A farmer was crushed when a round bale of hay, weighing 1,500 - 1,800 lbs., toppled off of an agricultural tractor equipped as a front-end loader with a fork attachment.

Investigation: #99TX05901
Release Date: 1999

SUMMARY:

On September 9, 1998, a 79 year-old farmer (the victim) was crushed to death when a round bale of hay weighing 1,500 - 1,800 lbs., toppled off a tractor's front forks. The victim was in the process of putting hay out for cattle. He positioned the forks underneath the round hay bale instead of sticking the forks into the end of the hay bale. As he raised the hay bale, the victim apparently moved the control lever into the detent position which held the control lever in place. This caused the hay bale to continue to rise to a point where it fell off the forks and landed on the victim as he sat in the operator's seat.

The TX FACE investigator concluded that to reduce the likelihood of similar occurrences, employers should:

**** use the attachment designed for the type of hay bale being lifted.***

**** install blocks in the control lever mechanism that would prevent the control lever from being pushed/pulled into the detent position.***

INTRODUCTION

On September 9, 1998, a 79 year-old farmer (the victim) was crushed to death when a round bale of hay weighing 1,500 - 1,800 lbs., toppled off the forks of an agriculture tractor equipped as a front-end loader with a fork attachment. The TX FACE program officer was made aware of the fatality by a newspaper article. On February 24, 1999, the TX FACE program officer visited the farm and met with the son of the victim. Pictures were taken of the tractor with the front-end loader adapter with the forks' attachment used on the day of the incident. A sheriff's department report was obtained. The justice of the peace was contacted and a report was obtained.

The incident occurred on a family-run farm. The victim was working by himself when the incident occurred. The victim had been farming for 62 years.

INVESTIGATION

The victim was using a tractor equipped as a front-end loader with a fork attachment. He had borrowed the tractor to put out round bales of hay. Prior to distributing the hay, the victim and his partner changed the attachment normally used to lift round bales of hay to one designed for handling square bales of hay. This attachment was going to be used the following day to unload square hay bales. The forks were 44 inches long and 39 inches apart. They were round and came to a point so they could be stuck into the side of a square bale of hay. The forks were located on the bottom of the fork attachment at each corner. The face of the fork attachment was 42 inches wide and 35 inches high.

The fork attachment the victim normally used for round bales had forks similar to those on a forklift along with another fork designed to pierce the center of a round bale of hay. This fork would keep the hay bale from rolling off the bottom two forks.

Due to a drought which caused a shortage of hay, the victim had purchased hay from out of state. The hay, which was to be delivered the next day, was baled in squares. For this reason, the victim and his partner had attached a different set of forks on the tractor. They decided to attach the forks at this time because it was easier to accomplish the task with two people then with only one person. After the new attachment was added, the front-end loader was equipped to unload the square bales the next day.

After changing the fork attachment, the victim decided to put out more hay. He slid the forks underneath a round bale of hay. The control lever used to raise the hay bale apparently stuck in the detent position. When tested after the incident, the lever became stuck three of the five times tested. The bale continued upward to a point where it toppled off the forks and onto the victim who was sitting in the operator's seat. The Justice of the Peace indicated that the victim may have had a heart attach at some point during this series of events.

When the hay bale struck the victim, he had both hands on the steering wheel. The weight of the bale flattened the steering wheel and broke the steering column.

Within 15 minutes of the incident, Emergency Medical Service (EMS) was notified and dispatched at 5:18pm. The son was the first to arrive at the scene and he pushed the bale off the victim. The son started mouth-to-mouth resuscitation and continued until EMS personnel arrived at 5:31 p.m. The victim was flown to an area hospital where he was pronounced dead at 5:47 p.m.

CAUSE OF DEATH

The death certificate stated, "Subject apparently starting having a heart attack which caused a round bale of hay to fall on top of the deceased, breaking his back.

RECOMMENDATIONS/DISCUSSION

***Recommendation #1* - Employers should use the attachment designed for the type of hay bale being lifted.**

Discussion: In this incident, the original forks on the front-end loader were designed for lifting round bales of hay. They were removed and replaced with forks designed to lift square bales of hay. There are distinct differences between the two types of fork attachments. The forks appropriate for round bales are designed with a prong that sticks in the center of the bale. Placing the prong in the center of the round bale prevents the bale from falling off the attachment.

The fork attachment for square bales has forks located at the two bottom corners of the attachment. The forks are stuck into the side of a square bale. When they are stuck in the side of a square bale, the bale will remain on the forks.

Equipment and tools should always be used for the operations for which they were designed.

***Recommendation #2* - Employers should install blocks in the control lever mechanism that would prevent the control lever from being pushed/pulled into the detent position.**

Discussion: Immediately after the incident occurred a family friend operated the control lever. The lever stuck in the detent position three out of five times. On the day of the investigation the victim's coworker demonstrated how the lever remains in the detent position and must be pushed/pulled out of this position.

Blocks would keep the lever from being pushed all the way forward or pulled all the way back into the detent position where it is held in place.