

# Fatality Assessment and Control Evaluation Project

Public Health

KY FACE #97KY093

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TO: Carl Spurlock, Ph.D., Director, Kentucky Injury Prevention and Research Center, and Epidemiologist, Kentucky Department for Public Health

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SUBJECT: Farmer Killed in Tractor Rollover

## SUMMARY

A 44-year-old male farmer (the victim) was killed when his tractor rolled over into a ditch. He had been driving the tractor, pulling a rotary mower, on a public road that borders his farm. As he came down a hill, the rotary mower began to weave and eventually the tractor flipped over into a ditch. Because of the deteriorated condition of the tractor the connection between it and the rotary mower was broken so that when the tractor turned over, the mower remained upright. Although a passing motorist pulled the tractor off the victim with his truck immediately following the rollover, the victim died at the scene. In order to prevent similar occurrences, the KY FACE investigator recommends that:

- *equipment be maintained in good working order; and,*
- *older tractors be retrofitted with rollover protective structures (ROPS) and seatbelts.*

## INTRODUCTION

On September 1, 1997, a 44-year-old male farmer was killed in a tractor rollover. KY FACE was notified of the incident by the county coroner on September 2, and initiated an investigation. On September 25, 1997, a KY FACE investigator traveled to the site to interview the county coroner who handled the case. There were no witnesses to the event. Details and photographs of the incident were shared by the coroner, however. He had arrived on the scene minutes following the

event, and was the only person available who had knowledge of the circumstances.

The victim had been a full-time farmer all his life. He lived alone and took care of the tobacco farm by himself. He was in good health and did not have a history of prior injury incidents.

The tractor was a Ford 3000 manufactured about 1973. It was not equipped with a rollover protective structure (ROPS), a seatbelt, or counterweights. The rear tires were partially fluid-filled. One of the front tires was a combine tire rather than a tractor tire. Front wheels were wide-spaced. The bolts were loose on the steering mechanism to the front axle. A piece of pipe, of the type used to jack up ceilings inside buildings, substituted for an exhaust pipe. The pins on either side of the receiver for the hitch had been lost and replaced with soft bolts that would only stay in place for a short time when tested by the coroner immediately following the incident. Due to breakage, nothing remained to hold the bolts. A bucket full of bolts was found at the scene, indicating that the victim had carried extra bolts to continually replace those lost.

## INVESTIGATION

On the day of the incident the weather was sunny and warm. The roadway and the ground were dry. The victim was driving down a relatively steep slope on the paved public road that bordered the back side of his farm. He was pulling a rotary mower that was 6-7 feet wide. Although there were no witnesses to the incident, the following represents the consensus of opinion of those who arrived immediately afterward, including the county coroner. It appeared that the bolts that secured the mower to the tractor had worked their way loose as the mower weaved back and forth on the downhill slope. The oscillation of the mower may have caused the tractor to flip over into the ditch; or it may have caused a tractor wheel to drop off the side of the road, resulting in the rollover. As the tractor rolled over, the remaining bolts dropped out, leaving the mower upright and totally detached from the tractor. The right rear wheel of the tractor came to rest on the victim's chest. A passing motorist stopped, attached a chain to the rear of his pickup truck, and pulled the tractor off the victim. A 911 call was placed from a nearby house, but when emergency medical services (EMS) workers arrived, they were unable to detect signs of life and summoned the coroner. The victim was pronounced dead at 10:15 a.m.

## CAUSE OF DEATH

The cause of death was listed as traumatic asphyxia due to compression of trunk. No autopsy was performed.

## RECOMMENDATION/DISCUSSION

*Recommendation #1: Equipment should be maintained in good working order.*

*Discussion #1: The equipment involved in this incident was in very poor overall condition. The poor connection between the tractor and the rotary mower allowed the mower to oscillate,*

*probably contributing to the eventual rollover.*

**Recommendation #2:** *Older tractors should be retrofitted with rollover protective structures (ROPS) and seatbelts.*

**Discussion #2:** *Had the tractor been equipped with a ROPS and a seatbelt, the operator could have been kept in the "zone of protection" provided by the ROPS. The tractor could have rolled over, but the operator probably would have survived. There is a ROPS-retrofit kit available for the tractor in this case, a Ford 3000 manufactured around 1973. Many dealers now offer ROPS-retrofit kits at cost. Virtually all new tractors sold in the United States since 1985 have been equipped with ROPS and seatbelts, as a result of voluntary agreements among tractor manufacturers.*

## REFERENCES

Centers for Disease Control and Prevention. Public health focus: Effectiveness of rollover protective structures for preventing injuries associated with agricultural tractors. *MMWR* 42(03), 57-59, 1/29/93.

Centers for Disease Control and Prevention. Use of rollover protective structures — Iowa, Kentucky, New York and Ohio, 1992-1997. *MMWR* 46(36), 842-845, 9/12/97.

### *Endnote*

*Agricultural fatalities are a critical issue in the Commonwealth of Kentucky, where the rate is three times the national rate.<sup>1</sup> Contributing factors are complex. Perhaps most important, the mean farm income is less than \$14,000.<sup>2</sup> As a consequence many farms are unable to purchase new equipment and/or upgrade or maintain their old equipment. Additionally, Kentucky's hilly terrain creates hazardous situations for farmers, increasing the need for ROPS- and seatbelt-equipped tractors. Also, it is not unusual for Kentucky farmers to continue farming into their 80s and 90s; operating tractors and other heavy equipment is a particularly hazardous activity for older persons. The same is true for adolescents, who often help out on farms by driving tractors, employment that is specifically prohibited by Child Labor Laws, although family farms are exempt. Moreover, economics is the compelling factor when farmers must work other, often full-time, jobs in order to make ends meet. This results in time constraints and higher levels of stress and fatigue. Compounding these problems, because farmers usually work alone most injury events are unwitnessed, making it less likely that victims will receive the immediate medical attention that could save their lives.*

<sup>1</sup>US Dept of Labor, Bureau of Labor Statistics, *Census of Fatal Occupational Injuries*, 1994.

<sup>2</sup>KY Department of Agriculture, unpublished data, 1997.