



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research 

Ironworker Dies Following a 35-Foot Fall at Construction Site

FACE 8902

INTRODUCTION

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.

On October 8, 1988, a 29-year-old male ironworker (a steel beam connector) died as a result of injuries that occurred when he fell 35 feet at a construction site on September 29, 1988.

CONTACTS/ACTIVITIES

State officials notified DSR of this fatality and requested technical assistance. On November 4, 1988, a DSR field team met with the Occupational Safety and Health Administration compliance officer, a city building inspector, and company officials. The incident site was visited and photographed.

OVERVIEW OF EMPLOYER'S SAFETY PROGRAM

The employer is a steel construction firm employing 40 individuals in steel erection operations. Of these, 14 are steel beam connectors. The company has been in business for the past 50 years. The company has written safety policies and procedures; however, it relies upon the employees' labor union to provide safety training for the employees.

SYNOPSIS OF EVENTS

The victim was a member of a six-man crew erecting the structural steel framework for an addition to an existing building. The victim, a connector, performed the initial "bolt-up" of the structural steel members. After the connector completes work on a component, other members of the crew perform the final bolting operation, "trueing" the involved steel components, inserting all remaining bolts in the column, and tightening these bolts to the required torque.

At the time of the incident a vertical steel column had been installed and the crew was placing a horizontal beam to connect this column to an adjacent one. The adjacent column had already been "trued" and final bolt-up of this column completed. As the crew attempted to place the horizontal beam in position they found that the former vertical column was out of alignment. In order to proceed, the bolts securing this vertical column had to be loosened and the column moved slightly so there was clearance for the horizontal beam.

To do this the victim sealed the column and, while holding onto the column with one hand, attempted to loosen the connecting bolts with the other. As he applied pressure to the wrench it slipped, causing him to lose his balance and fall from the column. The victim fell 34 feet 6 inches to the concrete floor below, striking his head. Personnel on the scene immediately after the incident reported seeing a small pool of blood on the floor around the victim's head. Emergency medical service paramedics were immediately called to the scene and arrived approximately 5 minutes after the fall. The victim was transported to a local medical center where he died 10 days later.

The victim was not using any fall protection equipment at the time of the incident. According to company officials at the scene, this was "standard procedure" for connectors.

CAUSE OF DEATH

The medical examiner's ruling as to cause of death was pending at the time of this report.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Fall protection should always be provided when the potential for a serious or fatal fall from elevation exists.

Discussion: The standard procedure which permitted the victim to work without fall protection failed to provide safety for the worker. While belts and lanyards were present at the work site, they were not used in connecting operations. Although in some situations traditional forms of fall protection such as the belt/lanyard combination may not be practical, some alternative form of fall protection should always be used to prevent a serious fall. Some alternative methods for these situations include (1) safety nets rigged below the work area as required by 29 CFR 1926.106, or (2) a controlled descent device (retractor reel) secured to an overhead crane and to the worker's safety belt. If either of these systems had been employed this fatality could have been prevented.

Recommendation #2: Management should develop written safety policies and procedures addressing the hazards to which employees are exposed, and should enforce these safe work practices at the work site.

Discussion: In this company the acceptance of a potentially serious or fatal fall, as indicated by the standard procedure of working without fall protection during connecting operations, demonstrates a lack of commitment to employee safety. Companies should emphasize safety of their workers by developing, implementing, and enforcing safe work procedures to prevent incidents such as this.

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