Massachusetts Landscaper/Laborer Dies When Crushed in Small Skid Steer Loader

Massachusetts FACE 94-MA-14

SUMMARY

On March 4, 1994, a 24 year old male landscaper/laborer died from injuries sustained when he was crushed by the bucket of small skid steer loader. The victim was standing in front of the machine, reaching in below the raised bucket in order to clear snow from the foot control wells inside the cab. Evidently, while he was clearing the snow, the victim activated the foot pedal which lowered the bucket. The bucket lowered, crushing the victim between it and the body of the machine. It was not until emergency services responded minutes later that one of the responders was able to determine how to lift the bucket from the victim. He was then transported to a regional hospital where he was officially pronounced dead approximately one hour following the incident. In order to prevent future similar occurrences, MA FACE investigators recommend that employers:

- develop and implement routine procedures, possibly including lockout tagout, for the safe removal of snow from the foot well area of front end loaders
- ensure that employees fully understand and comply with the proper use of machinery safety mechanisms

INTRODUCTION

On March 7, 1994, a city clerk's office notified MA FACE through it's 24 hour fatality hotline that a 24 year old male worker had been crushed to death by heavy machinery on March 4th. An investigation was initiated, and on June 8, 1994, the MA FACE Field Investigator interviewed the employer. The death certificate, municipal police report, U.S. Department of Labor OSHA incident narrative, copy of the machine operations manual and assorted newspaper clippings were obtained during the course of the investigation. An instructional video and training manual were also obtained from the equipment manufacturer.

The company was a lawn care, landscaping and snow removal company in business for seven years and seven months. It employed three non-union individuals, one of whom held the same title as the victim.

The company did not employ a designated safety person, have a safety and health committee or written safety rules or procedures in place at the time of the incident. The employer did however, require employees (including the victim) to demonstrate their competency in the operation of the front end loader prior to its use in the field.

The victim was a 24 year old male landscaper/laborer in only his second day of employment at the company at the time of the incident. The degree to which the victim was trained is unknown, although a previous employer stated that the victim was familiar with the operation of the equipment which caused his death. The employer reported that the victim claimed he had a state issued license for the operation of hoisting machinery. The investigation, however, revealed that the victim did not have this license.

INVESTIGATION

On the day of the incident, the victim was picked up at approximately 7:15 a.m. by a co-worker who was driving a snow plow and sander equipped pick-up truck. The men proceeded to a local condominium complex to complete the snow removal operations they had begun the previous day. Upon arrival at the jobsite, the victim was dropped off at an area where a small skid steer loader rented by the employer was left overnight. The victim immediately started up the machine, then got out and used a combination snowbrush/scraper borrowed from the co-worker to clean the new snow which had fallen overnight onto the machine.

The small skid steer loader was a small, front end bucket loader which was used for light earth moving, snow removal, etc. Approximately the size of a compact automobile, the skid steer loader housed a single operator in a small cab. Foot pedals controlled the raising and lowering of the hydraulically-powered lift arms and bucket. The equipment had a spring loaded pedal interlock system. A safety bar, which when lowered over the operator, released the pedals from their locked position. When the safety bar was in the raised position, the pedals could not activate the lift arms.

The co-worker reported that he had made one loop around the condominium complex in his truck and saw the victim leaning into the cab of the running machine beneath the raised bucket. Following a second pass around the complex, which took approximately five to seven minutes, the co-worker witnessed the machine still running, but the victim pinned between the lowered bucket and machine frame with the snow brush/scraper in his hand. Summoning the employer from a mobile telephone in his truck, the co-worker had the employer call for emergency medical responders, who soon arrived. EMS personnel extricated the victim and transported him to a regional hospital where he was officially pronounced dead approximately one hour later.

Subsequent investigation revealed what appeared to be a common problem with this machine, according to a Massachusetts Department of Public Safety representative. Apparently, fallen snow can routinely accumulate around the foot well control pedals of this front end loader. The snow interferes with the operation of the machine and must be removed. The investigation further revealed that all of the accumulated snow had been completely removed from the left foot well, and mostly from the right. MA FACE concluded that while the victim was clearing the snow he must have inadvertently activated the foot pedal of the loader which lowered the lift arms and the bucket. The victim was thus crushed to death between the bucket and the body of the machine.

The operators manual, which was available in the cab at the time of the incident, indicates that the operator must be in the cab with the parking brake engaged and the safety bar lowered before the engine can be started. The victim must have entered the equipment, lowered the safety bar in front of him, started the engine, and then raised the bucket before he exited the cab. To leave the cab while the machine was running, the victim had to either

climb over or wriggle under the snugly-fitting safety bar. Presumably the victim did this in order to obtain easier access to clear away the snow from the foot pedals area of the machine. Even if the victim had turned off the machine before leaving the cab, the bucket would still have lowered when the foot pedal was depressed. Leaving the safety bar in the down position defeated the spring loaded pedal interlock system.

Although the equipment manufacturer sold a lift arm stop, or lockout device for the lift arms, this lockout device was not available at the time of the incident. Moreover, two people are required to install it. One person must be in the operator's seat with the seat belt and bar in place. After the operator raises the bucket to its full height, a second person places the lift arm stop over the rod of one lift cylinder. Once the stop is in place, the operator can shut off the engine, raise the safety bar, and step out of the cab.

CAUSE OF DEATH

The medical examiner listed the cause of death as blunt chest trauma.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should develop and implement routine procedures, possibly including lockout tagout, for the safe removal of snow from the foot well area of front end loaders.

Discussion: Although the victim was reportedly familiar with the operation of the skid steer loader, he went to great lengths to circumvent the safety mechanisms of the machine in order to clear the snow from the foot well. The employer, however, did not establish any safety rules or procedures for the job of removing snow from the cab. Employers should develop safe procedures for snow removal, such as requiring employees to work with the engine off and the bucket lowered to the ground. At a minimum, employers should strictly prohibit employees from working beneath buckets of front end loaders which have not been locked out. Had safety rules for snow removal been established and enforced, this incident may have been prevented.

The U.S. Department of Labor OSHA determined that lockout/tagout procedures did not apply to this incident because the victim was neither servicing, nor performing machine maintenance in the general sense of the term. However, if successful completion of a job requires that an employee work beneath the bucket of a front end loader, lockout tagout should be required.

Recommendation #2: Employers should develop and implement a comprehensive safety program which includes, but is not limited to, safety training.

Discussion: The employer did not have a comprehensive safety program, and did not provide safety training. Comprehensive safety programs should ensure that employees fully understand and comply with the proper use of machine safe guards. Employees must be trained to know that once safety mechanisms are bypassed or otherwise compromised, serious injury, illness and/or death can occur. In order to ensure that employees fully understand how to safely operate machinery, employers who rent small skid loaders on a regular basis should consider purchasing and using the training manuals and videos which equipment manufacturers make available.

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