The National Institute for Occupational Safety and Health (NIOSH)

Farmer Dies After Falling Off a Tractor

Minnesota FACE 93MN006

SUMMARY

A 66-year-old male farmer (victim) died of injuries he sustained after falling from a tractor while plowing a field. He was plowing corn stubble under with a four bottom, three-wheeled, pull-type plow. The field was flat and dry. The tractor had a wide

front-end but no roll over protective structure (ROPS); the fenders had been removed. The plow became plugged with stubble during plowing, and the victim attempted to unplug it by raising the plow shares and proceeding in reverse at full throttle. The plow jack-knifed, causing one tractor wheel to jam against it. The sudden jolt as the tractor jammed against the plow probably threw the victim off the tractor. He was found between the plow and tractor beneath the right axle, with his face into the ground, approximately ten minutes after the incident. He was by then hypoxic. A pulse was restored on site by first responders, but he died the next day from his injuries. MN FACE investigators concluded that, in order to prevent similar occurrences, the following guidelines should be followed:

- **retrofit, whenever possible, older tractors with ROPS and seat belts to provide maximum protection to operators; and**
- **keep tractor fenders in place to provide a barrier to moving tires for operators who may be jostled during operation.**

INTRODUCTION

MN FACE was notified of a May 4, 1993, fatal farm incident on May 25, 1993. The county agriculture extension agent, county coroner, and EMS responders were interviewed. The county sheriff's report was requested. Due to conflicting stories as to whether this was a fall or a tractor rollover incident, a full investigation was delayed. It was finally determined that this was a fall fatality, and a site investigation was conducted July 16, 1993.

The incident took place on a private family-operated farm. The victim owned the farm property for at least 35 years. He and his son-in-law were the primary farm workers. Corn was the major commodity produced.

INVESTIGATION

A 66-year-old male farmer was plowing corn stubble under in a field on a spring evening. The field where the incident took place was flat, dry, and free of rocks and stumps. The tractor was a wide front-end International 544. It had no roll over protective structure (ROPS) and the fenders had been removed. The tractor was approximately 35 years old; the victim

had owned it for about one year. The plow was a McCormick four-bottom, pull-type plow with two front and one rear center tires. From a description given to an agriculture extension agent, he estimated the plow's age at 20 to 40 years old. There were no witnesses to the incident.

The incident occurred about 9:00 p.m. when the plow became plugged with corn stubble. The farmer apparently raised the plow shares and put the tractor, running at full throttle, into reverse gear to move the plow backwards to unplug it. His foot may have slipped from the clutch or the plow may have become stuck as it backed. The plow jack-knifed to the right, jamming itself into the right tractor tire. See Figure 1.

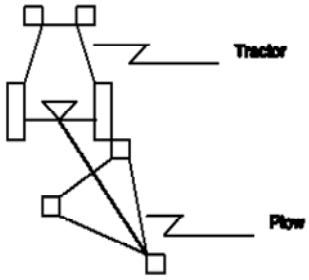

Figure 1. Tractor and plow positions.

The left front plow tire was raised 3 feet off the ground and the plow tilted to the right where the plow and tractor tires had locked. The left tractor tire continued spinning in reverse, ultimately digging itself into a hole. It is unknown if the victim was standing or sitting at the time of the incident, but presumably the strong jolt as the tractor jammed into the plow at full throttle threw the victim off the tractor. He was found between the plow and tractor beneath the right axle with his face into the ground. It appeared to individuals who were first on the scene that the tractor tire pulled him to this location.

Family members discovered the victim about 10 minutes after the incident. The tractor was still running and in reverse gear. They placed a 911 call and began CPR after withdrawing him from beneath the tractor axle. First responders restored a pulse after arriving on site and transported the victim to a hospital. He never regained consciousness, however, and died the next day from injuries resulting from asphyxia.

CAUSE OF DEATH

The cause of death listed on the death certificate was brain damage due to or as a consequence of asphyxia due to or as a consequence of a farm accident.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Retrofit, whenever possible, older tractors with ROPS and seat belts to provide maximum protection to operators.

Discussion: Many deaths result from tractor rollovers and it is a sound safety practice to guard against this hazard. Most older tractors can be retrofitted with ROPS and a seat belt. Two types of ROPS have been developed – frames and enclosures. Frames are generally two-post or four-post structures attached to the tractor chassis. Enclosures are protective enclosures built around a protective frame. ROPS frames can be used in circumstances which call for access to equipment pulled by tractors. In conjunction with a seat belt, both types of ROPS help protect an operator in case of a tractor rollover. As this incident illustrates, seat belts may provide protection in other circumstances as well. Tractor

operators should remain seated during operation and, even though this incident was not a rollover, the availability and use of a seat belt (recommended only when a ROPS is in place) may have prevented the victim from being thrown from the tractor when it suddenly jolted to a stop.

Recommendation #2: Keep tractor fenders in place to provide a barrier to moving tires for operators who may be jostled during operation.

Discussion: The fenders had been removed from the tractor sometime previous to the incident. Their absence may not have contributed directly to this incident, but they provide protection to operators from moving tires and should be kept in place. In addition, their position and height on the tractor involved in this incident actually tended to enclose the operator in the seat area. In some situations (i.e., on rough terrain), fenders may help prevent operators from being jostled or thrown and contacting moving tires.

REFERENCES

1. John Deere & Company Service Training. Fundamentals of Operation (FMO) Series. Fundamentals of Machine Operation, Agricultural Safety. 1983, Moline, Illinois.

To contact Minnesota State FACE program personnel regarding State-based FACE reports, please use information listed on the Contact Sheet on the NIOSH FACE web site Please contact In-house FACE program personnel regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.

Back to Minnesota FACE reports

Back to NIOSH FACE Web

Page last reviewed: November 18, 2015
Content source: National Institute for Occupational Safety and Health