

WISCONSIN FACE INVESTIGATION

SUBJECT: Youth Killed in Tractor Rollover While Moving Large Hay Bales

SUMMARY

On September 15, 2002, an 11 year-old youth died when he was pinned under the tractor he was driving. The victim was working by himself moving large round bales of hay from a field into a row so they could be loaded later. When he didn't return to the farm at the expected time, his brother went to the field and found the victim under the tractor. The brother went to the neighbor's farm about 1 mile away and called for emergency services. He also contacted his parents. Immediately the ambulance crew contacted a larger medical system's medical flight 30 minutes away and they arrived within 5-10 minutes after the call from the victim's brother. The victim was pronounced dead at the scene. FACE investigators concluded that, to help prevent similar occurrences, farmers and employers should:



Figure 1. Tractor involved in incident

- **Provide tractors equipped with rollover protective structures (ROPS) and seat belts.**
- **Ensure that youth are trained in and are aware of the potential hazards associated with operating farm machinery through a formal tractor safety training program intended for youth.**
- **Ensure that equipment utilized by youth is appropriate for the size and age of the individual who will be using it.**
- **Provide continuous adult supervision for inexperienced or youth workers.**
- **Know and comply with federal and state child labor laws that are related to employment of youths in an agricultural setting.**
- **Use attachments that are designed to handle large bales, such as grapples and rear-end bale spears.**

INTRODUCTION

On September 15, 2002, an 11 year-old youth died when he was pinned under the tractor he was driving. On September 17, 2002, Wisconsin FACE investigators learned about the incident via the newspaper. The death certificate, the sheriff's report and the coroner's report were reviewed. An investigation was initiated. On August 11, 2003 the FACE director and the field investigator, traveled to the farm where the incident occurred. The victim's mother and both brothers shared information about the victim and the incident and showed the FACE staff the tractor that the victim used.

This family had been farming at this location for 20 years. The family owned 1200 acres and tilled 856 in addition to renting 300 acres. They raised soybeans as their primary crop, but corn and hay were also grown. At the time of the incident, they milked 150 dairy cows. The farm was owned and operated by the parents and the three sons helped with some of the farming and chores. The two older sons, ages 13 and 15, both completed a formal tractor safety course at age 12. The entire family attended farm safety meetings that feature new equipment and safety devices in the state, and attended national safety conferences. The sons learned about their equipment and safety from their father, in FFA at school, from equipment dealers and from other farmers. In the 20 years that the parents had been farming, there had been no other serious injuries.

The farmers owned several new tractors and skid steer loaders in addition to some older tractors. The family bought a used 1969 model 4020 John Deere tractor in 1985 and changed the narrow-set front wheels to wide-set wheels. This was the only tractor without ROPS that the family owned, but it was the only tractor that could be fitted with the bale spear attachment to move large round hay bales. The family owns two narrow set tractors, but used them as "show" tractors. The family used six two-way radios to communicate with family members while they worked within a 30-mile radius.

The victim learned about the equipment and safety from his parents and older brothers. He was looking forward to taking the tractor safety training course as soon as he was eligible at age 12, and had successfully completed the hunter safety training. His "sand box" play included dividing the box into plots and planting crops with toy equipment and watering them. He talked often about becoming a farmer. He took motors apart and asked his father to explain what the parts were and why they didn't work. His first farm chores consisted of feeding the calves. His father taught him how to drive the tractor, and by the age of 10 the victim was backing the tractor while the family loaded bales into a semi truck. The victim was 5'4" and 130 pounds, and was eager to share in the work on the farm.

INVESTIGATION

On this farm, round bales were initially left where they were made in the field. Then a bale spear would be attached to the rear of the tractor and the spear would be poked into the bale to be transported to a different area of the field. The bales were lined up so later they could be easily loaded into a semi-truck and transported to the farmyard.

On the day of the incident, the victim went out to the field to move the large round bales of hay into a row. He checked his radio before he went out into the field. He left around 11:00 A.M. to work by himself in a field about 5-8 miles from home. In the field, he drove the 1969 model John Deere 4020. Later he used the radio to call home and asked his mother for sandwiches. She took sandwiches out to the field about 3:00 PM and sat with him while he ate lunch. She told him he could quit working, but he wanted to work until dusk. He had lined up about 20 bales that day. At dusk the victim's brother went to get him and found him unresponsive and pinned underneath the tractor. The brother immediately went to the neighbor's about one mile away and called 911 and then used the radio to contact his parents. EMS responded immediately and contacted the air ambulance which arrived within 10-15 minutes. CPR was discontinued and the victim was declared dead at the scene.

CAUSE OF DEATH

The cause of death was determined to be massive head injury and severe chest trauma.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Provide tractors equipped with rollover protective structures (ROPS) and seat belts.

Discussion: The tractor involved in this incident was manufactured in 1969 when ROPS were not required. These safety features were not required until 1976 when OSHA standard 1928.51 went into effect. Though the standard did not require the retrofitting of all tractors manufactured before 1976, ROPS on tractors would greatly enhance the safety of the operator. The tractor involved in this incident was not equipped with a ROPS. For a ROPS system to be effective, a seat belt must be used at all times. If a seat belt is not worn, the operator could be crushed not only by the tractor, but by the ROPS as well if the tractor overturned.

Recommendation #2: Ensure that youth are trained in and are aware of the potential hazards associated with operating farm machinery through a formal tractor safety training program intended for youth.

Discussion: All workers who operate farm machinery must be trained to recognize the hazards associated with farm machinery and how to react in dangerous situations. In the state where the incident occurred, youth age 12 and older are eligible to take tractor and farm equipment safety training to ensure their awareness of potential hazards associated with operating farm machinery while operating a tractor.

Recommendation #3: Ensure that equipment utilized by youth is appropriate for the size and age of the individual who will be using it.

Discussion: It is important for anyone operating machines and equipment to demonstrate developmental skills and muscular strength to enable them to react quickly and efficiently in changing situations. Each year, more than 100 children are killed and 33,000 seriously injured on farms and ranches in the United States. Another 20 children are killed in agricultural-related fatalities in Canada each year. Unintentional injury can occur when adults and children mistake physical size and age for ability, and underestimate levels of risk and hazards.

Recommendation #4: Provide continuous adult supervision for inexperienced or youth workers.

Discussion: It is important that a responsible adult be in the immediate vicinity of inexperienced and youth workers to observe and teach throughout the task. Children learn a job by *seeing* how it is done. Children cannot easily remember job skills from situation to situation or day to day. As children are becoming more independent from their families, a child's confidence and desire for independence does not necessarily reflect their ability to complete the job. Children require close supervision because they often lack a sense of awareness about their surroundings.

Note: The victim was closely supervised by his parents while he was learning to drive the tractor on the family farm.

Recommendation #5: Know and comply with federal and state child labor laws that are related to employment of youths in an agricultural setting.

Discussion: Employers of youth may be subject to laws of state and federal authorities and must know and meet the provisions of all pertinent requirements. The Fair Labor Standards Act provides standards for employment of youth in certain enterprises. However, the Child Labor Provisions specifically exempt children who work on their family's farm from the protection of the Act. The state where the incident occurred also exempts family farms from child labor requirements.

Recommendation # 6: Use attachments that are designed to handle large bales, such as rear-end bale spears and grapples.

Discussion: Moving a large bale with a rear-end bale spear attachment makes the tractor more stable, does not get in the way of the tractor's headlights, and allows the operator a clear view. Front-end loaders equipped with grapples can also be used to stack, load or move bales. Do not raise or lower loaders while the tractor is moving. The tractor involved in the incident was properly equipped with a rear-end bale spear attachment.