

Fatality Investigation Report

OR 2004-07-1

Nursery laborer killed in skid-steer loader

SUMMARY

On March 25, 2004, a 24-year-old nursery laborer was killed while operating a skid-steer loader. The operator was moving metal carts containing plants from an outside location to inside a greenhouse. He had been moving the carts for several hours, before he was noticed missing. The operator was discovered in a seated position in the operator's cage of the skid steer with a severe head injury. His left arm was behind him as if to support himself while leaning forward. It was raining, and the victim had placed his coat across his lap to prevent his pants from getting wet. A pocket of the coat was caught on the skid-steer's operational hand controls. The controls were probably activated as the victim leaned forward, causing the skid steer to move suddenly. The jolt apparently caused his head to forcefully strike the left-front roll bar. The victim was pronounced dead at the scene.



One of three similar skid steers operated at the worksite.

CAUSE OF DEATH: Traumatic injury to brain

RECOMMENDATIONS

- **Do not operate equipment with loose clothing, a tool belt, or other items that could interfere with or entangle the operator controls.**
- **Never exit or lean out of the protective operator's cage of mobile machinery without first shutting down and turning off the power completely.**
- **Maintain the machine in safe operating condition.**
- **Employers should consider a formal training process for operators of mobile machinery, including written documentation, and regular evaluation and feedback conducted through the company safety committee.**

INTRODUCTION

On March 25, 2004, a 24-year-old nursery worker was killed while operating a skid-steer loader. OR-FACE received notification of the incident on March 27. The FACE investigator conducted an interview with the employer at the worksite on March 29. This report is composed from the employer interview, the sheriff's report, and information from the OR-OSHA investigation.

The employer is a large-scale nursery operation providing plants and shrubs for local markets. The workforce is mostly Hispanic and seasonal. At the time of the incident, about 125 employees were working on the 60-acre wholesale site.

The victim was hired 3 days earlier to operate the skid steer. He demonstrated proficiency at operating the skid steer to the satisfaction of the nursery foreman. The employer had an active safety program, but without regularly scheduled safety meetings. Training for operating the skid steer was done on the job but was not documented. The employer monitors building damage as an indicator of skid steer operational performance, and no recent damage had been observed.

INVESTIGATION

On the day of the incident, the skid-steer operator was moving metal carts, about 5 ft. tall, from an outdoor location to the inside of a greenhouse. The process involved driving the skid steer up to the cart so that the front forks went underneath the cart. The operator was then supposed to shut off the machine and exit the cab in order to secure the load with a short length of chain welded to the skid steer. The cart was then moved to the greenhouse where other workers released the cart, and then unloaded the individual plant containers. The operator performed this work for several hours in the morning before greenhouse workers noticed his absence.



Metal carts containing plants, which the victim was picking up with the skid steer and moving into greenhouses.

Co-workers reported the operator appeared exhausted that morning, leaning his head back momentarily to rest while a cart was being unloaded. He was not observed operating the skid steer unsafely. No one witnessed the fatal incident.

The operator was discovered slumped over in a seated position in the operator's cage. The skid steer was jammed against a light pole 40-50 feet from the metal carts, where it had evidently rolled under its own power without guidance. The victim's left arm was behind him, apparently in a position to support himself while leaning forward. The safety bar, which deactivates the operating controls when raised, was still in the down position.

It was raining, and despite the availability of rain gear, the operator had placed his coat tightly across his lap to prevent his pants from getting wet. A police officer investigating the scene noticed that a pocket of the coat was caught on the operator's T-handles, which move the skid steer, and raise and lower the forks/mast assembly.

The employer and yard foreman speculate the victim was leaning forward against the safety bar when the coat activated the controls and caused the skid steer to move suddenly forward. The sudden jolt caused the operator to strike his head on the cab's left-front roll bar. The foreman reportedly had experienced this same sudden movement himself while operating the skid steer in the past, and had also struck his head against the frame.

The operator may have been in an awkward position for the sudden jolt, because he was either leaning forward out of his seat to secure the load from inside the cab, or was preparing to exit the skid steer without shutting off the power. A few additional details from the OR-OSHA investigation lend credence to the second explanation. The operator had just returned from a break, and the greenhouse door was shut when he approached with a new load. The weather was very rainy and windy. He may have decided to jump out quickly to open the door without shutting off the power. The operator may have started to exit the loader, without turning off the power, but when he moved, the coat caught the still-active controls and the machine jolted forward as he exited his seat. No one witnessed the actual events.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Do not operate equipment with loose clothing, a tool belt, or other items that could interfere with the operator controls.

The victim probably received a severe injury to the head when his coat caught on the controls causing the skid steer to move unexpectedly. An operator should not operate moving equipment while wearing loose clothing, a tool belt, or other items that could interfere with controls. These items should be removed and safely stowed.

Recommendation #2: Never exit or lean out of the protective operator's cage of mobile machinery without first shutting down power completely.

An operator of mobile machine should never extend any part of the body outside the operator's protective cage when the power is on. Shut down the power according to the manufacturer's instructions, typically – gear in neutral, parking brake on, forks to the ground, power off, before exiting the machine.

Recommendation #3: Maintain the machine in safe operating condition.

Regularly inspect and maintain interlocked controls, safety belts, restraint bars, side screens, and rollover protective structures (ROPS). All safety features that are not working properly should be reported and the equipment should not be used until repaired. Before returning equipment to service, check to ensure that all systems are operational and functioning as intended.

Recommendation #4: Employers should consider a formal training process for operators of mobile machinery, including written documentation, and regular evaluation and feedback conducted through the company safety committee.

Only employees certified through a documented company training program should be allowed to operate mobile machinery. A comprehensive training program includes formal training, on-the-job training, certification, and workplace observation by the employer. A written procedure, like a predesigned checklist for operator certification, helps to ensure that the operator understands all relevant safety requirements. Regular meetings of a safety committee are an ideal venue to review operator safety on mobile machinery. In addition, formal training should be repeated every 2 years, or anytime unapproved work practices are noted through observation or incident reporting. A periodic formal assessment, with a written record, helps to maintain documentation of safe practices for both employer and employee.

REFERENCE

NIOSH (2001). *Preventing injuries and deaths of workers who operate or work near forklifts* [Pub 2001-109]. Available online: <http://www.cdc.gov/niosh/2001-109.html>

NIOSH (1998). *Preventing injuries and deaths from skid-steer loaders* [Pub 98-117]. Available online: www.cdc.gov/niosh/skidalt.html

For More Information

The Center for Research on Occupational and Environmental Toxicology at Oregon Health & Science University performs Fatality Assessment and Control Evaluation (FACE) investigations through a cooperative agreement with the National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR). 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 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.

Oregon Fatality Assessment and Control Evaluation (OR-FACE) Program

Center for Research on Occupational and Environmental Toxicology (CROET)

Oregon Health & Science University (OHSU)

3181 SW Sam Jackson Park, L606

Portland, OR 97239-3098

Phone (503) 494-2502

Email: orface@ohsu.edu

Web site: <http://www.ohsu.edu/croet/face/>

Oregon FACE reports are for information, research, or occupational injury control only. Safety and health practices may have changed since the investigation was conducted and the report was completed. Persons needing regulatory compliance information should consult the appropriate regulatory agency.