

## Tree Feller Killed by a Piece of Wood From a Falling Tree - Pennsylvania

### SUMMARY

A 25-year-old male tree feller (the victim) was felling trees at a logging site when he was struck and killed by a piece of wood from a falling tree. The victim felled a large cherry tree on a mountainside with a slope of approximately 10 percent. When the large cherry tree was cut through and fell toward the ground, one of its limbs contacted the upper section of a smaller cherry tree, and pulled the tree over as it fell. As the smaller tree was being forced over it broke in two places; once about 8 feet above ground, and again about 32 feet above ground. As the smaller tree broke at the uppermost location, a piece of wood 3~ feet long, weighing about 10-12 pounds, split away from the trunk. The piece of wood catapulted toward the ground, fatally striking the victim on the head. The victim was wearing approved head protection at the time of the incident, but the force of the blow severed the spinal cord in the victim's neck. NIOSH investigators concluded that, in order to prevent future similar occurrences, employers should:

- ensure that tree fellers properly evaluate the area around timber to be felled so that potential hazards can be identified and avoided
- develop, implement, and enforce a written safety program which includes worker training in recognizing and avoiding hazards such as trees and protruding limbs in proximity to other trees, and in safe work procedures for the tasks to be conducted
- ensure that employees are trained in first aid and cardiopulmonary resuscitation (CPR)
- designate a competent person to conduct regular safety inspections.

### INTRODUCTION

On April 2, 1996, a 25-year-old male tree feller (the victim) was struck and killed by a piece of wood from a falling tree. The tree had been struck by another tree, causing a piece of wood to break off near the top of the tree and fall to the ground, striking the victim. On April 4, 1996, a newspaper article regarding the death of the tree feller was brought to the attention of the staff in the Trauma Investigations Section of the Division of Safety Research (DSR). On April 4, 1996, a safety specialist contacted the victim's employer and offered technical assistance. On April 8, 1996, a DSR safety specialist investigated this incident. The investigator reviewed the incident with the co-owner of the company and his wife, and the county coroner. Photographs of the incident site were taken, and the county coroner's report was requested during the investigation. The employer in this incident was a small logging company that had been in operation under the current ownership for about 10 years. The employer had 10 employees, including three co-owners, two tree fellers, and five sawmill workers. The employer did not have a written safety program, but safety information was presented in the form of videos, and on-the-job training was provided. One of the 10 employees had first aid and CPR training. The victim had been employed by the company for 3 years. This incident was the first fatality the company had experienced.

## INVESTIGATION

The company had purchased the timber rights to a 20-acre tract of mountainous land and was in the process of selectively cutting a variety of hardwood trees for saw timber. The company had two loggers at the site: one tree feller (the victim) and one of the co-owners who was operating the skidder to transport logs to the landing. The victim had been assigned to fell and top trees on a mountainside which had a slope of approximately 10 percent. Although the co-owner was within 50 feet of the victim at the time of the incident, he did not witness the incident, therefore physical and circumstantial evidence suggests the following sequence of events. The victim and co-owner arrived at the incident site about 8:15 a.m. on the day of the incident. The victim proceeded to fell trees as the co-owner attached chokers to logs to be skidded to the landing. At about 8:30 a.m., the victim had felled six large trees and proceeded to the next tree to be felled. He first cleared an escape path, by cutting small brush with a chain saw, to a snag which was 13 feet west of the large cherry tree. Next the victim felled the large cherry tree which was 26 inches in diameter and about 70 feet tall, and then retreated to the north side of the snag. The tree fell downhill (easterly) in the direction he had intended it to fall. A small cherry tree, which was 9 inches in diameter and about 40 feet tall, was located 28 feet away from, and on a 45 degree angle south of the large cherry tree.

As the large cherry tree was falling, one of its large limbs protruding toward the small cherry tree contacted the small cherry tree about 35-40 feet above ground. As the larger tree fell to the ground it bent over and eventually broke the smaller tree in two places. One break occurred about 8 feet above ground, and the second break occurred about 24 feet above the first break at a point where a knot in the trunk was present. As the smaller tree broke at the uppermost location in the area of the knot, a piece of wood 3 feet long, weighing about 10-12 pounds, split away from the trunk. The piece of wood was catapulted toward the ground, fatally striking the victim on the head (Figure). The co-owner, who was operating a skidder, looked in the direction of the victim and saw him fall to the ground. Without knowing what had occurred, the co-owner jumped from the skidder and ran to the victim. He saw blood and other fluids running from the victim's nose. After calling the victim's name and shaking him, and getting no response, the co-owner ran to a pickup truck about 150 yards away and called 911. The emergency medical service arrived in about 5 minutes, provided basic life support, and transported the victim to the emergency room at a local hospital. The victim was pronounced dead by the attending physician at 9:55 a.m.

## CAUSE OF DEATH

The deputy coroner reported the cause of death as blunt force trauma to the head.

## RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should ensure that tree fellers properly evaluate the area around timber to be felled so that potential hazards can be identified and avoided.

Discussion: In the course of regular operations, a daily general inspection should be conducted of the area to be worked, and potential hazards such as snow and ice accumulation, the wind, the

lean of the tree, dead limbs, and the location of other trees should be evaluated by the feller and precautions taken to avoid hazards. In this case a protruding large limb from the larger cherry tree was extending in the direction of a smaller cherry tree. Upon felling the larger tree, the protruding limb contacted the smaller tree, causing it to break in two places and catapulting a piece of the smaller tree's trunk toward the victim, resulting in his death. If the cutting site had been evaluated and the location of the large cherry tree in proximity to the smaller tree taken into consideration, the victim could have taken precautions by moving farther away from the felled tree to a safe distance and possibly preventing the incident.

**Recommendation #2:** Employers should develop, implement, and enforce a written safety program which includes worker training in recognizing and avoiding hazards such as trees and protruding limbs in proximity to other trees, and in safe work procedures for the tasks to be conducted.

**Discussion:** In this incident, the victim felled a tree which struck and broke a smaller tree into several pieces. One of the pieces was catapulted toward the ground, striking the victim and fatally injuring him. Employers should evaluate tasks performed by workers; identify all potential hazards; and then develop, implement, and enforce a written safety program addressing these issues. The safety program should include, but not be limited to, recognizing, avoiding, and reporting hazards.

**Recommendation #3:** Employers should ensure that employees are trained in first aid and cardiopulmonary resuscitation (CPR).

**Discussion:** Although first aid and/or CPR may not have affected the outcome of this particular case, the lack of pertinent training may result in detrimental consequences in the event of any future job-related injuries. First aid and CPR training should be conducted using the conventional methods of training such as lecture, demonstration, practical exercise and examination (both written and practical). The length of training should be sufficient to assure that trainees understand the concepts of first aid and CPR and can demonstrate their ability to perform the various procedures.

**Recommendation #4:** Employers should designate a competent person to conduct regular safety inspections.

**Discussion:** Conducting regular safety inspections of all logging tasks (among other safety-related responsibilities) by qualified individuals will help ensure that established company safety procedures are being followed. Additionally, scheduled and unscheduled safety inspections of tree feller worksites clearly demonstrate that the employer is committed to the safety program and to the prevention of occupational injury.