

Case 280. 34-year-old farm hand died when he was run over by a Model 555 Ford backhoe tractor while installing agricultural drain tiles in a field.

A 34-year-old male farm hand died when he was run over by a Model 555 Ford backhoe tractor while installing agricultural drain tiles in a field. The decedent was working alone and had completed four of six trenches. It is unknown how the decedent was run over by the backhoe. After being run over, he called a co-worker indicating he was badly hurt and needed an ambulance. The owner called for emergency response while he was on the way to the incident site. When the owner arrived, he found the backhoe running, in gear, with its outriggers in the up position, front bucket up and rear bucket touching the ground in a small ravine approximately 44 feet past the decedent. The owner administered first aid to the decedent while awaiting the arrival of emergency response. The condition of the backhoe may have been a factor in this incident. The MIOSHA compliance officer noted that the left front tie rod was broken off of the backhoe with no remnants of a ball joint attached to the main tie rod or found at the scene. MIOSHA also noted a pry bar approximately 3 feet long sticking in the ground approximately 6 feet behind where the decedent was laying. The farm owner indicated the pry bar was sometimes used to pry the pin on the rear bucket into place. The farm owner explained black tape near the rear bucket pivot pin was present to keep a snap ring in place so the pin did not come out. MIOSHA noted excessive wear to the right front tie rod on the backhoe and on the tie rod of the right front hydrostatic steering connection. A bungee cord on the steering column was present to keep the gear shift lever in road gear. MIOSHA construed that steady pressure was needed to keep the backhoe in a higher gear. The MIOSHA compliance officer could not dismiss the probability that the transmission may have had problems in more gears than road gear. The owner indicated he repaired a front pivot pin and did not note any issues with the tie rod.

The police noted that when the employer drove the backhoe after the incident, he could not keep a straight path and could not keep its right tire from turning to a 90-degree angle due to the broken tie rod. This condition led the police to believe the tie rod did not come off until the backhoe hit a large rut in the ground which would have happened approximately 42 feet after the decedent had been run over. The police investigation determined that if the tie rod had come off directly after or before the decedent was run over, the backhoe would have had its wheel cocked and could have ended up in a different path of travel. Evidence at the scene led the responding police department to the conclusion that the incident may have occurred while the decedent was getting on or off of the backhoe. The backhoe had a shuttle shift that allowed the backhoe to go into gear without a clutch. The decedent could have engaged the shuttle shift while entering or exiting the backhoe.

The MIOSHA Construction Safety and Health Division issued the following Serious citation at the conclusion of its investigation:

SERIOUS: GENERAL RULES, PART 1

- Rule 114(1)
An accident prevention program was not developed, maintained, and coordinated with employees.

An accident prevention program was not developed by the employer. Employee engaged in field tile installation with use of a backhoe.

- Rule 115(2)
Damaged or defective machinery, tools, materials, or equipment was used that could create a hazard.

The transmission of a 555 Ford backhoe could not stay engaged in a high road gear without the use of a device to secure the stick shift in place, worn tie rods, and damaged rear bucket pivot pin locking ring. Employee engaged in field tile installation.

SERIOUS: MOBILE EQUIPMENT, PART 13, RULE 1301 REF OSHA 1926.602(b)(3)

The safety requirements, ratios, or limitations applicable to machines or attachment usage covered in Power Crane and Shovel Associations Standards No. 1 and No. 2 of 1968, and No. 3 of 19969, shall be complied with, and shall apply to cranes, machines, and attachments under this part.

Ford 555 backhoe was not maintained in accordance with standards 1, 2, and 3 of Power Crane & Shovel Association.