DATE: August 29, 1995

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

SUBJECT: MN FACE Investigation 95MN03201
Farmer Dies After Tractor He was Driving Rolled Over on Him

SUMMARY

The victim was alone at the time that the incident occurred. This report is based upon information obtained during the site investigation interview, an inspection of the incident site, and a review of a written sheriff's department report and copies of their photos of the incident site.

A 37-year-old farmer (victim) died of injuries sustained when the tractor he was driving rolled over on him. The victim was driving a two-wheel drive farm tractor up a hill on a public gravel road. The tractor was not equipped with a rollover protective structure or a general purpose enclosed cab. Tire tracks on the road indicated that the tractor gradually travelled to the right side of the road. The right rear wheel left the road surface and entered a steep ditch on the side of the road. A shallow trench on the road surface apparently was created by spinning of the left rear tractor wheel. The trench in the road surface indicated that the victim may have tried to get the tractor back onto the gravel road. The spinning tractor slid further off the road and overturned 180 degrees to the right and into the ditch. The victim was pinned beneath the rear portion of the tractor. The overturned tractor was discovered by a neighbor who was walking along the road. Emergency medical personnel were called and arrived at the scene shortly after being notified. They removed the victim from beneath the tractor and pronounced him dead at the scene. MN FACE investigators concluded that to reduce the likelihood of similar occurrences, the following guidelines should be followed:

- all tractors should be equipped with a rollover protective structure and a seat belt.

INTRODUCTION

On June 15, 1995, MN FACE investigators were notified of a farm work-related fatality that occurred on June 11, 1995. The county sheriff's department was contacted and releasable information obtained. Information obtained included a copy of their report of the incident and copies of their photos of the incident site. A site investigation was conducted by MN FACE investigators on June 27, 1995. During the site investigation, information concerning the incident was provided by a member of the local emergency rescue squad that was summoned to the scene.

INVESTIGATION

The victim was driving a two-wheel drive farm tractor on a public gravel road. The tractor was approximately 35 years old and was not equipped with a rollover protective structure or a general purpose enclosed cab. It had a narrow front wheel configuration and did not have dual wheels on either rear axle. The tractor did not have any equipment mounted on it nor was anything being pulled by it. The tractor was capable of traveling at a maximum speed of approximately 16-18 miles per hour.

The victim drove south up a hill on a gravel road. The slope of the road at the location where the tractor entered the ditch was approximately 4 degrees or 7 percent. This was determined be dividing the measured vertical drop of the road (1.0 foot) by the measured horizontal distance (15 feet). Tire tracks on the road indicated that the tractor gradually travelled to the right (west) side of the road. The right rear wheel left the road surface and entered the ditch on the west side of the road. The slope of the ditch was approximately 31 degrees or 60 percent. This was determined be dividing the measured vertical drop of the ditch (3.0 feet) by the measured horizontal distance (5 feet).

A shallow trench in the road surface apparently was created by spinning of the left rear tractor wheel. It was approximately four to five inches deep and about the same width as the rear tractor tire. The trench appeared to indicate that the victim may have tried to get the tractor back on the gravel road. The spinning tractor slid further off the road and overturned into the ditch. It overturned 180 degrees to the right and came to rest upside down at the bottom of the ditch. The victim was pinned beneath the rear portion of the tractor.

The overturned tractor was discovered by a neighbor who was walking along the road. Emergency medical personnel were called and arrived at the scene shortly after being notified. The victim was removed from under the tractor. They pronounced the victim dead at the scene and confirmed that

he probably had been dead for several hours before being discovered.

CAUSE OF DEATH

The cause of death listed on the death certificate was suffocation.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: All tractors should be equipped with a rollover protective structure and a seat belt.

Discussion: Preventing death and serious injury to tractor operators during tractor rollovers requires the use of a rollover protective structure and a seat belt. These structures, either a roll-bar frame or an enclosed roll-protective cab, are designed to withstand the dynamic forces acting on them during a rollover. In addition, seat belt use is necessary to ensure that the operator remains within the "zone of protection" provided by the rollover protective structure. Government regulations require that all tractors built after October 25, 1976, and used by employees of a farm owner must be equipped with a rollover protective structure and a seat belt. Many older tractors are in use on family farms and do not have, nor are they required by government regulation to have, such structures to protect their operators in case of a rollover. All older tractors should be fitted with a properly designed, manufactured, and installed rollover protective structure and seat belt. If the tractor involved in this incident had been fitted with a rollover protective structure and a seat belt and if the seat belt had been in use, this fatality might have been prevented.

REFERENCES

1. Office of the Federal Register: Code of Federal Regulations, Labor, 29 CFR Part 1928.51 (b), U.S. Department of Labor, Occupational Safety and Health Administration, Washington, D.C., April 25, 1975.

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