

TO: Director, National Institute for Occupational Safety and Health

FROM: Iowa FACE Program

SUBJECT: Farmer slips while climbing into tractor and is run over and killed -- Iowa.

SUMMARY

A 76-year-old farmer, working alone, was killed when his tractor ran over him. He was combining corn and had just hooked up a grain wagon to his tractor. While climbing into his tractor cab, he apparently slipped and reached out accidentally grabbing the gear shift lever in the cab, jamming the lever into first gear. The tractor lurched forward and the farmer fell off the steps of the tractor and was run over by the left rear wheel of the tractor, killing him instantly. The tractor had been left in neutral and not in park while the farmer hooked up the wagon. From the neutral position it was easy for the man to jam the lever into first gear without using the clutch.

It was quite muddy that day and the farmer was wearing a pair of old tennis shoes which may have been a factor in the accident. The tractor continued moving forward in first gear and crashed into other grain wagons at the edge of the field. The victim was found by a farmhand, dead from obvious head injuries.

RECOMMENDATIONS following our investigation were as follows:

- 1. *Tractor transmissions should always be put in park before dismounting to hook up equipment or make adjustments.*
- 2. *Control levers should have proper knobs on their ends to facilitate comfortable movement.*

INTRODUCTION

In October 1995, a 76-year-old Iowa farmer was killed when he was run over by his tractor. The Iowa FACE program became aware of the incident on November 13 and began an investigation. After harvest the involved tractor was put in storage for the winter and we chose to delay our site visit until warmer weather. Other sources of information were the medical examiner's report and the police report which contained several photographs.

The victim was a retired custodian and a lifelong farmer, working his small grain farm with the help of one farmhand, who had been working part-time for the last 15 years. The farm was 300 acres of row-crop soybeans and corn. The victim was in excellent health and shared all work duties and machine maintenance with his single employee. He was very experienced with all his farm machinery and was aware of farming dangers. There was no written safety procedures

or training at this small farm, but all training was task-specific and on-the-job.

INVESTIGATION

The victim was working alone harvesting corn with a combine, then hauling the wagons of grain in from the field. He was found dead not far from the combine, face down in the mud, with muddy tire marks along his entire body and back. The tractor itself was found some distance ahead, having crashed into other grain wagons at the edge of the field. The tractor was not running when it was found, although the battery was smoking and the ignition was still on. It is not known which gear the tractor was in when it was found.

It appears the farmer had just finished filling a wagon with grain, then left the tractor running in neutral while left the cab to hook up the wagon. Then he apparently slipped while mounting the tractor cab, grabbing onto anything in front of him. Unfortunately he grabbed on to the gearshift lever, easily jamming it into first gear, causing the tractor to lurch forward, knock him out the cab door, then run over him.

During our site visit we tested this theory while the tractor was running in neutral, and found it quite easy to jerk the tractor into first gear without using the clutch pedal. The first gear position was located to the top and left of the cab (from the driver's position), the natural place it would go if someone slipped while climbing into the cab from the left side. It was evident that one could easily lose balance if the tractor lurched forward, and fall off the tractor steps in front of the left rear tire. Then the tractor could easily continue forward in first gear.

The field where the farmer was working was flat, and it was quite muddy from recent rain, so it is likely that the farmer did indeed slip on the tractor steps. While the tractor was idling still, there was no observable vibration of the gearshift lever, so we easily ruled this out as a causative factor. The gearshift lever did not have any type of knob on its end, and it felt uncomfortable when it was pushed forward from neutral, which is the direction required for park. If the operator was not wearing gloves, this gearshift lever may have caused sufficient discomfort to discourage routine use of park. Then neutral would be an easy alternative, especially on level ground. The farmhand states this knob has been on and off the gearshift lever for the last year, and caused no problems with shifting.

The victim was last seen at 2:00 PM by his wife. He was not found until 4:00 PM. that same day. When found he was lying face down in the mud and had obvious head injuries and significant loss of blood. Photographs were taken by the County Sheriff and reviewed by FACE investigators prior to this report.

CAUSE OF DEATH

The medical examiner's report listed the cause of death as "crush of head" due to tractor run-

over. A contributing factor was the slippery mud present that day. No autopsy was performed.

RECOMMENDATIONS / DISCUSSION

Recommendation #1 *Tractor transmissions should always be put in park before dismounting to hook up equipment or make adjustments.*

Discussion: Once a tractor transmission is put in park, it is impossible to move the gearshift lever without use of the clutch. This is an important safety feature since farmers are frequently climbing in and out of tractors in all types of weather. They frequently have muddy feet and can easily slip on tractor steps or catch clothing on ends of protruding levers. Park also secures the tractor on any hilly terrain and should be used at all times whenever the operator leaves the cab.

Recommendation #2 *Control levers should have proper knobs on their ends to facilitate comfortable movement.*

Discussion: The gearshift lever may have been left in neutral because of the minor inconvenience of putting the transmission in park. Lack of a suitable gearshift knob may have contributed to this. These are minor things, but the combination of them may be enough to discourage putting the tractor in park while on level terrain.

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Fatality Assessment & Control Evaluation Program (FACE)

The University of Iowa, in conjunction with the National Institute for Occupational Safety and Health (NIOSH), is investigating the causes of work-related fatalities in the State of Iowa. FACE is a surveillance program that identifies all occupational fatalities, conducts in-depth, on-site investigations on specific types of fatalities, and makes recommendations for employers and farmers to help prevent similar fatal accidents in the future.

Iowa is a major farming state, and therefore the Iowa FACE Program deals with many occupational deaths on the farm. It is a very hazardous profession that claims hundreds of lives nationally every year. We publish detailed reports that are disseminated to key agricultural leaders in Iowa who share our concern for the safety of farmers. To reach and effectively communicate with this independent and vulnerable group is a worthy challenge here in Iowa.

NIOSH funded state-based FACE Programs include: Alaska, California, Colorado, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, Wisconsin, and Wyoming.



Additional information regarding this report or the Iowa Face Program is available from:

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