

## Electrician Falls from Ladder in Wyoming

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### SUMMARY

A 58 year old male electrician died in a hospital from injuries he had received 10 days earlier when he fell from a ladder while changing a light bulb in an apartment building where he was in charge of maintenance. The victim was transported by ambulance to the hospital emergency room with hemorrhagic contusion, multiple rib fractures, appearance of a lung contusion, and deformity of his face and skull that were the result of prior bone grafting. During initial evaluation, it was determined that the patient also had a high blood-alcohol level, obstructive lung disease and various types of infection. Over time, the patient's condition deteriorated and, partially because of physical condition unrelated to his injuries, he would not be able to survive without vigorous efforts, and would probably not be able to move his extremities or empty his stomach normally even with intensive care. It was decided in consultation with family members, that no further vigorous efforts including ventilatory support or CPR would be performed and the patient expired.

Employers may be able to minimize the potential for occurrence of this type of incident through the following precautions:

- **Provide safety information and/or training for apartment managers and maintenance personnel**
- **Employ standards for managerial/maintenance personnel to address use of alcohol and drugs in the workplace**
- **Provide for periodic examination and testing of equipment used for upkeep and maintenance of buildings.**

### INTRODUCTION

At mid-afternoon on Friday, January 29, 1993, an electrician who was employed by an apartment complex to serve as co-manager and be in charge of building maintenance had been changing a light bulb when he fell from a ladder, striking his head and chest on the cement floor at the front of the building. The victim was standing on the 3rd or 4th step of a 6' folding aluminum ladder, while his 13 year old grandson watched inside the building to keep residents from hitting the ladder by opening the door. He had completed the light bulb replacement when he fell to the floor. The legs of the ladder were bent, but there was no determination as to whether the fall was due to the ladder collapsing or slipping, or the victim's losing his footing or balance. The victim's head and face hit the pavement from a distance of not more than 8' at the time of job completion.

## **INVESTIGATION**

Through a reciprocal notification agreement with the OSHA Administrator of the Wyoming Department of Employment, the WY-FACE Project was notified of the incident at 9:55 am on May 14. The incident had not been reported to OSHA on a timely basis, as the place of business was not one routinely reporting to OSHA, and the death occurred 10 days after the incident occurred. As a result of the delayed death, government officials that would have been most likely to notify authorities of a work related death overlooked the incident as being reportable. Since the incident was not seen as fatal or otherwise suspect, no law enforcement investigation was conducted.

The project coordinator requested and received information from the employer, the coroner, the ambulance service, and the hospital where the victim was cared for and later died. Facts about the incident were derived from those sources.

The victim had been an electrician with a family business, and had previously worked in trucking and excavation. For the past seven years, following a severe cancer operation in which muscle from his head and chest had been grafted to reconstruct a jaw that had been removed, the victim and his wife had been managing a 96 unit apartment complex. Part of the victim's responsibilities in the management of that complex included building maintenance and upkeep involving electrical repair, plumbing, and minor carpentry.

He was semi-retired but remained quite active as co-manager of the apartment buildings. He was a chronic smoker and drank beer regularly. At the time of the incident, his blood-alcohol level was excessively high. The physical disability resulting from a probable squamous carcinoma of the tongue six years earlier made him highly susceptible to facial injury. He also suffered from a severe obstructive lung disease (emphysema and bronchitis).

The task being conducted was to climb up onto the 3rd or 4th step of a 6' folding aluminum ladder to a height of approximately 8' to change a light bulb. The light fixture was on the outside of the building, adjacent to the front door. The ladder was on a mat on a dry concrete surface of the porch. There was a small amount of snow to the side of the porch, but the surface where the ladder had been set up was dry. The victim's grandson was immediately inside the building, watching the door so that departing residents would know not to open the door and hit the ladder.

The grandson heard the ladder fall, followed by a thud on the sidewalk, and opened the door to see what had happened. He saw his grandfather lying on the porch, and called for help. Ambulance and fire department responders found the patient initially unresponsive to verbal stimulus, but responsive shortly after arrival. About 10cc of thick, dark blood was sectioned from his mouth. His chest was tender and thick sounding mucous could be heard in the lungs. His skin was cool and pulse irregular.

On arrival at the emergency room, his eyes were open, speech was garbled, and he complained of back pain. Initial diagnosis was multiple trauma including closed head injury, multiple left rib fractures, mild left lung contusion, acute and chronic ETOH intake.

## **CAUSE OF DEATH**

The Medical Examiner listed the cause of death as head trauma (intracranial bleeding).

## RECOMMENDATIONS/DISCUSSION

This incident could have been prevented by limiting the task to workers who have not been drinking. The safety precautions that were taken (i.e., placing the ladder on a safety mat and having a person available to watch the door) are commendable. However, the risks involved in using a ladder and in electrical activities are too great to be entrusted to someone with a high blood-alcohol level.

The incident may not have resulted in death if the victim had been in better health. His facial injury, breathing disabilities, and nutritionally marginal diet may well have contributed to the weakened condition that limited his potential for recovery. The effects of chronic smoking and excessive use of alcohol may also have been contributory to the death that occurred some 10 days after the incident.

Nonetheless, the event that precipitated the injury that resulted in death was the fall from a ladder. Had that fall not occurred, he may well have lived several more years.

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## FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (FACE) PROJECT

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying the working 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.

States participating in this study include: Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

NIOSH Funded/State-based FACE Projects providing surveillance and intervention capabilities to show a measurable reduction in workplace fatalities include: Alaska, California, Colorado, Georgia, Indiana, Iowa, Massachusetts, New Jersey, Minnesota, Missouri, Wisconsin and Wyoming.

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Additional information regarding this report is available from:

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**Please use information listed on the Contact Sheet on the NIOSH FACE web site to contact [In-house FACE program personnel](#) regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.**