

## **MISSOURI FACE INVESTIGATION #93MO152**

### **SUBJECT:**

#### ***Journeyman Roofer Dies From 12-Foot-Fall From Ladder***

### **SUMMARY:**

On November 30, 1993 a 35-year-old journeyman roofer fell 12 feet from a metal and fiberglass extension ladder. The victim and a co-workers were finishing up the job-site after replacing the roofing material of a bank building. The workers separated an extension ladder into two halves. The lower section, with proper feet attached was positioned against a roof over the drive-in banking lanes. The upper section with rounded end caps was use by the victim on a small section of roof over an employee entrance. The victim completed the task on the small roof and returned with the ladder to the drive-in lanes and placed it against the roof and beside the ladder's lower section. The victim then retrieved some tools and a bristle head broom and proceeded to climb the extension portion of the ladder. He was approaching the roof line when the ladder slid outward at the bottom. The victim fell with the ladder, striking his head on the end of the broom stick, and inflicting head trauma. He was taken by ambulance to a local hospital, then later transferred to a regional trauma center where he died the following day.

The MO FACE Investigator determined that in order to prevent similar incidents employers should:

- ensure that ladders are used in accordance with existing safety standards
- instruct workers that upper sections of extension ladders should never be used as single ladders
- train employees in the proper use of tools and equipment needed to perform their assigned tasks

### **INTRODUCTION:**

On November 30, 1993 a 35-year-old journeyman roofer fell 12 feet from a metal and fiberglass extension ladder. The victim and a co-workers were finishing up the job site after replacing roofing material on a bank building. The employer is a commercial roofing and sheet metal installer who had been in business for ten years. The business employed 24 persons, of whom 20 were journeyman roofers, at the time of the incident. The company had been at the incident site for seven days prior to the incident, and the victim had worked at the site for three days. The victim had been employed by the company in the past and had been currently employed for seven months.

The employer has a safety officer and written safety procedures for all tasks being performed by the workers, including ladder safety. The victim was a union employee and received on-the-job, manuals, and video training. He was not following standard operating procedures at the time of the incident.

The MO FACE Investigator was notified of the incident on December 2, 1993, by a office co-worker and proceeded with an incident investigation. Records obtained for the investigation include the death certificate, the medical examiner report, and the company safety manual and the documents obtained from the Occupational Safety and Health Administration (OSHA) under the Freedom of Information Act.

## **INVESTIGATION:**

On November 30, 1993 a 35-year-old journeyman roofer fell 12feet from a metal and fiberglass extension ladder. The bank's roofing material had been replaced during the week prior to the incident. The victim and a co-worker were assigned the task of installing some flashing and cleaning up the job-site. The workers arrived on site around 12:30 p.m. on November 30, 1993. The workers had one properly constructed 40-foot extension ladder and decided to separate it into to halves so that the victim could access a small section of roof over an employee entrance. The workers blocked off a lane at the drive-in banking area located at the side of the building. The workers then set the lower portion of the extension ladder with the proper slip-resistant feet against the roof over the drive-through lanes. The upper section (extension portion) of ladder was moved by the victim to a roof over the employee entrance. The victim

completed the task on this roof, then returned the ladder to the drive-in banking area, positioning the extension portion of the ladder against the roof and directly beside the ladder's mate. Though unwitnessed, the following incident description was captured on the bank surveillance video. The victim then retrieved a some nails or tools and a large bristled broom, then proceeded to climb the extension portion of the ladder. When the victim was nearing the roof line the bottom of the ladder slid outward and the victim and ladder fell to the ground. The broom, being carried bristles down, struck the pavement first and then the victim's head struck the end of the broom stick. A bank employee heard the ladder fall and looked out the window to see that the victim had fallen and was on the ground. Emergency assistance was requested through a call to 911. The victim was semi-conscious when the emergency assistance arrived to treat and transport him to a local hospital for treatment. The victim was then taken by air ambulance a short time later to a regional trauma center where he died the next day.

**CAUSE OF DEATH:**

Penetrating Head Injury

## RECOMMENDATION AND DISCUSSION

**Recommendation 1: Employers should ensure that ladders are used in accordance with existing safety standards.**

**Discussion:** The Occupational Safety and Health Administration (OSHA) construction standards require that the base, or feet, of portable ladders be placed on a substantial base, that they are set up at a proper angle, and that ladders in use be tied, blocked, or otherwise secured to prevent displacement.

**Recommendation 2: Employers should instruct workers that upper sections of extension ladders should not be used as single ladders.**

**Discussion:** The metal extension ladders American National Standards Institute (ANSI) standard A14.2-1982, 6.2.7, Extension Locking Device, requires that permanent lettering not less than 1/8th inch high reads: **“CAUTION-THIS LADDER SECTION IS NOT DESIGNED FOR SEPARATE USE.”** Or permanently attached stops shall be provided to prevent removal of the section. Permanently attached stops are considered to be those that would require cutting, drilling, or similar forcible means for removal.

The upper sections of extension ladders are rarely equipped with safety feet and are not intended to be used as single ladders. Using a section of an extension ladder in this manner creates potential hazards that can result in serious injuries or death as we see in this incident.

**Recommendation 3: Employers should train employees in the proper use of tools and equipment needed to perform their assigned tasks.**

**Discussion:** The employer had a written safety plan including a section on ladder safety. The plan includes rules to

tie off the top and bottom of each ladder, and not to separate the ladders and use the extension portion. It was also written not to carry equipment, tools, or accessories while climbing a ladder. Though the victim was not following standard operation procedures at the time of the incident there was no positive indication that the victim was trained in ladder safety or that he had received positive enforcement of these rules by management.

The Missouri Department of Health, in co-operation with the National Institute for Occupational Safety and Health (**NIOSH**), is conducting a research project on work-related fatalities in Missouri. The goal of this project, known as the Missouri Occupational Fatality Assessment and Control Evaluation (**MO FACE**), is to show a measurable reduction in traumatic occupational fatalities in the State of Missouri. This goal will be met by identifying causal and risk factors that contribute to work-related fatalities. The identification of these factors will

**SIGNATURES:**

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**Chief Investigator**

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## **DISSEMINATION LIST**

National Institute for Occupational Safety and Health NIOSH  
Alaska State Department of Health and Social Services AK FACE Program  
California State Public Health Foundation CA FACE Program  
Colorado State Department of Health CO FACE Program  
Georgia State Department of Health GA FACE Program  
Iowa State Department of Public Health IA FACE Program  
Indiana State Department of Health IN FACE Program  
Kentucky State Department of Health KY FACE Program  
Massachusetts State Department of Health MA FACE Program  
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Nebraska State Department of Health NE FACE Program  
New Jersey State Department of Health NJ FACE Program  
Wisconsin State Division of Health WI FACE Program  
Wyoming State Department of Health WY FACE Program  
Jackson County Missouri Office of the Medical Examiner  
Mine Safety and Health Administration  
Missouri Department of Agriculture  
Missouri Department of Elementary & Secondary Education  
Missouri Department of Health, Office of Injury Control  
Missouri Department of Labor and Industrial Relations  
Missouri Department of Public Safety  
Missouri Department of Social Services  
Missouri Farm Bureau  
Missouri Head Injury Advisory Council  
Missouri Hospital Association  
Missouri Injury Control Advisory Council  
Missouri Police Chiefs Association  
Missouri Safety Council  
Missouri Sheriff's Association  
Missouri Southern State College  
Central Missouri State University  
Missouri State Labor Council, AFL-CIO  
North Central Missouri Safety Council  
OSHA Area Office, Kansas City, MO  
OSHA Area Office, St. Louis, MO  
Safety and Health Council of Western Missouri & Kansas  
Safety Council of Greater St. Louis  
Safety Council of the Ozarks  
Shelter Insurance Companies  
St. Joseph Safety Council  
St. Louis City Medical Examiner Office  
St. Louis County Department of Community Health  
St. Louis County Medical Examiner Office  
The Educational Center on Family Violence  
University of Missouri, Agricultural Engineering