

MIFACE INVESTIGATION: #03MI067

SUBJECT: Farmer Dies When He Was Pinned Between the Tractor Seat and a Tree in a Ditch Near His Soybean Field

Summary

On June 14, 2003, a 57-year-old male farmer was killed when the Belarus tractor, Model 220 he was driving entered a ditch on the north side of a soybean field and he was pinned between the tractor seat and a tree in the ditch. (See Figure 1) The tractor was equipped with a cultivator at the rear and a front-end loader. He may have been moving dirt near the edge of the ditch when he entered the ditch. The tractor entered the ditch and the tractor tipped on its right side into a tree. A family member had lunch with the victim. The family member left to cut the grass in front of the barn and the victim took the Belarus tractor to till the field and nearby garden. The family member saw the victim drive the tractor behind a silo and into the plowed soybean field. When she didn't see him after about a half an hour, she went looking for him. She saw him pinned against the tree in the ditch. Emergency response was called and he was declared dead on the scene. He died from a crushing injury to his chest.



Figure 1. Ditch with tree that was struck by victim

RECOMMENDATIONS

- When mowing or planting, leave a visual cue to identify the edge of drainage ditches or other land depressions.
- If the front-end loader is not to be used for an extended period, the loader should be removed from the tractor if equipped with a “quick detach” loader mechanism.
- Travel with the loader bucket at the lowest possible height.

Key Words: Agriculture,
Machine-Related, Tractor

INTRODUCTION

On June 14, 2003, a 57-year-old male farmer was killed when the Model 220 Belarus tractor he was driving entered a ditch on the north side of this soybean field and he was pinned between the tractor seat and a tree in the ditch. MIFACE learned of this incident from a newspaper clipping. On July 10, 2003, MIFACE researchers visited the incident site, viewed the tractor and implements, and interviewed the victim's spouse. On the day of the MIFACE visit, there was a thunderstorm, therefore, few outdoor pictures were taken. During the course of writing this report, the medical examiner's report, death certificate, and sheriff department report were obtained.

The victim was the farm owner. He had planted 10 acres of soybeans one week prior to the fatal incident. The family-owned farm did not have a written farm safety plan.

INVESTIGATION

The victim was very familiar performing work with the Model 220 Belarus Model tractor according to his spouse. The tractor was stored in a shed/barn near the soybean field. The tractor had a wide front wheel configuration and was equipped with a roll over protection structure and a functioning lap belt installed by the manufacturer. (See Figure 2) The tractor also had rear counterweights. He had purchased this 4-wheel drive tractor in new condition seven years prior to the incident. All operating controls were labeled and in apparent normal operating condition. At the time of the incident, the tractor was equipped with a front-end loader and a cultivator attached to the rear of the tractor. The wife reported that the tractor did not have any brake trouble, but that the 4-wheel drive train unit had been recently repaired.



Figure 2. Belarus tractor driven by victim

The incident occurred on the north side of the soybean field behind the shed/barn. A two-track dirt road curved around a silo on the property and allowed access to the soybean field. The terrain was rolling. On the north side of the field was a ditch that had trees in it. The day was sunny and the ground was dry. No one was in visual or verbal contact with the victim at the time of the incident.

On the day of the incident, the victim arrived in the morning and worked for a couple of hours. Another family member arrived, and the



Figure 3. Path to garden around silo/behind barn

victim, who would normally work while talking to a visitor, quit working and sat and talked with the visiting family member for another couple of hours. The visitor left. Soon thereafter, his wife arrived with lunch and the victim and his wife ate lunch together.

The event was unwitnessed. His wife said she started to cut the lawn and the victim took the tractor to the garden to begin cultivating the field and garden. He used the 2-track dirt road to go around a silo and onto the plowed field located to the north of the silo and shed. He was traveling forward when the incident occurred. (See Figure 3) He was not wearing the seat belt at the time of the incident.

The victim's wife had been mowing for approximately 30-45 minutes when she realized she had not seen him. She went looking for him and found him sitting on the tractor, in the ditch, pinned against a tree with the tractor running. She called 911. Emergency response arrived and he was declared dead at the scene. The tractor was tipped on the driver's right, leaning against a tree. The responding police agency found the front loader bucket in the raised position and the throttle in the "turtle" position (or low engine speed).

The responding police agency observed the tractor tire tracks go past the silo on the two-track road into the plowed field to the north. The tracks then made a left turn toward the west and into the ditch with trees in it located on the north side of the plowed field. The police report stated that it appeared as though the front bucket of the tractor was down, possibly moving dirt towards the northwest when the tractor went over the edge of the field.

When the police arrived, the tractor was running and the tires were not turning. The police turned off the tractor. It is unknown what gear the tractor was in at the time of the incident; the police report stated that during the removal of the victim, the gearshift hit the tree and caused the shifter to move. When the tractor was removed, the throttle was in the "turtle" position.

The police tested the tractor brakes, accelerator, gear shifter, and front bucket. All were determined to be fully functional. The police drove the tractor into the shed where it was parked.

CAUSE OF DEATH

The cause of death as stated on the death certificate was crushing chest injury due to or as a consequence of a farm tractor accident. Toxicological tests were not performed.

RECOMMENDATIONS/DISCUSSION

- When mowing or planting, leave a visual cue to identify the edge of drainage ditches or other land depressions.

Mow away from the edge of the ditch and leave the tall grass as a marker. The tall grass boundary from the edge of the ditch should be at least equal to the depth of the ditch. If possible, when equipment movement occurs between the crop field edge and a depression such as a ditch, make a best effort to have a 12-20 foot access area (path) to accommodate equipment movement. It is unknown how well the ditch was defined at the time of the incident.

A good rule of thumb is to stay back from the edge of the ditch as far away from the bank as the ditch is deep. The weight of the tractor could cave the bank in if too close to the shear line. It does not appear that the ditch bank caved in, but the victim was operating the tractor too close to the ditch according to the police report, thus allowing the tractor to enter the ditch.

- If the front-end loader is not to be used for an extended period, the loader should be removed from the tractor if equipped with a “quick detach” loader mechanism.

When performing field operations, remove the front-end loader from the tractor. The loader, while they easily handle moving materials, can make the tractor harder to handle, reduce your visibility, wastes fuel and changes the tractor’s center of gravity making it easier to roll over to the side. Newer tractors offer loaders with a quick disconnect capability with self-store pins and couplers. Check the loader’s operating manual for specific removal instructions.

- Travel with the loader bucket at the lowest possible height.

It is unclear whether the victim was traveling with the bucket in a raised or lowered position. It is also unclear whether he was moving dirt in the area. Although the police report states that that may have been the activity of the victim, the wife of the victim states that that would not have been an activity. Loaders increase the possibility of a tractor rollover; although this did not occur in this incident, several work practices should be followed when operating a tractor equipped with a front end loader. Keeping the bucket as low as possible when turning and transporting, looking for obstructions and depressions in the path of travel, and handling the tractor smoothly, avoiding quick starts, stops and turns.

REFERENCES

Farm and Ranch Safety Management, 4th Edition, Copyright 1994, Deere & Company, Moline, Illinois.

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MIFACE

Investigation Report # 03 MI 067

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