



# The National Institute for Occupational Safety and Health (NIOSH)



## Farmer Dies After Becoming Entangled In Hay Baler

DATE: December 14, 1994

MN FACE Investigation 94MN04401

### SUMMARY

A 68-year-old male farmer (victim) died from injuries he sustained when he became entangled in the rollers of a large round hay baler. He left his farm yard, with the tractor and baler, about 2:00 p.m. on the afternoon of the incident. At approximately 4:00 p.m., a motorist drove past the field where the victim worked and noticed smoke coming from the baler. Upon investigation, he found the tractor engine running at full throttle and the PTO engaged but the baler was not operating. The motorist noticed that the victim had been pulled into the front of the baler and was trapped between two steel rollers above the baler pickup mechanism. The motorist climbed into the tractor cab and shut off the engine. He attempted to remove the victim from the baler but was unable to free him. The baler suddenly burst into flames and the motorist had to retreat from the intense flames. He immediately used his cellular telephone and placed a 911 call. When local fire and emergency rescue personnel arrived, they extinguished the fire and the victim was pronounced dead at the scene. MN FACE investigators concluded that, in order to reduce the likelihood of similar occurrences, the following guidelines should be followed:

- operators should observe and follow all applicable safety precautions when operating PTO-powered equipment; and
- operators should never reach into any machine while it is running.

### INTRODUCTION

On August 17, 1994, MN FACE investigators were notified of a farm work-related fatality which occurred on August 15, 1994. The county sheriff's department was contacted and releasable information was obtained. Information obtained included a copy of their report and copies of their photos of the incident site. A site investigation was not conducted by MN FACE investigators.

### INVESTIGATION

The victim was working alone baling hay on the day of the incident. He was using a PTO-powered hay baler pulled by a farm tractor. The baler was an older unit which produced large round bales. Baler features included a pickup mechanism for picking the hay off of the ground and two steel rollers for pulling it into the baler chamber. It was not known whether he possessed a manufacturer-supplied operator's manual for the baler.

The victim's wife stated that her husband left the farm yard, with the tractor and baler, about 2:00 p.m on the afternoon of the incident. At approximately 4:00 p.m., a motorist drove past the hay field where the victim worked and noticed smoke coming from the baler. Upon investigation, he found the tractor engine running at full throttle and the PTO engaged but the baler was not operating. The baler mechanism probably stopped after the victim became entangled which may have caused a safety shear pin to break. The motorist noticed that the victim had been pulled into the front of the baler and was trapped between the steel rollers above the baler pickup. The motorist climbed into the tractor cab and shut off the engine. He attempted to remove the victim from the baler but was unable to free him. Suddenly the baler burst into flames, and the motorist had to retreat from the burning baler. He immediately used his cellular telephone and placed a 911 call. Local fire and emergency rescue personnel arrived approximately 15 to 20 minutes later. They extinguished the fire, and the victim was pronounced dead at the scene.

Because of the fire and the lack of witnesses, it could not be determined why the victim dismounted the tractor without disengaging the PTO. After getting off of the tractor, he may have been manually tossing hay into the baler, attempting to unplug the feed rollers, or trying to service parts of the baler while it was running.

## CAUSE OF DEATH

The cause of death listed on the death certificate was trauma secondary to farm machinery accident.

## RECOMMENDATIONS/DISCUSSION

**Recommendation #1: Operators should observe and follow all applicable safety precautions when operating PTO-powered equipment.**

**Discussion:** When operating PTO-powered equipment, the operator should observe and follow all applicable safety precautions. The PTO should be disengaged and the tractor engine shut off before dismounting from the tractor for any reason. These precautions provide the operator three-way protection: (1) from shaft rotation; (2) from moving machine parts; and (3) from the unexpected engagement of power by another person when an operator is cleaning, servicing, adjusting, or repairing the equipment. Moving machinery parts present hazards which may result in entanglement in the equipment. The operator should wait for all machine movement to stop before cleaning, servicing, adjusting, or repairing the equipment. If the PTO had been disengaged and the tractor engine stopped before the victim dismounted from the tractor, this fatality probably would have been prevented.

**Recommendation #2: Operators should never reach into any machine while it is running.**

**Discussion:** Virtually all machines are designed to perform specific tasks or processes. These processes may consist of a series of high speed operations such as grinding, cutting, crushing, and packing of a material by the machine. These operations require a large amount of energy or power which is transferred from a motor or engine to the machine. This transfer of power is accomplished through various mechanisms including rotating shafts and/or a combination of belts and pulleys. As a result of rotating shafts and components while machines are running, workers are exposed to hazardous situations if they attempt to service, unplug, or feed material into a machine while it is running. For example, large round hay balers like the one involved in this incident, have high speed feed rollers that quickly pull the crop from the pickup mechanism and force it into the baling chamber. If hay is manually tossed into a baler while it is running, the feed rollers may suddenly pull a worker's hands and arms into the baler before the worker can react and let go of the hay. If the baler had been stopped before the victim attempted to perform any work near the front of it, this fatality probably would have been prevented.

## REFERENCES

1. Agriculture Safety, Fundamentals of Machine Operation, 1987, Deere & Company, Moline, Illinois, Third Edition.

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