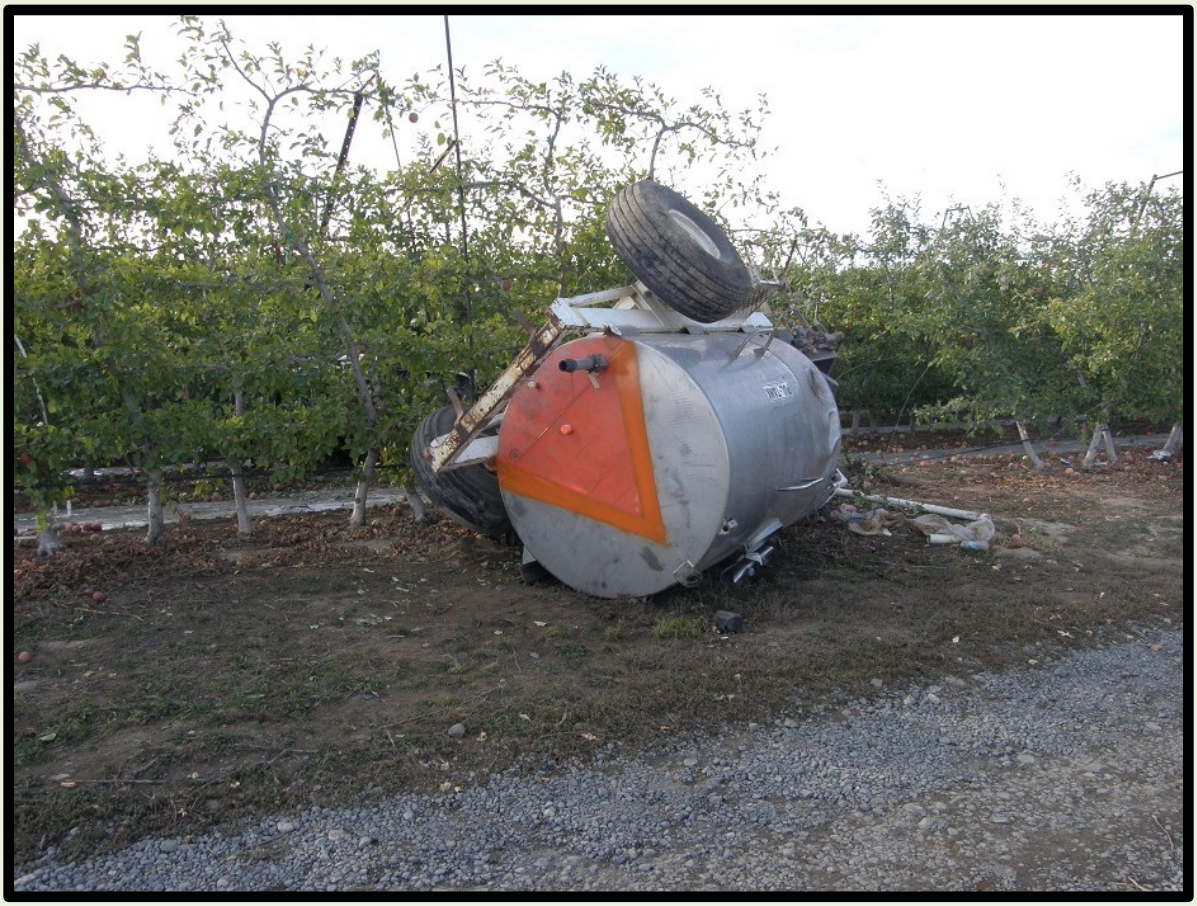
Orchard Tractor Operator Dies when Run Over by Trailer-Mounted Water Tank Towed by Tractor

FACE/WA
Fatality Assessment and Control Evaluation



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Washington State Department of Labor & Industries

SHARP
Safety & Health Assessment & Research for Prevention

SUMMARY

In October of 2008, a 43-year-old male, Hispanic, foreign-born apple orchard tractor operator died when he was run over by the wheels of a water tank trailer. On the day of the incident during the harvest, he was performing one of his normal job tasks. This task involved the operation of a tractor pulling a trailer-mounted, stainless steel 1,000 gallon capacity water tank to dampen the orchard's compacted dirt and gravel roads to suppress dust while the apple pickers were working.

The orchard was located on a gradually sloping hill. After the victim finished his lunch break in the upper part of the orchard, he proceeded to drive the tractor with the attached nearly full water tank trailer downhill on an orchard road. The orchard road was constructed of dirt and gravel; it was straight, dry, and smooth with an approximate downgrade of 1%. He was not watering down the road at this time.

As the incident was unwitnessed, the incident investigators determined that the victim was operating the tractor downhill in a gear ratio that was too high based on the incident scene evidence. The incorrect gear ratio selected would have allowed the tractor and its attached water tank trailer to gather excessive speed. Because of the weight of the water tank trailer and the high speed at which the tractor was traveling, the brakes on the tractor would not have been sufficient to control the momentum of the tractor and water tank trailer. When he attempted to shift to a lower gear ratio, the gearshift became stuck (jammed) in the neutral position, thus allowing for an out of control descent. Following this the victim fell, jumped, or was knocked from the operator's seat. After landing on the ground, his right leg was run over by a tractor wheel followed by his chest and abdomen being run over by the water tank trailer wheels.

An orchard foreman summoned the orchard manager, who called 911. The manager arrived within a few minutes and administered CPR to the unresponsive victim until emergency services paramedics arrived. The county coroner arrived and pronounced the victim deceased at the scene.

Investigators found the water tank trailer separated from the tractor and lying on its side. The tractor was found resting upright against trees in the orchard. A piece of wire was used instead of a locking safety bolt on the trailer's coupler to hold it on the tractor's hitch. This piece of wire failed just before or just after the victim came off of the tractor. The use of the wire in place of the locking safety bolt allowed the water tank trailer to separate from the tractor. The tractor was determined to be in neutral (out of gear) when examined in the orchard after the accident. Investigators also noted that the tractor did not have a seat belt or rollover protective structure (ROPS).

RECOMMENDATIONS

To prevent similar occurrences in the future, the Washington State Fatality Assessment and Control Evaluation (FACE) investigation team recommends that agricultural employers should follow these guidelines:

- **Train tractor operators to understand and recognize the hazards associated with operating tractors while traveling downhill towing trailers, implements, and equipment such as water tanks and sprayers. This training should include how to safely operate the tractor and emphasize the importance of reducing speed and downshifting to the appropriate gear for the slope and terrain.**
- **Maintain in a safe condition towing connections between tractors and all equipment including trailers, implements, and other attachments, and remove from service if in need of repair.**
- **Follow manufacturer's specifications for connecting tractors to trailers, implements, and other towed equipment.**
- **Ensure that tractors are equipped with a rollover protective structure (ROPS) and a seat belt.**

To access the full version of this investigation report along with the detailed recommendations and discussions section, go to www.lni.wa.gov and enter 52-29-2013 into the search box.