Skull fractured in skid loader incident in Wyoming

SUMMARY

A 26 year old male sawmill operator died from injuries suffered when he caught his head in the unprotected cab of a reconditioned skid loader while working in a sawmill operation. The victim had been operating the skid loader for approximately 15 minutes transporting logs from a stockpile area to the mill bin for cutting. He was working alone and the machine was not equipped with the wire mesh usually attached to the cab to protect operators from moving parts of the equipment. The victim, apparently stuck his head outside the cab area as the loader arms were moving, and his head was pinched between the moving arms and the side of the cab.

He was discovered by his employer, who sent a co-worker into town to get help. The co-worker tried various places in the town before locating the proper authority to dispatch the ambulance. By the time first responders arrived, the victim had no pulse, and he was declared dead at the scene.

Employers may be able to minimize the potential for occurrence of this type of incident through the following precautions:

- **Mill workers should be trained in the handling of all hazardous machines and equipment available to them.**
- **Emergency procedures should be established against the event of an injury producing circumstance.**
- **Access to emergency services should be provided on site.**
- **Skid loaders should be fully enclosed with open mesh or plexiglas materials to give maximum protection to the operator.**

INTRODUCTION

On a Tuesday afternoon, March 1, 1994, a one-month employee of a sawmill company was operating a skid loader to sort, size, and transport logs from a stockpile area to the mill bin for cutting. He was operating a reconditioned skid loader that had earlier been damaged in a lumber yard fire. The owner of the sawmill had bought the skid loader and rebuilt it. At the time of the operation, the seatbelt was missing (having previously been burned off and not replaced) and the cab area was not protected by the original wire mesh screen or any other form of protective device. There was an operations manual from a similar skid loader that was available to the operator, listing protective devices as optional.

The owner, who was working at the sawmill, saw that the log bin was empty and closed down the sawing operation to see if the skid loader operator was having trouble bringing logs to the mill bin. The operator had been gone for approximately 15 minutes, which was well within the expected time for sorting, sizing, and transporting enough logs to refill the bin. The owner could not directly see the

stockpile area, as buildings and other stockpiles were in the line of sight, but the distance between the work areas was only about 200 yards.

The employer saw the skid loader in a stationary position with the engine running, and could see the operator slumped over inside the cab. On closer observation, he saw that there was extensive bleeding from the victim's head. He ran back to the mill to seek help from his other employees, and sent one of the employees into town to get help.

INVESTIGATION

Through a reciprocal notification agreement with the Director of the Occupational Safety and Health Division of the Department of Employment, the WY- Wyoming FACE Project was notified of the incident on March 2, 1994. Reports were requested from local law enforcement and coroner's offices and an investigation was begun.

The victim had only worked at the sawmill for a month, but was well-known to the owner as a former resident of the community. He had previously worked in the area in a logging operation and had both experience and college instruction in the operation of trucks and machines, and claimed to have done construction work nearby, including the operation of similar equipment. On his hiring, the victim was provided on-the-job training which included operation of the equipment in use at the time of the incident.

His employer and co-workers all considered him proficient in the operation of the skid loader, and referred to him as a hard and careful worker who might occasionally lose his temper. There was no formal safety training program available through the company, nor were there any written safety procedures outside of those in the operations manual of a skid loader similar to the one in use.

There was no on-site telephone or other method to communicate with emergency services, and no one at the mill who was proficient or trained in first aid or emergency medical service, so one of the employees was sent into town to contact the ambulance service. He went first to the town hall where he thought the ambulance would be located. Not finding help there, he went next to a garage where he was able to contact the garage owner who reported the incident to emergency services. The ambulance was dispatched and arrived at the sawmill within seven minutes of notification.

On arrival, first responders checked for a pulse in the carotid and the radial for both arms and could find none. They noted that the victim's pupils were fixed and dilated and that there was no indication of breathing. Based on the amount of blood loss, the apparent time factor, and the nature of the visible injury, they determined, that they could do nothing to assist the victim. A deputy coroner, who also serves as a deputy sheriff, determined the cause of death to be from massive head injury.

Investigating officers saw that the victim was in a seated position inside the cab with his hand on the right control handle. There was a large cut over his right eye that had penetrated the skull. A large amount of blood was seen on the side of the skid loader and on the ground underneath it. The machine had made an approximate 180° turn to the left, pivoting around the left front tire, and blood following the tire tracks that appeared to have come from the wound on the victim's forehead.

At the time of the incident, the victim was wearing no personal protective equipment. He was not even wearing gloves. There was no wire mesh or plexiglas cab protection, and seatbelts were not available. The operators manual that was available was for similar equipment, but not for the identical equipment. There was no fire extinguisher provided, and no one on site was trained to administer first aid in the event of an emergency. No first aid materials were available on sight and there was no safety training program available to employees.

CAUSE OF DEATH

The Medical Examiner listed the cause of death as massive extensive depressed skull fractures due to crush injury of head.

RECOMMENDATIONS/DISCUSSION

This incident could have been prevented by installing wire mesh or plexiglass protection around the cab of the skid loader to protect the operator from contacting moving equipment parts outside the cab area. The victim could also have protected himself through use of personal protective equipment and greater attention to the need for safe practices in the operation of mechanical equipment.

The company is small and might find it difficult to offer any extensive safety training program to its employees, but should have more extensive safety capabilities than were evident. Training resources are available at little or no cost through contact with private or government entities in the vicinity or elsewhere in the state. Local businesses can find such safety training aids and/or consultation by contacting Wyoming OSHA or the WY- Wyoming FACE Project.

While it appeared that the victim was knowledgeable regarding the safe operation of a skid-loader and was considered by his co-workers to be careful and competent in equipment use, there was a notable lack of safety concern. He had moved his head into the direct path of hydraulic arms that he was personally operating, and was operating the loader without use of personal protective gear.

Access to emergency services and basic first-aid equipment should be available on site in any business that operates as a sawmill or equally hazardous industry. Even though the company was in close proximity to the community ambulance, on-site assistance and communication would have increased the opportunity for quick and effective reaction to the incident.

Companies involved in sawmill operations should be aware of Wyoming OSHA standards for Wood Harvesting and Processing. As a result of this incident, Wyoming OSHA has instructed the company to develop written procedures for all potential as well as actual hazardous processes, procedures and equipment and to develop and implement a formal training program for the above. Wyoming OSHA has also instructed the company to implement a safety audit for the entire operation to insure compliance with all requirements. Such recommendations are pertinent to small, family-owned and operated sawmill operations, and should be followed by all such companies to minimize the potential for serious employee injury.

FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (Wyoming FACE) PROJECT

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (Wyoming FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying the working environment, the worker, the task the worker was erforming, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

States participating in this study include: Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

NIOSH Funded/State-based Wyoming FACE Projects providing surveillance and intervention capabilities to show a measurable reduction in workplace fatalities include: Alaska, California, Colorado, Georgia, Indiana, Iowa, Kentucky, Massachusetts, Maryland, Minnesota, Missouri, Nebraska, New Jersey, Wisconsin and Wyoming.

Additional information regarding this report is available from:

Wyoming Occupational Fatality Analysis Program
522 Hathaway Building - 2300 Capitol Avenue
Cheyenne, WY 82002
(307) 777-5439

Please use information listed on the Contact Sheet on the NIOSH FACE web site to contact In-house FACE program personnel regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.