The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research

Tree Feller Killed by Falling Tree Limb–West Virginia

FACE 9305

SUMMARY

A 58-year-old male tree feller (the victim) was felling trees at a logging site in a rural part of the state when he was struck by a tree limb. The victim felled a large white oak tree on a mountainside with a slope of approximately 40 percent. A smaller beech tree was located about 20 feet downhill from the oak, and directly in line with the path of the falling tree. The oak tree struck the side of the beech tree and slid down its side, striking a large limb that was approximately 9 inches in diameter and 40 feet in length. The limb, which was 35 feet above ground, extended uphill in the direction of the victim. It broke off upon impact and fell toward the ground, fatally striking the victim on the head. The victim was not wearing any type of head protection at the time of the incident. 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 as specified in 29 CFR 1910.266 for pulpwood logging**
- **develop, implement, and enforce a written safety program which includes worker training in recognizing and avoiding hazards such as overhanging limbs**
- **provide and enforce the use of personal protective equipment**
- **designate a competent person to conduct regular safety inspections.**

INTRODUCTION

On November 17, 1992, a 58-year-old male tree feller (the vic- tim) was struck and killed by a tree limb. The limb had been struck and broken off by a tree that he had just felled. On November 18, 1992, officials of the West Virginia Sheriff's Office in the county where this incident occurred were contacted by the Division of Safety Research (DSR) concerning this fatality, and offered technical assistance. On November 18, 1992, a DSR safety specialist conducted an investigation of this incident. The investigator reviewed the incident with the county sheriff, medical examiner, and emergency medical service. Photographs of the incident site and the medical examiner's report were requested during the investigation.

The employer in this incident was a small trucking and logging company that had been in operation for about 20 years. The employer had four logging employees, all of whom were fellers. The employer did not have a written safety policy, safety pro- gram, or established safe work procedures at the time of the incident. The victim had been employed by the company for 15 years, and had approximately 25 years of logging experience, most of which was as a feller. This incident was the first fatality the company had experienced.

INVESTIGATION

The company had been contracted to selectively cut a variety of hardwood trees for sawtimber. The company had four loggers at the site, all of whom were tree fellers. The company owner and his son operated the skidding (bulldozer) and transport equipment, and had been working at the logging site for 3 weeks when the incident occurred. The victim and the other three fellers had been assigned to separate zones (wooded areas allotted to each feller) to fell trees on a mountainside which had a slope of approximately 40 percent. Although there were no eyewitnesses to the incident, evidence suggests the following sequence of events.

The victim began cutting and felling trees at about 7 a.m. on the day of the incident. He was cutting trees (various hardwood species) with a 22-inch-bar chain saw that was approximately 1 year old and equipped with a chain brake. At about 12:35 p.m., the victim felled a large white oak that was approximately 100 feet tall and 40 inches in diameter at the base. The oak fell downhill toward a beech tree that was about 80 feet tall and 20 feet from the base of the oak tree. When the oak struck the beech, it slid down the side of the beech tree and broke off a large limb (9 inches in diameter, 40 feet in length, and located about 35 feet from the ground)(Figure). The broken limb, which extended uphill in the direction of the victim, fell toward the ground, striking the victim on the head and causing his instan- taneous death, according to the medical examiner's report.

The company owner's son, who was operating a bulldozer in the area, noticed the victim lying on the ground, and went to call for help after determining that the victim was seriously in- jured. The emergency medical service arrived about 50 minutes after the incident occurred and transported the victim to an ambulatory center about 10 miles from the worksite, where the victim was pronounced dead on arrival.

CAUSE OF DEATH

The medical examiner listed the cause of death as open skull fracture.

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: In the course of regular operations, a daily general inspection should be conducted of the area to be worked, and potential hazards such as logs, rootwads, rocks, snags, spring poles, lodged trees, overhanging limbs, etc., should be identified. Appropriate safety measures and escape plans should be developed to avoid such hazards.

[Note: Currently, OSHA Standard 1910.266 applies to pulpwood logging but does not apply to the logging of sawtimber-sized trees, which were involved in this incident. OSHA is currently revising their logging regulations to include all types of logging operations. Although not enforceable, sections of 1910.266 of the pulpwood standard, particularly relating to safe work practices, do apply in this case.]

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

Discussion: In this incident, the victim felled a tree which struck and broke off a limb from an adjacent tree, which in turn struck and fatally injured him. 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 reporting hazards.

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

Discussion: 29 CFR 1910.266(c)(iii) states that “Safety helmets of approved design in accordance with American National Standard for Safety Requirements for Industrial Head Protection Z89.1-1969 shall be provided.” It is uncertain whether the use of personal protective equipment (i.e., protective helmet) may have lessened the severity of the injury in this incident. However, the use of such protective equipment should be included in every safety program.

Recommendation #4: Employers should designate a competent per- son to conduct regular safety inspections.

Discussion: Conducting regular safety inspections of all logging tasks (among other safety-related responsibilities) by a competent person 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.

REFERENCES

Office of the Federal Register: Code of Federal Regulations, Labor 29 Part 1910.266, pp. 677, 680. July 1, 1989.

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