

## **FINAL KY FACE 95KY03001**

Date: 1 June 1995

### **Subject: 86 Year old Farmer is Killed After Being Hit By Tree Branch**

#### **SUMMARY**

An 86-year-old male farmer was killed after being struck by a tree limb. The victim was driving a tractor through a pasture checking on his cattle. As he approached a large tree, the extended front end loader, in full upright position, which was attached to the tractor struck a tree branch. The branch broke off and struck the victim causing massive head injury. He was thrown from the tractor and discovered a few hours later by his grandson. The tractor was equipped with a Roll Over Protective Structure (ROPS) and a non-function seat belt. The tractor did not have a Power Take Off (PTO) shield or Slow Moving Vehicle (SMV) placard. In order to prevent future fatalities of this type, the FACE investigator recommends:

- Equipment should be used in such a way to allow clear view of the path of travel
- Equipment operators should be aware of the side effects of medications and take precautionary measures to ensure their personal safety
- Operator should realize that lifting the front end loader too high can change the balance of the equipment and its handling properties as well as result in objects falling toward the tractor
- Safety devices should be well-maintained and used at all times while operating hazardous equipment

Additionally, operators should communicate with their personal physician the nature of their work and ask for guidance/precautions regarding equipment operation.

#### **INTRODUCTION**

On 12 April 1995, an 86-year-old farmer was killed while checking his cattle. KY FACE was notified of the incident by a nurse from the Occupational Health Nurse in Agricultural Community (OHNAC) program on 14 April 1995. An investigation was initiated and continued with a site visit on 16 May 1995 by both the FACE investigator and the OHNAC nurse. Interviews were conducted with the deputy coroner in charge of the case, a grandson of the victim, and a care taker who had knowledge of the case and an equipment dealer. Photos and documents from the coroner were reviewed. Photographs and measurements were made of the scene and tractor for documentation. State police and an equipment dealer and EMS personnel were interviewed by phone. Health information was obtained from the care taker.

The victim had owned and lived on the 183 acre farm for over 50 years. The gently rolling hills were cleared, fenced and used primarily to graze 90 head of cattle. The victim had held a job in a local quarry up until 1929 and had been farming full time since that date. The successful operation allowed the victim to purchase a new tractor in 1900. The victim had grown tobacco in the past, but had limited his operations to cattle for the past several years. He routinely drove the

tractor to the pasture to check on his cows and monitor the fence integrity. The victim had completed formal education through the eighth grade. Education regarding farm safety is not known.

According to the caretaker, the victim had a medical history of cataracts but had followed a course of non-compliance following laser surgery for lens implantation (July 1994 and February 1995). His grandson reported poor eye sight and an incident where his grandfather had run into a utility pole near the scene of the fatality one week prior to his death. Other medical history reported was a light stroke two years ago, depression, insomnia and prostate trouble. The victim had been to a physician on April 7, 1995 with complaints of his legs and his feet swelling. He had slept well the night before the incident after taking a Benadryl. He had eaten a good breakfast the morning of his death, but had not eaten lunch. A list of his routine medications included the following: Hytrin, Norvasc, Lopressor, Allopurinol, Nitrofurantoin, Aspirin, and Lasix as needed for swelling. He had often reported he could not see a calf until he was right up on it.

The day of the incident, the victim had slept late and reported to the care giver, who provided care to the victim's wife, that this was the best night's sleep he had had in a long time. He told the sitter he was going out to the pasture to check on the cattle, fences and cut thistles. He walked about 200 feet from the house to the shed where he climbed on to a 1987 model John Deere 2355 tractor with canopy. A few weeks prior to the incident a grandson had helped re-attach a John Deere Model 146 front end loader to the tractor. The victim often used the loader for a variety of tasks around the farm and was eager to have it back on the tractor. It was his habit to drive about the farm with the front end loader extended to a high position above the tractor hood.

## **INVESTIGATION**

At 10:30 am on Wednesday 14 April 1995, an 86-year-old farmer left his house to check on his cattle, fences and knock down some thistles. The victim was driving a 1980's model John Deere tractor (55 hp pto) with a front end loader attachment. He had been out about two hours when a care taker, who takes care of the victim's wife in their home became concerned due to his lateness. It was his usual pattern to return for lunch around noon. She peered out the window toward the pasture and saw in the distance the tractor next to a tree in an otherwise open pasture. She called a neighbor to ask if they had a better view of the tractor and to inquire if they had seen the victim. Although the neighbor could see the tractor close to the tree, they could not see the victim. The care taker then phoned the victim's grandson who lives within walking distance from the residence. She asked him to go and check in the victim that she had seen no movement of the tractor for some time and was worried.

The grandson immediately went to check the scene. Upon arrival, he discovered the victim on the ground under a tree about 40 yards from where the tractor was stopped under a second tree.

The gentle rolling 100+ acre pasture was visible from the back porch of the residence. Two large trees, one elm and one walnut dot the pasture about a quarter mile from the residence. The trees stand 40 yards feet apart, the walnut down a slight incline (less than 3 degrees) from the elm and

closer to the farm residence. Low branches extend outward from the elm tree about 12-16 feet from the ground.

Attached to one of the 7" diameter branches, approximately parallel to the ground was a mineral trough for the cattle. This 16" diameter by 5 foot cylindrical hot water tank had been modified (an opening had been cut along the side) to accommodate cow faces to offer minerals. It was suspended horizontally from the branch held in place by small link chains at an appropriate height for cows.

About 20 feet from the elm tree further from the residence is a utility pole. This pole supports a single power line which traverses the pasture. The power line is attached to the pole about 14 feet from the ground and sags to a height of 11 feet between poles. The poles are approximately 275 feet apart. It was one these pole that the victim had hit and knocked down with the tractor a week prior to the incident.

Because the incident was not witnessed, the following is surmised from evidence at the scene and discussions with the grandson, the coroner, the state police, and the care-taker.

About 1:00 on this cool mid-fifties sunny Wednesday the victim west driving the John Deer tractor through the pasture toward the residence. The bucket on the front end loader was fully extended to the upright position (approximately 12' 6" from the ground). In order to avoid coming in contact with the wire, the victim passed near the pole and proceeded toward the Elm tree. Once under the tree, the victim, not being able to see, ran into or was trying to adjust/move the feeder. For an unknown reason, the tractor continued toward the Walnut tree, carrying with it the feeder. It is possible the victim's view of the feeder was obscured by the bucket and he could not see the chains. As the pressure on the branch increased, it snapped. The branch jettisoned back striking the victim in the skull and throwing him from the tractor. The proximal end of the branch went between the roll over bars and causing the victim to be thrown off backward. In the process, the hydraulic hose on the left front of the loader broke causing the bucket the drop. The tractor then continued to roll toward the walnut tree carrying the feeder. It hit the walnut and choked itself out.

After being notified by the care-giver, the grandson drove his van to the pasture to find the victim lying near the Elm tree. He checked for signs of life but found none. He lifted the victim into his van and went back to the residence. The coroner received the call at 2:30 and arrived at the scene at 2:50. The coroner was called and arrived on the scene moments after the state police. The victim was pronounced dead and estimated time of death at 1:00. Emergency Medical Services was not notified. The State police, coroner and grandson returned to the field to view the scene.

## **CAUSE OF DEATH**

The cause of death was massive head trauma due to being struck by a tree limb. An autopsy was not done.

## **RECOMMENDATIONS/DISCUSSION**

**Recommendation #1:** Equipment should be used in such a way to allow clear view of the path of travel.

**Discussion #1:** It was reported that the victim often drive the tractor with the front end loader fully extended in the elevated position. In this case, it is possible that the victim's view of the tree branch and/or the mineral feeder was obscured by the bucket. By lowering the front end loader to a height below the hood of the tractor, a clear visual path ahead is possible. The hight of the loader fully extended upright is 12 feet 6 inches. This is higher than the power line between the poles. Operators should "Beware of lift clearance when raising loader to the maximum height" (1)

**Recommendation #2:** Equipment operators should be aware of the side effects of medications and take precautionary measures to ensure their personal safety.

**Discussion #2:** The victim was taking a variety of prescription medications for symptoms expressed to his physician . If the victim was aware of the side effects and the possible complications of taking these medications, he may have taken precautions when operating the farm equipment.

**Recommendation #3:** Operator should realize that lifting the front end loader too high can change the balance of the equipment and its handling properties as well as result in objects falling toward the tractor.

**Discussion #3:** Lifting the front end loader to the maximum height changes the center of gravity of the tractor. Although the attachment was compatible with the tractor in working conditions, it is not designed to be used in an extended upright position during regular transport. The tractor did have fluid filled tires providing additional 800 pounds to the rear of the tractor. In this case, the balance of the tractor was altered because of the position of the bucket. As well, the branch fell and projected through the "safe" zone created by the ROPS. Operators should be aware of the potential for objects to fall toward the operating zone.

**Recommendation #4:** Safety devices should be well-maintained and used at all times while operating hazardous equipment.

**Discussion #4:** The seat belt on the tractor was not in working condition. Although the tractor was sold with a ROPS, seat belts must be worn in conjunction with ROPS at be of value. In this case, the seat belt was on the tractor but inoperable.

Additionally, operators of farm equipment should communicate with their physician regarding the operation of farm equipment.

## REFERENCES

(1) John Deere Operators Manual 147 Farm Loader John Deere Welland Works OM-W37996 Issue D9.

