

Fatality Assessment and Control Evaluation Project

Public Health

KY FACE #97KY019

9 May 1997

To: Carl Spurlock, Ph.D., Director, Kentucky Injury Prevention and Research Center

From : Ellyn Moon, M.A., Field Investigator, KY FACE Project

Subject: Farmer Killed when Tractor Overturns on Embankment

SUMMARY

A 44-year-old cattle farmer was killed when the tricycle tractor he was operating overturned. As was his usual practice, the victim had backed the tractor out of the shed near his home, turned to the right and was driving forward, down the embankment to the road which led to the highway. His cattle barn and pasture were located a short distance from his house (1-2 miles), and he regularly drove the tractor there to tend the cattle. On this day, however, the tractor flipped as he came over the embankment, rolling onto the victim. He died at the scene. In order to prevent similar fatalities, the FACE investigator recommends:

- Older tractors should be retrofitted with rollover protective structures (ROPS) and seatbelts.
- Front-end counterweights should be used to improve traction and stability.
- Tractor operators should take terrain into consideration when performing any operation, and make adjustments as necessary to accommodate to it.

INTRODUCTION

On March 9, 1997, a 44-year-old male was killed when he was crushed in a tractor rollover incident. KY FACE was notified of the incident on March 10 and an investigation was initiated.

A FACE investigator traveled to the site of the incident on March 19, 1997. An interview was conducted with the county coroner who handled the case. Photographs of the scene and the equipment involved in the incident were made, as well as measurements of the area. A copy of

the death certificate was obtained.

INVESTIGATION

The victim in this case was a 44-year-old male who had been a full-time cattle farmer and a respected member of his community. He was in good health, and did not have a history of prior injury incidents.

The tractor was an IH Farmall Model M tricycle, manufactured between 1939 and 1952. The four-cylinder engine was gasoline powered. The tractor was not equipped with a rollover protective structure (ROPS) or a seatbelt. There were no front-end counterweights. The rear tires were about two-thirds fluid-filled. Weight of the tractor was more than 5000 pounds.

The victim was proud of his restored tractor. He kept it inside a shed at his home, and regularly drove it the 1-2 miles down the highway to the barn and pasture where his cattle were kept. On the day of the incident, the weather was clear and cool. The ground was damp from recent rain, but not muddy. The area in front of the shed and the embankment were mostly packed dirt, with some small patches of grass and scattered dead leaves. The victim backed the tractor out of the shed and turned to the right, toward the six-foot embankment which led to the private road. The slope of the embankment was approximately 15 degrees. As he started down, he again turned the tractor to the right, angling toward the private road which would lead him to the highway. When he did so, the tractor rolled over, crushing the victim. His wife, who was in the house, discovered him beside the tractor and called out to a neighbor for help. (There was no telephone in the victim's home.) The neighbor was an emergency medical services (EMS) worker who had a two-way radio; he called the local EMS office, and workers were on the scene within minutes. They found no vital signs, however, and placed a call to the coroner, who estimated the time of death at 11:50 a.m.

CAUSE OF DEATH

The cause of death as listed on the death certificate was "massive trauma/crushing to the head, fractures of skull and neck vertebrae." No autopsy was performed.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Older tractors should be retrofitted with rollover protective structures (ROPS) and seatbelts.

Discussion: In this case, the IH Farmall Model M tractor was manufactured between 1939 and 1952; a commercial ROPS kit is available for it from Saf-T-Cab for approximately \$1192.00. ROPS and seatbelts protect a tractor operator by creating a "zone of protection." Whenever possible, operators should reserve the use of non-ROPS-equipped tractors for safer work areas and/or activities. Since 1985, as a result

of voluntary agreements among tractor manufacturers, virtually all new tractors sold in the US have been equipped with ROPS and seatbelts. Many tractor manufacturers are currently offering ROPS retrofit kits at cost to encourage owners of non-ROPS-equipped tractors to have them installed.

Recommendation #2: Front-end counterweights should be used to improve traction and stability.

Discussion: Counterweights can improve tractor stability, and are particularly important on tricycle-type tractors. While it is not possible to say that they would have prevented a rollover in this case, they are always worthwhile safeguards.

Recommendation #3: Tractor operators should take terrain into consideration when performing any operation, and make adjustments as necessary to accommodate to it.

Discussion: In this case, the victim had driven the tractor over the embankment numerous times in the past without incident. However, a tricycle tractor is more dangerous to operate on a slope and when turning than a tractor with widely spaced front wheels, and on this occasion the tractor overturned.