

A special reprint from

Claims[®]

COVERING THE BUSINESS OF LOSS

Agricultural Accidents

by

Charles C. Roberts, Jr.; Ph.D., P.E.

Losses in agricultural operations take a heavy toll, making farming one of the most hazardous endeavors in the country. Heavy machinery, large structures, environmental conditions and sometimes inattentive laborers form the ingredients for property loss and personal injury. The following are a few case studies representative of claims involving agricultural facilities.

Figure 1 is a view of a power take-off (PTO) shaft on a 1950's vintage elevator that was



Figure 1

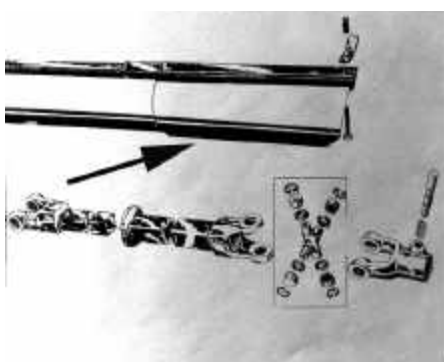


Figure 2

purchased used by the owner. While the machinery was being operated, a worker's clothing became entangled in the universal joint, resulting in severe injury. Figure 2 is the manufacturer's parts list for the elevator showing the existence of a guard that would

probably have prevented the injury. Absence of guards is often a significant factor in entanglement accidents.



Figure 3

Figure 3 is a view of an auger that was at the bottom of a grain cart. During unloading operations, a laborer tried to free clogged grain in the auger chute. The laborer slipped and lost part of his foot when it was sheared off at one of the auger flutes. Augers of this type do not have internal guards since they would interfere with grain flow. The auger, however, is in a place difficult to access by laborers during normal operation. This is called guarding by position. The difficulty occurs when laborers engage the point of operation without turning off the machine.



Figure 4

Figure 4 is a view of a grain auger winch that failed while the auger was being raised. The washer on the crank handle was too

small, allowing the handle to come loose. This defeated the ratchet mechanism and allowed the auger to suddenly fall, killing one of the workers. This was a result of an improper repair to the mechanism.



Figure 5

Figure 5 is a view of an auger that was being raised at the time of the accident. This auger did not have a stop to prevent it from being raised too high. During the raising, the landing gear lift slide traveled beyond center, causing instability and the collapse of the auger, injuring a worker. This was a design defect.



Figure 6

Figure 6 is a view of a failed grain bin. The loss includes the grain bin and crop. An improperly designed sidewall failed, causing the grain to be spilled and injury to workers.

Figure 7 is a view of a burned farm tractor inside a barn. Immediately prior to the fire, a mechanic was attempting to fix an ignition problem with the propane fueled tractor. Some spark plugs were out of the vehicle while the mechanic was diagnosing the

spark. The vehicle was being turned over by the starter motor, resulting in propane entering the barn and being ignited by the sparking wires.



Figure 7



Figure 8

Figure 8 is a view of a pumping system that allowed herbicide to mix with fertilizer. The system had not been properly flushed. Consequently, when the fertilizer was applied, significant crop loss resulted.

These are but a few examples of agricultural losses and personal injury. Circumstantial information from witnesses regarding how the accident happened (statements) is very important for the accident reconstruction. Preservation of failed parts is advisable for future analysis. Protect failed parts from corrosion or damage from mishandling. Check original machinery designs to determine the extent of alteration which may have aggravated the loss.

Dr. Roberts is a licensed Professional Engineer in Illinois and other states. He may be reached at C.Roberts Consulting Engineers, Inc. 46W192 Granart Rd. Big Rock, IL 60511; 630/556-3039, or at CCR@croberts.com or <http://www.croberts.com>.