The National Institute for Occupational Safety and Health (NIOSH)

Tree Feller Crushed by Falling Tree–Virginia

FACE 9238

SUMMARY

A 45-year-old male tree feller (the victim) was killed when a falling tree struck him from behind. A crew of five men were clear-cutting a tract of hardwood timber for a lumber yard. Four of the men, including the victim, were limbing fallen trees. The fifth man was operating a feller/breacher. The feller/breacher was a diesel-powered machine equipped with hydraulically powered jaws to grasp a tree, and a 30-inch chain saw that was rotated hydraulically through a tree to fell it. The jaws were then rotated to lower and drop the felled tree at a desired location. As the feller/breacher operator began to make a cut on a 26-inch diameter hollow tree, the chain flew off the bar. The operator backed the machine away and, with the help of the other workers, put the chain back on the bar. The operator then pulled the machine back up to the tree and attempted to make a cut on the opposite side of the tree. The chain saw had cut into the tree approximately 6 inches when the chain flew off a second time. As the other workers were putting the chain back on the bar, the victim walked 45 feet out in front of the partially cut tree and began to limb a previously felled tree. Although the day was not particularly windy, a gust of wind arose and the workers, hearing a loud snap, looked up to see the tree rotate 180 degrees on its stump and fall toward the ground. As they watched the tree fall, the workers saw the victim's blue helmet through the branches. The victim, unable to hear their warnings because he was operating his chain saw, was crushed by the falling tree. NIOSH investigators determined that, to prevent future similar occurrences, employers should:

- **develop, implement and enforce a written safety program which includes safe work procedures for all tasks performed by workers, including felling and limbing trees**
- **provide worker training in recognizing and avoiding hazards, including environmental and weather conditions**
- **designate a qualified person to conduct periodic safety inspections.**

INTRODUCTION

On August 25, 1992, a 45-year-old male tree feller (the victim) died after being struck by a falling tree. On September 14, 1992, officials of the Virginia Occupational Safety and Health Administration (VAOSHA) notified the Division of Safety Research (DSR) of this fatality, and requested technical assistance. On September 23, 1992, a DSR safety specialist traveled to the incident site to conduct an investigation. The incident was reviewed with company representatives, the VAOSHA compliance officer, and the county sheriff and coroner. Photographs of the incident site taken immediately following the incident were obtained during the investigation.

The employer in this incident was a logging company that specialized in hardwood timber logging. The company had been in operation for 25 years and employed 6 loggers. The company had no written safety program, safety policy or safe work procedures. The men were verbally instructed by the company owner in safe work procedures and were provided with

uniforms and personal protective equipment (PPE) such as helmets and face guards. One of the standard operating procedures prohibited work being performed forward of the felling line, the area in front of the feller/breacher and trees being felled. The victim had worked for the company for 19 years. This was the company's first fatality.

INVESTIGATION

The employer had been contracted by a local lumber yard to clear a tract of hardwood timber. Four fellers, including the victim, and a feller/breacher operator were performing work at the site. The feller/breacher was a diesel-powered machine equipped with hydraulically powered jaws to grasp a tree, and a 30-inch chain saw that was rotated hydraulically through a tree to fell it. The jaws were then rotated to lower and drop a tree at a desired location. Once a tree was on the ground and the feller/breacher advanced, the other crew members would move in behind the machine and limb the tree.

On the morning of the incident, the four fellers began limbing trees that had been felled the previous day. At 9 a.m. the feller/breacher operator positioned the machine to fell a 26-inch-diameter hollow tree. Shortly after the chain saw began its cut, the chain flew off the bar. Although the feller/ breacher and chain tension were properly maintained, the extremely hard callous and scar material that had formed inside the tree to isolate the interior rot from the remaining live material caused the chain to fly off the bar. The machine operator released the hydraulic jaws and backed the machine away from the tree. After the feller/breacher operator and his crew replaced the chain on the bar, he repositioned the machine and began a second cut on the opposite side of the tree. Again, shortly after the cut had begun, the chain flew off the bar. The operator backed the machine away from the tree a second time and began to replace the chain. While the four men were working on the chain, the fourth feller (the victim) walked 45 feet to the front of the partially cut tree and began to limb a felled tree, although there were trees behind the felling line that had not been limbed.

As the workers were placing the chain on the bar, they felt a gust of wind, although the day was not particularly or constantly windy, and heard the partially cut hollow tree snap. As the tree rotated 180 degrees on its stump and began to fall, the workers noticed the victim's blue work helmet through the branches. The co-workers shouted warnings, but the victim did not hear them because he was operating his chain saw. The falling tree struck the victim and crushed him.

CAUSE OF DEATH

The coroner listed the cause of death as a fractured skull.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should develop, implement and enforce a written safety program which includes written safe work procedures for all tasks performed by workers, including felling and limbing trees.

Discussion: All tasks performed by workers should be evaluated to identify the hazards associated with each task. Once these hazards are identified, employers should then develop, implement, and enforce a written safety program addressing these issues as required by OSHA standard 29 CFR 1926.21(b)(2). Additionally, procedures should be developed that would direct worker activity during machine downtime. In this incident, the victim deviated from the company's standard operating procedures, which were communicated verbally, by walking in front of the cutting line to limb a tree while his co-workers replaced the chain on the bar. Workers should continually be reminded that standard operating procedures are developed to enhance their safety and should be followed at all times.

Recommendation #2: Employers should provide worker training in recognizing and avoiding hazards, including environmental and weather conditions.

Discussion: In this incident, the victim apparently did not recognize the potential hazard of walking in front of the tree line and was fatally injured. Once all potential hazards, including environmental and weather conditions such as wind and wet ground are identified, employers should provide worker training in the recognition and avoidance of these hazards.

Recommendation #3: Employers should designate a qualified person to conduct periodic safety inspections.

Discussion: To ensure 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. Such inspections demonstrate to workers that their employer is committed to the prevention of occupational injury.

REFERENCES

Office of the Federal Register: Code of Federal Regulations, Labor 29 Part 1926.21, p. 20. July 1, 1990.

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