



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces  
through safety and health research



# Carpenter Dies After Falling From The Roof of a Carport Addition That Collapsed While Under Construction in South Carolina

FACE 9126

## SUMMARY

A male carpenter (victim) died after he fell 8 feet from the roof of a carport addition that collapsed. The victim had been hired by a local businessman to build a 16-foot-wide by 14-foot-long by 8-foot-high addition to an existing carport. The victim was assisted by three co-workers. The outer frame of the addition had been set in place and the roof joists and roof sheathing had been installed. One side of the frame was anchored to the existing carport with nails; the opposite end was supported by single 2 by 4 (2-inch-thick by 4-inch-wide) boards temporarily positioned at each corner.

On the day of the incident, the four workers were on the roof of the new addition installing the felt paper that would serve as a base for the shingles. The victim was standing at the lower end of the addition away from the existing car port when the 2 by 4 boards gave way and the addition collapsed and pulled away from the carport. The victim fell backwards from the 8-foot-high roof edge and struck his head on the ground, breaking his neck. NIOSH investigators concluded that, in order to prevent similar occurrences, employers should:

- **conduct a job hazard analysis prior to starting a job to identify and control any potential hazards that might arise during the job**
- **ensure that elevated work surfaces are adequately supported prior to climbing onto and working from those surfaces**
- **provide fall prevention equipment and ensure its use where workers are exposed to fall hazards.**

## INTRODUCTION

On August 3, 1991, a 66-year-old male carpenter died after falling 8 feet from the roof of a carport addition that collapsed while under construction. On August 15, 1991, officials of the South Carolina Safety and Health Administration notified the Division of Safety Research (DSR) of this incident, and requested technical assistance. On August 20, 1991, a DSR safety specialist traveled to the incident site to conduct an investigation. The incident was reviewed with the business owner, county coroner, medical examiner, sheriff, and the OSHA compliance officer. Photographs of the incident site were obtained.

The victim was a self-employed carpenter who worked on a part-time basis. He had one regular employee, but in this instance, had also enlisted the help of two teenage neighborhood boys. There were no written safety rules, safety program, or safety policy.

## INVESTIGATION

A 66-year-old male carpenter (victim) had been hired by a local businessman to perform carpentry work on the structure housing the business and on the businessman's residence. He had built the structure that housed the business 9 years prior to the incident. The first day at the worksite the victim hung storm doors on both the business structure and the house. During the next 2 days, the carpenter, his co-worker, and two teenage neighborhood boys built the outer frame of the 14-foot-long by 16-foot wide car port addition, using 2 by 6 boards. On one end, the frame was attached to the existing carport with nails. The opposite end was supported by a single 2 by 4 board nailed to the inside of each corner, acting as leg supports. The 2 by 6 joists were then nailed to the inside of the frame on 18-inch centers (the centers of the 2-inch-thick joists were 18 inches apart). The plywood roof sheathing was then nailed to the top of the joists. Although 6-inch-square wooden beams that were to be used as final supports for the addition were present at the site, they were not installed at this time. These beams were to be anchored in the ground and the addition would be set on top of the beams. The carpenter told the business owner that he would install the beams after the roof felt had been applied.

On the day of the incident the workers were nailing roof felt to the top of the sheathing. The victim was standing on the lower corner of the addition roof farthest from the existing car port. Without warning, the 2 by 4 legs failed, causing the addition to collapse and pull away from the carport (Figure). The victim fell backward 8 feet off the roof and struck his head on the ground, breaking his neck. A telephone call to the emergency medical service (EMS) was made from the business. Upon arrival, EMS personnel initiated cardiopulmonary resuscitation (CPR) and transported the victim to the hospital where he was pronounced dead by the attending physician. None of the other three co-workers required medical attention.

## CAUSE OF DEATH

The medical examiner listed fracture of the third cervical vertebrae (broken neck) as the cause of death.

## RECOMMENDATIONS/DISCUSSION

**Recommendation #1:** Employers should conduct a job hazard analysis prior to the start of work on a job to identify and control any potential hazards that might arise during the job.

**Discussion:** Employers should conduct a job hazard analysis by a competent, qualified person prior to the start of work on a job to identify and control any potential hazards that might arise during the job. In this instance, a job hazard analysis would have identified the worker exposure to the hazard that existed due to the temporary 2 by 4 supports. The permanent supports would then have been installed prior to the start of work on the roof.

**Recommendation #2:** Employers should ensure that elevated work surfaces are adequately supported before workers climb onto, and work from, those surfaces.

**Discussion:** Prior to the start of work on an elevated work surface, employers should ensure that the surface is adequately supported. The work surface should have support sufficient to withstand the stationary and moving weights to which the overhead surfaces will be subjected. In this instance, the 2 by 4 legs and the two nailed sides were inadequate. The 6-inch-

square beams that were to be used as final supports were at the site and should have been installed around the perimeter of the addition before workers climbed onto the roof of the addition.

Recommendation #3: Employers should provide fall protection equipment and ensure its use where workers are exposed to a fall hazard.

Discussion: Existing OSHA regulation 29 CFR 1926.28 (a) states, "The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this part indicates the need for using such equipment to reduce the hazards to the employees." In this instance, the workers were not provided with fall protection equipment.

## REFERENCES

29 CFR 1926.28 (a). Code of Federal Regulations, Washington, DC: U.S. Government Printing Office, Office of the Federal Register

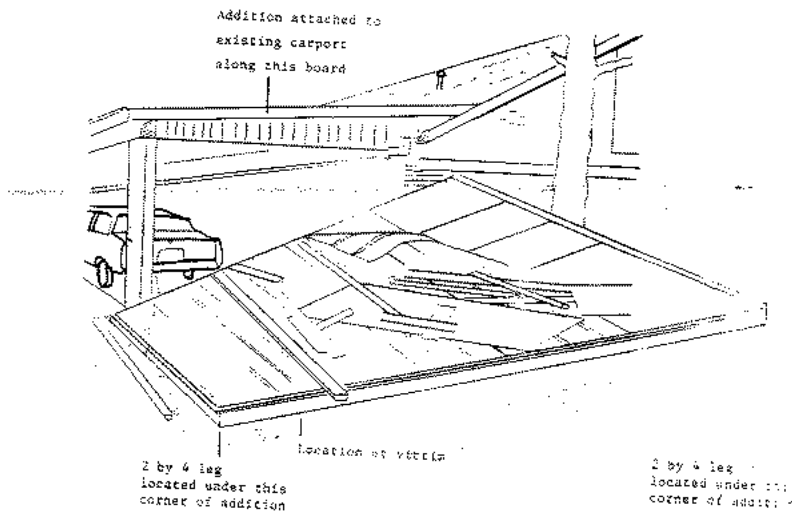


Figure.

[Return to In-house FACE reports](#)

Last Reviewed: November 18, 2015

How helpful was this page?



Not helpful

Very helpful