

**DATE:** July 25, 1995

**FROM:** Minnesota Fatality Assessment and Control Evaluation (MN FACE)  
Program  
Minnesota Department of Health

**SUBJECT:** MN FACE Investigation 95MN01301  
Farmer Dies After Large Round Hay Bale Falls on Him

### **SUMMARY**

The victim was working alone at the time that the unwitnessed incident occurred. As a result, this report is based upon information obtained during a telephone interview with the victim's son.

A 70-year-old male part-time farmer (victim) died from injuries sustained when a large round hay bale being moved to a cattle feeding lot fell. The victim used a tractor and loader to move a hay bale into the feeding lot. The tractor was not equipped with a general purpose cab or an enclosed rollover protective structure. The loader bucket was not equipped with a large round bale clamp or bale fork specifically designed to securely hold the bale. The victim tied the bale into the bucket with a 5/8-inch diameter rope. He raised the loader bucket and backed the tractor across the farm yard. As he backed up a slight incline the rear wheels began to spin. The raised bale broke away from the rope which held it in place, tumbled down the loader beams, and struck the victim pinning him in the tractor seat. The victim's wife discovered him shortly after the incident occurred. She called emergency medical personnel who arrived at the scene and freed the victim by moving the bale off of the tractor and the victim. The victim was transported to a local hospital where he died a short time after the incident. MN FACE investigators concluded that, in order to reduce the likelihood of similar incidents, the following guidelines should be followed:

- operators should use attachments on loaders which are specifically designed for the task being performed; and

- tractors equipped with loaders should also be equipped with an enclosed rollover protective structure or a general purpose cab.

## **INTRODUCTION**

On May 11, 1995, MN FACE investigators were notified of a farm work-related incident which occurred on February 28, 1995. A site investigation was not conducted by MN FACE investigators. The county sheriff's department was contacted, and a copy of their initial complaint report was obtained. A detailed report of the incident was not written by the county sheriff's department. The victim's son provided information about the incident during several telephone interviews with a MN FACE investigator.

## **INVESTIGATION**

The victim used a farm tractor and loader to move a large round hay bale into a cattle feeding lot. The bale was approximately 6 feet in diameter and 5 feet long. The victim's son estimated that the bale weighed approximately 850 pounds. The tractor and loader were approximately 18 years old. The two-wheel-drive tractor had a wide front wheel configuration. The tractor was not equipped with a general purpose cab or an enclosed rollover protective structure. It had a large bale spear attached to the three-point hydraulic lift but the three-point lift system was not working. The loader bucket was a general purpose bucket and was not designed for handling large round bales. The loader did not have any mechanical mechanism to securely hold the bale while it was being moved.

The victim tied a bale into the bucket with a 5/8-inch diameter rope. He raised the loader and backed the tractor across the farm yard. As he backed up a slight incline covered with snow, the rear wheels began to spin. At some time, he raised the loader and bale to a height of approximately 8 feet. He may have raised the loader and bale, after the tractor wheels began to spin. This may have been done to increase the weight on the rear wheels by changing the weight distribution between the tractors front and rear wheels. The raised bale broke away from the rope which held it in place, tumbled down the loader beams, and struck the victim pinning him in the tractor seat. The tractor engine was running and the rear wheels were spinning when the victim was discovered by his wife. She called emergency medical personnel who arrived at the scene within a few minutes. They freed the victim by moving the bale off of the tractor. The victim was transported to a local hospital where he died a short time after the incident.

## CAUSE OF DEATH

The cause of death listed on the death certificate was suffocation due to crush injury.

## RECOMMENDATIONS/DISCUSSION

***Recommendation #1:*** Operators should use attachments on loaders which are specifically designed for the task being performed.

***Discussion:*** The bucket used during this incident was a general purpose bucket and was not designed for lifting large round bales. Loader manufacturers build attachments such as bale clamps and bale forks which are specifically designed for lifting large round bales. These attachments hold a bale in a secure, stable position as it is raised or lowered. If a large round bale lifting attachment had been used, this fatality might have been prevented.

***Recommendation #2:*** Tractors equipped with loaders should also be equipped with an enclosed rollover protective structure or a general purpose cab.

***Discussion:*** The tractor involved in this incident was not equipped with any type of enclosed protective structure. If it had been equipped with either an enclosed rollover protective structure or a general purpose cab, the hay bale probably would have been deflected away from the operator. Unsecured or inadequately secured items may fall over the back edge of a loader bucket. The potential of this happening is increased as a loader bucket is raised. If a loader bucket is raised high enough, an unsecured or inadequately secured item may fall over the back of the bucket. It might then tumble down the raised loader and strike the tractor operator. If tractors equipped with a loader were also equipped with an enclosed rollover protective structure or a general purpose cab, large items which fall from the loader bucket might be prevented from directly striking the operator. If the bale had not directly struck the victim, he may not have been injured or may have been less severely injured, and this fatality might have been prevented.

## REFERENCES

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

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