Fatality **A**ssessment and **C**ontrol **E**valuation Project

Public Health

KY FACE #98KY106

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SUBJECT: Log Rolls off Truck at Sawmill Killing the Truck Driver

SUMMARY

In November 1998, a 32-year-old male truck driver was killed when he was struck by a log that rolled off the top of his tractor trailer truck while preparing the truck for unloading at a sawmill complex. The victim accompanied by his father, had picked up a load of logs and transported them approximately 220 miles to the sawmill complex. He arrived at the mill with the logs secured by straps and stacked well above the standards of the trucks trailer. He drove to an unloading area. The victim and his father exited the truck and while the father waited at the front of the truck, the victim released the binders on the driver's side of the trailer. He then walked to the passenger's side of the trailer apparently to pull the straps off of the logs. One of the logs rolled off of the stack striking him. His father heard the thump of the falling log, walked to the passenger side of the trailer and found the victim. Sawmill employees initiated the call to EMS and began performing cardiopulmonary resuscitation (CPR). EMS arrived in eight minutes and transported the victim to a local hospital where he was pronounced dead on arrival.

In order to prevent similar incidents from occurring, FACE investigators recommend:

- The height of the logs should not exceed the height of the standards on the truck;
- Binders on logs should not be released prior to securing the logs with an unloading line or device [Sawmill regulations - 1910.265(d)(1)(i)(b)];
- Binders should be released only from the side on which the unloader operates except when the person making the release is using a remote control device or is protected by racks or equivalent means [Sawmill regulations - 1910.265(d)(1)(i)(c)];
- Written policies should be in place regarding unloading procedures for loggers at the mill, and the policies should be enforced by the mill owners; and
- Loggers should consider wearing head protection (a hard hat) to protect against head injuries from falling objects [Sawmill regulations - 1910.265(g)].

INTRODUCTION

FACE investigators were informed on 14 December 1998 of the death of a worker at a sawmill. The incident occurred on 24 November 1998. An investigation was initiated and a site visit made on 6 January 1999. An interview was held with the county coroner who was summoned to the hospital and visited the site. Photographs of the scene were viewed and copies of the photos and the death certificate were obtained. The sawmill's owner and controller were not available the day of the visit and were interviewed via phone at a later time. The University of Kentucky Department of Forestry and an OSHA Technical Advisor for safety and health issues that affect the Forest Products Industries were both consulted.

The facility began as a small operation in the 1960s and had grown to a large complex of three sawmills employing 125 to 150 workers. The facility purchased 90% of its timber from independent loggers and haulers, with the other 10% supplied by loggers employed by the sawmill. Reportedly the company had a written safety program and a safety officer. According to the owner, the safety program includes an internal policy prohibiting logs from being stacked above the standards. This policy does not apply to contract employees, only to those who are employed by the sawmill. Reportedly the safety program also contains provisions for unloading trucks.

Once a truck has entered the sawmill, it must be taken to one of the three sawmill unloading areas where the binders (e.g., a device used to apply and maintain tension on a load securing strap or chain) are to be released by the truck driver. The truck driver will usually pull his truck into a spot where the wait to unload is minimal. There is not a provision requiring the use of a front-end loader while releasing binders because of the owner's concern that a front-end loader may unintentionally push an unstable log off the truck. Once the truck is ready to be unloaded, the driver is required to move away from the area while one of the sawmill employees begins unloading.

There are three types of machines often used to unload logs: a front-end loader, knuckleboom loader, or a tractor with a hydraulic lift attachment. Because knuckleboom loaders are less expensive and affixed to the truck, they are often used by the loggers to load logs onto the truck at the site but not used once at the sawmill, as front-end loaders are much more efficient. They have a smaller weight restriction and larger grapple (bucket) to facilitate faster unloading of the truck. Also, sawmills are more likely to have the capital required for this expenditure. In this instance, it is not known what mechanical device was used to initially load the truck, however, a front-end loader would have been used to unload at the sawmill.

As the front-end loader is removing the logs, they are sorted and stacked according to their species (e.g., poplar, white oak, etc.) and stacks them accordingly. The buyer determines the volume and value of the load, and gives a dollar value to the seller. The seller receives a check either that day or at the end of the week if they make frequent deliveries.

The victim was a self-employed trucker who sometimes transported cargo other than logs. Because of this, he had transported logs to the sawmill intermittently over the last 3-4 years. He did not complete the Master Logger Program. It is presumed that he had been working for at least six hours on the day of the incident because his load was retrieved from eastern Kentucky

and was being delivered to a sawmill in western Kentucky, a distance of about 220 miles. This load was believed to be his last and possibly only trip for the day since it was 3:30 p.m. in the afternoon when he arrived at the sawmill.

INVESTIGATION

The day of the incident was a sunny, clear day. The victim traveled to Eastern Kentucky to pick up low-grade timber and deliver it to a sawmill in Western Kentucky. The victim drove a tractor trailer to pick up the load. He arrived at the sawmill with a mixed load of timber a little after 3:00 p.m. with his father as a passenger in the truck. He entered the sawmill and drove the truck to one of the three level unloading areas.

The truck's trailer was long enough to accommodate three horizontally stacked bundles of logs. The trailer was equipped with standards (e.g., stanchions, uprights, poles, posts or supports used to restrain logs from rolling off of a truck or trailer) 4 feet tall and the log bundles had been stacked about 4 feet higher. Because of the large amount of material being transported, there were six straps (two per bundle) placed around the logs to keep them in place.

Both the victim and the father exited the truck. The father stood in front of the truck while the victim prepared the truck for unloading. He started releasing the binders at the back of the driver's side and moved toward the front of the truck. Once he finished releasing the last binder, he went to the passenger side of the truck to apparently pull the straps off the load. As he reached the front of the trailer on the passenger side, a log rolled off the truck striking and knocking him to the ground. The hickory log that struck the victim was approximately 16 feet long and 12" in diameter.

The father heard the sound of a falling log, went to the passenger side of the truck, and found his son on the ground. Two sawmill employees who were certified in CPR began administering the procedure in hopes of saving the victim. EMS was notified by an employee of the sawmill at 3:17 p.m., and arrived at the sawmill at 3:25 p.m. The victim was transported to the community hospital where he was pronounced dead upon arrival.

CAUSE OF DEATH

The death certificate listed the cause of death as internal injuries sustained from logging accident.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: The height of the stack of logs should not exceed the height of the standards on the truck.

Discussion: In this case, the height of the logs exceeded the height of the standards by approximately 4 feet. Stacking the logs in this fashion, increases the likelihood that the logs will shift in transit and potentially fall off once binders are released. Irregular shaped logs and knots in the logs do not allow them to rest in a stable position while being transported. In this case, because of the long distance traveled, the load could have shifted in transit. Had the height of the logs been below the standard height, any shifting would present less risk to the driver because the standards would most likely contain the logs once the binders were released. An unloading device or unloading line, however, should still be used to secure the logs while the binders are

being released even if the logs are not over stacked. If the load straps are continually tightened during the trip to the sawmill and some of the logs are knotted, built-up pressure could cause a log to "pop" over the standards. Loading above the standards is not motivated by financial incentives in this case since the driver was to be paid by the trip, not the size of the load delivered.

Recommendation #2: Binders on logs should not be released prior to securing with an unloading line or device [Sawmill regulations - 1910.265(d)(i)(b)].
Discussion: Sawmill regulations require that the load be secured with an unloading line or device prior to releasing the binders. This would prevent the logs from rolling off the truck if they have shifted in transit. In this case, an unloading line or device was not used. Front-end loaders, knuckleboom loaders, and tractors equipped with hydraulic attachments are examples of unloading devices. An unloading line is a cable used to bind the logs into bundles, acting as a secondary means of securing the logs. The use of such could have prevented any logs from rolling off the truck. It is safer to release the binders on the driver's side using a mechanical device to support the logs and to eliminate going to the passenger side to pull off the straps. If a logger does, however, go to the passenger side to pull off the straps, the grapple should be extended to the passenger side of the truck or the front-end loader moved to the passenger side and the logs secured. If this is done prior to the logger going to the passenger side, this will prevent logs from falling off the truck. Since this worker was not a sawmill employee, the regulation cited does not apply to him, however it is still useful in illustrating the appropriate procedures for unloading timber at a sawmill.

Recommendation #3: Binders should be released only from the side on which the unloader operates except when the person making the release is protected by racks, equivalent means or is using a remote control device [Sawmill regulations - 1910.265(d)(i)(c)].
Discussion: There are sawmill regulations in place that address the releasing of binders on logging trucks and require specific actions. This requirement enforced in conjunction with recommendation #2, would require sawmill employees to use a device to secure the logs while being released and that the releasing be done on the side from which the unloader operates. This enables the worker to be protected while releasing the tension from the binders. From our investigations of similar logging fatality cases, it appears that most of the time the binders are released on the driver's side of the truck without any protective devices in place to secure the logs. In this particular case, the binders were also released on the driver's side without any means of protection. The fatal incident, however occurred on the passenger side. Therefore, if a worker feels they need to go to the passenger side to release/remove binders, some type of protection (remote control device, rack, or equivalent means) should be employed to protect them from falling logs. They can also use the front-end loader to secure the logs while on the passenger side. It is likely that if a protective device had been used on the passenger side, the worker would not have been fatally struck by a falling log.

Recommendation #4: Written policies should be in place regarding unloading procedures for loggers at the mill, and the policies should be enforced by the mill owners.
Discussion: Written guidelines for unloading procedures at the mill that are enforced for all employees would help ensure that the logs are unloaded safely, providing a safe work environment for loggers, truck drivers, and the employees of the mill. At this sawmill, their employees were prohibited from stacking logs above the standards while independent loggers or haulers were not held to the same rules. If all trucks entering the property were held to this

requirement, incidents such as this could be prevented. In addition, regulations specific to sawmills indicate that releasing the binders be done only on the side where the unloader operates and while the load is being secured by a front-end loader or other mechanical device. These requirements should be incorporated into the safe unloading procedures and be enforced for all trucks entering the property.

Recommendation #5: Loggers should consider wearing head protection (a hard hat) to protect against head injuries from a falling log [1910.265(g)].
Discussion: In some instances, hard hats may provide adequate protection against lethal head injuries from being struck by falling logs or other objects. Head protection is required when there is potential for head injury from falling objects. In this instance, such a hazard did exist and would warrant the use of head protection. It is unclear whether wearing a hard hat in this incident would have saved the victim or reduced the severity of the injury.

REFERENCES

American Pulpwood Association, Inc. (APA), The Logger's Guide to the New OSHA Logging Safety Standards (as revised September 8, 1995).

Occupational Safety and Health Standards for General Industry, 29 CFR 1910.265 Sawmills.