

FACE INVESTIGATION

SUBJECT: Farmer Dies of Entanglement in Corn Picker/Husker

SUMMARY: A 77-year-old male farmer (the victim) died after becoming entangled in a corn picker/husker. He had been harvesting corn from his field using a tractor equipped with a power take-off (PTO) that powered the picker/husker. The picker/husker was equipped with guards over some sprockets and chains on the sides and back of the machine. However, other operating parts of the machine were unguarded. He got off the tractor while the tractor was running with the PTO engaged, and was positioned near the sprockets, drive chains, and a revolving shaft of the picker. His clothing apparently was caught by the shaft and he was pulled into the operating machine. Earlier in the afternoon his wife had been working in the field with him, driving a truck that he loaded with the husked corn. She left the field after he indicated he did not need her help then, and returned to their house where she had a view of his work area. About one half hour later she noted that the tractor was stopped and she returned to the field to investigate. She found the victim entangled in the picker/husker, shut off the PTO, and went to the house to summon emergency services. EMS responders arrived and disengaged the PTO from the picker/grinder shaft to free the victim from the machine. The victim was pronounced dead at the scene. The FACE investigator concluded that, to prevent similar occurrences, farm machine/equipment operators should:

- ! observe and follow all applicable safety precautions when operating machinery driven by tractor power take-off equipment, including disengaging the PTO and stopping the tractor engine before approaching the machinery.
- ! identify machinery/equipment components that allow contact with a point of operation, and ensure that appropriate guards, recommended by the manufacturer or dealer, are installed.

INTRODUCTION:

On December 13, 1994, a 77-year-old male field corn farmer died of injuries from becoming entangled in a corn picker/husker. The Wisconsin FACE field investigator received notification of the death on January 10, 1995, from the Worker's Compensation Division of the Department of Industry, Labor and Human Relations. The investigator conducted a site visit on April 20, 1995, and interviewed the victim's wife. The sheriff's report and photographs, the coroner's report, death certificate, and the state climatologist's report were reviewed during the investigation.

The victim had been a farmer for most of his life and had learned farming through on-the-job experience. He had owned and operated the farm where the incident occurred for about 22 years, raising corn as a cash crop for more than 12 years. His wife helped with the farm activities, but the farm had no additional employees. He had also worked at a farm machine dealership where he repaired and maintained farm implements. There were no written safety policies or procedures for the farm activities.

INVESTIGATION:

The farm property had storage buildings for tractors and equipment near the home, with the crop fields surrounding the farmyard and farmhouse. The weather was clear and dry on the day of the incident, with a high temperature of 26E and a low of 14E and sunset at 4:13 P.M. The soil in the cornfield was frozen, with patches of snow and ice in the area where the incident occurred.

The farmer owned all of the equipment that he used in harvesting, transporting and storing corn. He was using a tractor equipped with a PTO that powered the picker/husker, and he also had attached a grain wagon behind the picker. He had purchased the used, 17-year-old corn picker/husker from a farm equipment dealer 12 years before the incident, and had used it each harvesting season since then. At the time of purchase, it was equipped with metal housing guards over portions of the sprockets and chains on the sides and back of the machine that were still in place at the time of the incident. Exposed sprockets, chains and a shaft were present on the left side and on the recessed front portion of the picker/husker (Figure 1).

On the morning of the incident, the victim did routine farm chores. He wore cotton work gloves, insulated rubber boots, and work pants and a work shirt, covered with an insulated, one piece coverall. He ate lunch around noon, then took a short nap while his wife drove to town to purchase tractor oil. When she returned, he drove the tractor and equipment to the corn field and his wife followed him in the truck. The farmer drove the tractor with the picker/husker around the field for several turns to test the firmness of the soil and the operation of the machinery, then told his wife that he could continue working without her assistance. She returned to the farmhouse, where she had a partial view of the cornfields.

The incident was unwitnessed, but it is assumed the victim got off the tractor while the tractor was running with the PTO engaged, and was positioned near the recessed front portion of the picker/husker close to the rotating shaft (Figure 2). Soil beneath the picker/husker was covered with icy patches, possibly causing the victim to slip and fall into the operating parts of the machine. His coverall apparently was caught by the shaft, pulled partially from his body, and drew the victim toward the shaft and the gear chains. His wife noted that the tractor was stopped and she returned to the field to investigate. She found the victim entangled in the picker/husker, shut off the PTO, and went to the house to summon emergency services. EMS responders arrived and disengaged the PTO from the picker/grinder shaft to free the victim from the machine. The victim was pronounced dead at the scene.

CAUSE OF DEATH: The coroner noted the cause of death as multiple external and internal injuries with neck fracture at C-7.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Farm machine/equipment operators should observe and follow all applicable safety precautions when operating machinery driven by tractor power take-off equipment, including disengaging the PTO and stopping the tractor engine before approaching the machinery.

Discussion: In this incident, the victim was operating a corn picker/husker driven by a PTO, and became entangled and died. When operating PTO driven equipment, the PTO should be disengaged and the tractor engine shut off before dismounting or leaving the tractor to approach the equipment. These precautions provide the operator protection from contact with the moving machine parts and from the unexpected engagement of power when an operator is cleaning, servicing, adjusting, or repairing the equipment. If the PTO had been disengaged and the tractor engine stopped before the victim approached the picker/husker, this fatality would have been prevented.

Recommendation #2: Farm machine/equipment operators should identify machinery/equipment components that are PTO driven, and ensure that appropriate guards, recommended by the manufacturer or dealer, are installed.

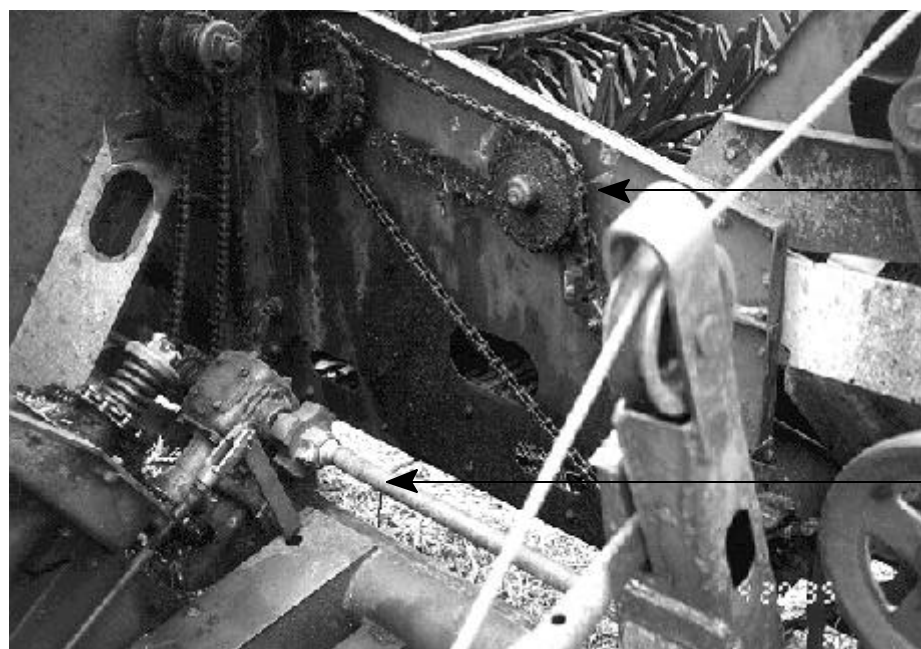
Discussion: In this case, metal housing guards had been installed over portions of the sprockets and chains on the corn picker/husker, but other moving sprockets, chains and shafts were exposed during the equipment's operation. Unguarded moving belts, sprockets, chains, and rotating shafts expose workers to entanglement resulting in injuries and even death. If retrofit guards had been installed over the exposed shaft, the incident may have been avoided. To prevent installation of an inadequate guard, machine/equipment owners should consult with the manufacturer or dealer before installing any guard.

Figure 1



See top view (Figure 2)

Location of victim



Chain and sprockets

Shaft

Figure 2