening should be protected from falls by means of a guardrail system, safety net systems, or personal fall arrest systems. OSHA regulations pertaining to fall protection may be found in 29 CFR 1926.501.[1] OSHA regulations pertaining to the erection of guardrail systems may be found in 29 CFR 1926.502.[2]

Recommendation #2: Employers should ensure that all employees receive training in hazard awareness, identification, and control.

Discussion: All employees should be trained to identify the hazards associated with the work they perform. Pre-work walk-around inspections should be conducted by a competent person[a] prior to each job and each day's work to identify hazards that might be specific to that job or that day's work. A pre-work inspection might have identified the hazard presented by the unguarded opening. The opening could then have been guarded or an appropriate fall arrest system could have been supplied to the workers.

Recommendation #3: Employers should comply with child labor laws which prohibit youths less than 18 years of age from working in occupations that involve roofing.

Discussion: While the victim was not performing prohibited activities on the day of the incident, he had applied roofing materials to this structure several times during the company's time at the site. The Fair Labor Standards Act (FLSA) includes provisions to protect youths by prohibiting their employment under conditions that would be detrimental to their health or well- being. These provisions address appropriate occupations for specific age groups. Hazardous Occupation Order No.16

[a]A competent person, as defined by OSHA, is one 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 problems.

prohibits youths under the age of 18 years old from working in occupations involving roofing. This minimum age applies even when the minor is employed by the parent or a person standing in place of the parent. These employment standards are listed and explained in bulletin WH-1330, U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division,[3] and can be viewed on the Department of Labor, Wage and Hour Division web site (http://www.dol.gov/dol/esa/public/whd_org.htm).[4]

REFERENCES

1. Code of Federal Regulations 29 CFR. 1926.501 2000 edition. U.S. Government Printing Office, Office of the Federal Register, Washington, D.C.

2. Code of Federal Regulations 29 CFR. 1926.502 2000 edition. U.S. Government Printing Office, Office of the Federal Register, Washington, D.C.

3. DOL [1991]. Child labor requirements in nonagricultural occupations under the Fair Labor Standards Act. Washington, D.C.: U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division, WH-1330.

4. Department of Labor, Wage and Hour Division web site: http://www.dol.gov/dol/esa/public/whd_org.htm

INVESTIGATOR INFORMATION

This investigation was conducted by Virgil J. Casini, Team Leader, Fatality Assessment and Control Evaluation Team, Surveillance and Field Investigations Branch, Division of Safety Research.

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