

December 2023

Foreman's Leg Crushed in Power Takeoff Shaft

On a late winter day around noon, an experienced dairy foreman was filling barn stalls with sawdust bedding using an older model tractor with a sawdust throwing trailer attached to the tractor's power takeoff (PTO). The tractor and trailer were used two days per week, and only for this task.

The belt in the front of the trailer was not working properly, which occurred regularly. The foreman left the tractor running with the PTO engaged and climbed onto the trailer to check the belt.

There was no guard covering the PTO driveline shaft between the tractor and trailer. The guard had broken and been removed the previous year, and had not been replaced.

The foreman stood on the front of the trailer above the rotating PTO shaft to check the belt, which he had done many times before. As he did, the PTO caught the right leg of his rain pant and his leg became entangled in the rotating shaft.

There were no others around when the incident occurred. The foreman was able to grab a bar on the trailer to pull himself out. He used his phone to call his wife, who called the farm owner for help.

The PTO shaft broke bones in the foreman's leg and tore away a large area of skin, which required surgery to repair. More than a year and a half after the incident, he still had not been able to return to work.



Tractor and trailer involved in the incident.



The foreman was standing on the front of the trailer above the unguarded power takeoff (PTO) shaft when the incident occurred. (Photo shows PTO shaft with guard installed)

What do you think went wrong?

In the space below, list some of the factors that you think could have contributed to this incident. Then, flip the page over for contributing factors and safety recommendations and requirements.

Reporting: Employers are required to contact DOSH within eight hours of a workplace fatality or in-patient hospitalization of any employee. See [WAC 296-27-031](#).

Contributing Factors

Unguarded PTO shaft. The employer did not ensure that the power takeoff (PTO) shaft was guarded to prevent worker contact with rotating parts.

PTO was engaged during maintenance. The tractor was running and the PTO was engaged when the foreman stood on the trailer above the unguarded PTO shaft to fix the sawdust thrower's belt.

No safety program. Although workers were instructed how to operate tractors, training was not documented, and there was no written safety program. The employer did not conduct regular safety meetings or safety walks or inspections, which could have alerted workers and the employer to hazards such as missing equipment guards and unsafe work practices.

Recommendations

Repair or replace broken or missing machine guarding promptly. Remove equipment and machinery from service until repairs are completed. Always follow manufacturer's instructions for repair and modification.

Train workers how to recognize caught-in hazards, to stop working when hazards exist, and encourage them to report any found to their supervisor.

Conduct regular safety walks or inspections to identify injury hazards and to make sure work is done safely.

Avoid working alone. Work in pairs when possible, or maintain regular radio contact with other workers or a supervisor in case an incident occurs.

Plan for safety. Whenever possible, employers should include worker input when establishing their required safety program. Safety programs should include emergency rescue and contact procedures.

Requirements

- The employer must ensure that all power takeoff shafts, including rear, mid-mounted or side mounted shafts, are guarded by a master shield, including that:
 - Power takeoff driven equipment is guarded to prevent employee contact with rotating members of the power drive system. When the tractor master shield must be removed to use specific power takeoff driven equipment, the equipment must provide protection from the part of the tractor power takeoff shaft that protrudes from the tractor. See [WAC 296-307-076\(3\)\(b\)](#)
- The employer must develop a written accident prevention program (APP) tailored to the needs of the employer's agricultural operation and to the types of hazards involved. See [WAC 296-307-030\(2\)](#)
- Must be held at least monthly or whenever there are significant changes in job assignments. Meetings must be tailored to the particular operation or activity occurring at the time. See [WAC 296-307-033\(1\)](#)

Resources

- Chapter 296-307 WAC: Safety Standards for Agriculture—<https://app.leg.wa.gov/wac/default.aspx?cite=296-307>
- Protecting Agricultural Workers from Tractor Hazards (OSHA)—<https://www.osha.gov/sites/default/files/publications/OSHA3835.pdf>
- L&I's Consultation Program offers confidential no-fee, professional advice and assistance to Washington businesses. To request an L&I Consultation go to: <https://www.lni.wa.gov/safety-health/preventing-injuries-illnesses/request-consultation/>

Safety Training Sign-In (Print Name Legibly) Date: _____
