Date: 2 October 1995

**Subject: Logger Killed by Falling Snag**

## SUMMARY

A 22-year-old logger was killed after being struck on the head by a falling snag (dead standing tree). The victim was working with one co-worker, who was selectively cutting trees which were approximately 22 inches in diameter. Standing approximately three feet from the tree being cut, the victim was not wearing a hard hat. The cut tree broke a snag about 35 feet up, causing the snag to fall and strike the victim on the head. The co-worker (tree feller) shouted to the victim, but he was unable to move away in time to avoid being hit. FACE 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 appropriate control measures implemented.
- Develop, implement and enforce a written safety program which includes worker training in recognizing, avoiding and abating hazards.
- Provide and enforce the use of personal protective equipment.
- Ensure that emergency messages can be transmitted and received quickly.
- Designate a qualified person to conduct regular safety inspections.

## INTRODUCTION

On August 30, 1995, a 22-year-old logger was fatally struck on the back of the head by a falling snag. FACE investigators were notified on September 1, and an investigation was immediately initiated. On September 14, 1995, two FACE investigators traveled to the scene to conduct an on-site investigation. The employer/witness was interviewed, copies of the coroner's and the state police officer's reports were obtained and reviewed, and photographs and measurements of the scene were taken. The OSHA compliance officer who investigated the incident was later interviewed by telephone.

## INVESTIGATION

The employer in this incident was a family-owned logging company that employed five people: Two tree fellers, one bulldozer operator, and two cutter-loaders. All of the employees, except the victim, were certified loggers. The victim had worked for the company for one month; he had been working in the loading area, but had recently decided that he preferred to fell trees. On the day of the incident, he was assisting and being trained by an experienced feller, who was cutting trees on the mountainside. The company did not provide ear plugs, hard hats, or gloves. First aid kits were affixed to each piece of equipment. The company had no previous fatalities.

The employer had contracted with landowners to selectively cut timber on a tract of land in a mountainous region. Dense hardwoods, including white oak, red oak, and white and yellow

poplar covered the area, which had last been selectively logged about six to eight years earlier. A web of logging roads had been created on the mountainside with a bulldozer, enabling the loggers to fell trees at one level and haul them out before moving on to the next higher level.

Standard operating procedure for this company was to have two workers felling trees on the mountainside and two loaders below, in the loading area, cutting the timber into particular lengths (17 feet 6 inches whenever possible) and loading it onto a truck. The fifth worker was the bulldozer operator, who moved between the two work areas, delivering the logs from the fellers to the cutter/loaders. After loading, the timber would be delivered to a sawmill, where it would be made into veneers and pillars. The company worked on a percentage basis, dividing proceeds with the landowners.

On the day of the incident work had commenced as usual at 7:00 am. Three trees had been cut just prior to cutting the tree involved in the incident, which was a poplar approximately 22 inches in diameter. Attached to this poplar was another tree, approximately 10 inches in diameter, which was dead (the "snag"). The victim had just dug some ginseng root and put it into his pocket, and was standing about three feet away from the tree being cut. At this point on the mountain the slope measured 28 degrees. As the cut was completed, the larger tree brushed against the snag, causing it to break off and fall, striking the victim on the head and coming to rest on his feet. The feller, who was looking up, saw that the snag was about to fall and yelled to the victim, who was unable to move away in time to avoid being hit. The portion of the snag which fell was about 30 feet long, and it fell from approximately 35 feet. The victim was not wearing any type of head protection or personal protective equipment at the time of the incident. He was knocked unconscious, but immediately following the incident had a pulse and was breathing.

The bulldozer operator had just left the felling site, hauling the three previously felled trees down to the loading area using choker lines attached to the bulldozer. The feller attempted to reach him by radio, but due to the noise of the bulldozer's engine, the driver could not hear the radio. The feller then ran down the mountain, 1.2 miles, to the loading area, where he told fellow workers what had happened. One of them went in a truck another mile to the home of the landowners, where a call was placed at 8:12 am to emergency medical service (EMS) personnel.

EMS workers were taken up to the scene in the feller's pick-up truck, but found the victim unresponsive; no vital signs could be detected. The coroner was called, and he in turn called the state police. After waiting for the bulldozer to clear a passable road, they investigated and photographed the scene. The victim was pronounced dead at 10:10 am and the time of death was estimated by the coroner to be approximately 8:20 am.

**CAUSE OF DEATH**

The coroner determined the cause of death to be skull fracture. No autopsy was performed.

**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 appropriate control measures implemented.

**Discussion:** Tree fellers, particularly new employees, should be provided with training in safe work practices and instructed to evaluate their work area prior to beginning work. Such training should include factors such as the lean of the tree to be cut, wind conditions, and the locations of other trees in the immediate work area, as well as the need to identify potential hazards such as dead, broken or rotted limbs or trees (snags). Once identified, any dead, broken or rotted limbs should be felled or otherwise removed before commencing logging.

**Recommendation #2:** Employers should develop, implement and enforce a written safety program which includes worker training in recognizing, avoiding and abating hazards.

**Discussion:** Employers should evaluate tasks performed by workers, identify all potential hazards, and then develop, implement and enforce written safe work procedures addressing these issues. the safety program should include worker training in recognizing, avoiding and abating hazards.

**Recommendation #3:** Employers should provide and enforce the use of personal protective equipment (PPE).

**Discussion:** Although, due to the size of the falling snag in this incident, it is uncertain whether the use of a protective helmet would have lessened the severity of the injury, the use of such PPE should be included in every safety program. Employers should provide workers with the required PPE, instruct workers in its proper use, and require its use.

**Recommendation #4:** Employers should ensure that emergency messages can be transmitted and received quickly.

**Discussion:** In this case, employees carried two-way radios. However, due to the noise of equipment (bulldozer, etc.), the tree feller was unable to make himself heard over the radio. A secondary system, such as a blinking lights, should be installed so that employees (e.g., equipment operators) can be alerted to turn off noisy motors in order to hear emergency messages.

**Recommendation #5:** Employers should designate a qualified person to conduct regular safety inspections.

**Discussion:** To assure that workers, particularly new employees, are performing their assigned tasks in the safest possible manner, scheduled and unscheduled safety inspections should be conducted at job sites. Any potential hazards or improper work practices which are identified should be immediately corrected.