

TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (FACE) Program

SUBJECT: A tree trimmer dies when pulled into in a brush chipper.

SUMMARY
California FACE Report #00CA010

A 33 year-old male tree trimmer died when pulled into a brush chipper at a job site. The decedent was chipping small and medium size tree limbs being piled by other workers around the perimeter of a job site. The decedent was working alone at the brush chipper. Co-workers said they heard a strange noise come from the brush chipper. The supervisor on the job went to investigate, discovered the decedent's remains, and immediately called 911. Although the incident was unwitnessed, police concluded that the victim either lost his balance while feeding material into the chipper or was leaning across the feed table pushing trimmings into the feed chute when his gloves were caught by the feed rollers and he was pulled through the chipper blades.

The CA/FACE investigator determined that, in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP) should:

- Ensure that all employees use a long limb, branch, or a push stick to feed small trimmings into the brush chippers.
- Ensure that all employees stand to the side of the feed table when feeding trimmings into the brush chipper.
- Designate another employee as a safety watch when trimmings are being fed into the brush chipper.

INTRODUCTION

On July 15, 2000, at approximately 1:30 p.m., a 33-year-old male tree trimmer died when drawn entirely into a brush chipper. The CA/FACE investigator learned of this incident on July 20, 2000, through the local legal office of the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA). On October 19, 2000, the CA/FACE investigator traveled to the decedent's place of employment and interviewed the company owner. The CA/FACE investigator also reviewed the local Cal/OSHA district office file on this incident.

The employer of the decedent was a state licensed and fully insured company that offered consultation services and maintenance programs in tree services. The owner of the company was a certified arborist. The company had on average 21 employees. The decedent had worked for

this company for eight years. There were approximately 9 employees working at the site at the time of the incident.

The employer of the decedent had a safety program and a written Injury and Illness Prevention Program (IIPP) with all the required elements including written job hazard evaluations, and documented training programs for employees who operated the wood chippers. There were written task specific safe work procedures available for employees and operator manuals for the machines. There was an employee / management safety committee and safety meetings were held regularly on a by-weekly basis.

Training was given on an as-needed basis. Training was accomplished by on-the-job-training (OJT), classroom instruction with written test, and seminars by the National Arborist Association. This training was documented.

INVESTIGATION

The site of the incident was a side and front parking lot of an office complex. The property owner requested the trees around the perimeter of the parking lot (approximately two acres) be trimmed on a Saturday. The owner of the company scheduled the work crews several months in advance to perform this annual maintenance of eucalyptus and pine trees calculating approximately one half days work. On the day of the incident, nine employees reported to the work location at approximately 11:30 a.m. and started the job by holding a tailgate safety meeting. Crews of two were assigned to cut and stack the tree limbs and brush and one employee would follow with a 2-½ ton enclosed dump truck and attached disk-type brush chipper. The decedent's duties were to drive the large diesel truck to the stacked limbs and brush and feed them into the brush chipper that was attached to the rear of the truck with its chute aimed into the bed of the truck through an open section in the tailgate. The feed table on the chipper measured 5 feet long, 6 ½ feet wide, and was 1-½ feet above ground level.

As the brush and limbs were fed into the chipper it made a distinct sound that was recognizable to those familiar with the operation. According to co-workers, they could hear the noise of the brush being fed into the chipper from their work location, approximately 80 to 100 feet from the decedent. Approximately two hours into the job, the co-workers stated they heard a strange noise coming from the chipper, similar to an overloaded condition. The supervisor on the job went to investigate. As the supervisor came about to the rear of the truck, he quickly realized what had happened and immediately called 911. There were no witnesses to the actual incident. The police concluded that the 5-foot, 8-inch decedent either lost his balance while feeding the trimmings into the chipper and was pulled into the chipper blades, or was leaning across the feed table attempting to push the trimmings into the chipper when his gloves caught on the feeder rollers and was pulled into the chipper blades.

CAUSE OF DEATH

The cause of death, according to the autopsy report, was total body fragmentation.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure that all employees use a long limb, branch, or a push stick to feed small trimmings into the brush chippers.

Discussion: Because the incident was unwitnessed, the exact manner in which the victim was caught and pulled through the chipper blades is unknown. However, the material that the decedent was chipping consisted of small and medium size tree limbs. Studies of other cases indicate that workers can become caught when attempting to feed small pieces of limbs and

debris into a chipper. The chipper that was being used by the decedent was equipped with feed rollers that feed the material into the chipper blades. During normal operation, chipped material and small pieces of limbs and brush tend to accumulate on the feed table. When this happens, a long limb, branch or a wooden push stick should be used to push the material into the machine, while the worker remains at the side of the feed chute a safe distance away from the feed rollers. The material that the decedent was picking up to be chipped consisted of small and medium size tree limbs. None of this material on the job site would have been suitable for using as a push stick device. There also was no evidence that a push stick device was being used to feed the small and medium size limbs into the chipper. Had a shop-made push stick or a large tree limb been used, this incident might have been prevented.

Recommendation #2: Ensure that all employees stand to the side of the feed table when feeding trimmings into the brush chipper.

Discussion: The feed table provides an important measure of safety by increasing the distance between the feed rollers and the operator. Should a snag occur, the brush chipper is equipped with a quick stop and reversing feed control bar located across the top and down each side of the feed chute. The operator could easily activate this safety device while standing at the side of the feed table whenever the need arises, making it very unlikely that an operator could be pulled onto the chipper blades from this position. However, if standing directly in front of the feed table, the operator is out of reach of this safety device. Also, if an operator should place any part of his/her body on the feed table the risk of getting snagged or dragged into the chipper blades is quite high and a worker caught by the hands could not activate the quick stop device.

Recommendation #3: Designate another employee as a safety watch when trimmings are being fed into the brush chipper.

Discussion: A strong safety plan will have procedures in place that explain how to perform high-risk task as safely as possible. The fact still remains that when dealing with the human element, verification must also be part of the safety plan to reduce the false sense of security that usually develops when someone repeatedly performs a hazardous function without incident. A safety watch is mandated in many other high-risk occupations to help prevent injuries. A designated safety watch stationed near the chipper may have been able to intervene verbally if the decedent had been observed feeding material from a hazardous position or may have been able to activate the quick stop device before the decedent made contact with the chipper blades.

References:

California Code of Regulations, Vol. 9, Title 8, Sections 3203, 3421, 3424(c), 3428.

Operator's Manual, 1800 Brush Chipper, Vermeer, 1996

American National Standards Institute ANSI Z133.1-1994

DHHS NIOSH PUBLICATION NO. 99-145 Injury Associated with Working Near or Operating Wood Chippers, August 1999

ADMINISTRATIVE REPORT, CDC/NIOSH/DSR, FACE 97-06, Virginia; FACE 98-13, North Carolina

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Health Services, in cooperation with the California Public Health Institute, and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations on work-related fatalities. The goal of this program, known as the California Fatality Assessment and Control Evaluation (CA/FACE), is to prevent fatal work injuries in the future. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

NIOSH funded state-based FACE programs include: Alaska, California, Iowa, Kentucky, Maryland, Massachusetts, Maryland, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Texas, Washington, West Virginia, and Wisconsin.

Additional information regarding the CA/FACE program is available from:

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