

## HARVEST SAFETY

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(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

Farming is a dangerous occupation, ranking right behind mining for the highest number of accidents and fatalities annually. Harvest season can be particularly threatening due to dangers posed by equipment used, exaggerated by human factors such as fatigue associated with long days, environmental conditions (e.g., rain, mud, heat, cold, etc.), and other risks. This SOP provides guidance for reducing harvest safety risk factors.

### General Safety

- Do not rush to complete tasks or take short cuts. Risk of injury increases with haste.
- Stay alert. Get plenty of rest. Avoid long work hours, and working at times when you're most prone to fatigue. Avoid medications and other substances that may interfere with your ability to remain alert and safely operate equipment.
- Shut off all farm machinery before exiting the vehicle.
- Read and adhere to the manufacturer's operating and maintenance recommendations, as well as precautionary statements.
- Prior to initiating work, determine if other employees, visitors, or animals will also be in a field where harvesting equipment will be used. Warn individuals where harvesting equipment will be used and avoid altering field harvesting plans without giving prior notice to supervisors or others who might be in the field. It is the equipment operator's responsibility to watch for humans and animals in the field and to avoid injuring pedestrians.
- Allow passengers only when the vehicle is specifically designed for such use (i.e., manufacturer supplied passenger seat).

### Servicing

- Equipment should be made harvest-ready in the off-season.
- Before performing service, lower the header to the ground, place the machine in park or neutral, set the brake, turn off the engine, and remove the keys. Observe all precautions stated by the manufacturer in cases where the owner's manual specifies a service or maintenance operation that must be conducted with the engine running or the header raised.
- Never clear a clogged harvester with the machine running.
- Do not place yourself beneath harvester headers without assuring they can't come down. Use the manufacturer's hydraulic cylinder safety stops, solid blocks, or other failsafe protective devices.

- Let the forage harvester knives stop rotating on their own before opening the access doors to work on them. Consider lockout devices to prevent injury from accidental startup or stored energy.
- Always follow the manufacturer's recommendations when sharpening forage harvester knives, or when replacing knives, forage blower blades, or combine cylinder bars. Be sure to torque the knife, blade, or bar attachment bolts to specifications.

### **Road Safety**

- Make the vehicle as narrow as possible by adjusting hitches, folding unloading augers, or removing headers.
- Equip the harvester with bright, reflective slow moving vehicle (SMV) signs.
- Use warning lights when possible.
- Signal all turns.
- Don't drive on the shoulder where terrain may be rough and cause tipping. To allow vehicles to pass, wait for a safe place and pull off the road and stop. If the vehicle starts to tip, steering down to the ditch may prevent a complete overturn.
- To prevent loss of control when going downhill, leave harvester in mid range or low range. Do not put into neutral or leave in high gear.
- Consider having an escort vehicle, especially if the trip requires left turns.

### **Field Operation**

- Be aware that the stability of the vehicle changes as the tank fills with grain. The center of gravity becomes higher and the vehicle will be more prone to tipping, especially with high speeds and turns. Do not extend the height of the grain tank beyond what is recommended by the manufacturer.
- When operating on hills, make wide turns.
- Carry a cell phone or other communication device (i.e., two-way radio) for emergency use only.
- Do not stand behind or beneath the discharge spout of an operating crop harvester.

### **Fall Prevention**

Falls result in a significant number of farm related injuries. A fall from a combine can be as much as 14 feet, and may result in serious injury.

- If a machine must be serviced in the field, take time to clean the crop dust and debris from the steps and platforms, and wear shoes with a solid, slip-resistant tread. Good traction will reduce the chance of slipping and falling.
- Be extremely alert if working in or after rain. Wet shoes make it easier to slip and fall when getting on and off the equipment.

### **Fire Prevention**

Harvesters can be fire hazards. Chaff and other bits of plant material can be ignited by engine components or from the heat of failing bearings or slipping belts. Reduce fire hazards by:

- Keeping belts tight.

- Frequently removing dust and chaff buildup.
- Checking bearings regularly.
- Equipping tractors with a multi-purpose (A-B-C) fire extinguisher (5-pound minimum, 10-pound is better). Consider carrying a 2 1/2- or 5-gallon pressurized or pump, type A fire extinguisher on combines. These extinguishers are better than type A-B-C extinguishers on type A fires (chaff and plant material) in windy conditions.

## Grain Wagons

Loaded grain wagons will often weigh more than the tractor or pickup truck pulling them. If a heavy wagon has a tire blowout or running gear failure, it will make control difficult and can result in a collision or overturn.

- Adjust and maintain the wagon's steering components to prevent fishtailing or weaving and the risk of component failure.
- To prevent an individual from being trapped, buried, and suffocated by grain, make sure no one is in the grain trailer while it is being loaded or unloaded.
- Never load grain wagons beyond the towing capacity of the tow vehicle. Observe all manufacturer towing recommendations and precautions. When calculating the tow weight, include the weight of the empty grain wagon. For example, the total load weight for a grain trailer with a tare weight of 5000 pounds and towing 4500 pounds of corn is 9500 pounds.
- Do not exceed the manufacturer's recommended towing speed for the wagon or the tires. Reduce travel speed and use extra caution if the wagon weighs more than the tow vehicle.
- When purchasing grain wagons, select a model equipped with brakes and lights.
- Tires used for the running gear must be in good condition. Tires with deep cuts or cracks are blowout hazards and should be replaced. Ensure proper tire inflation.
- Use extreme caution when going down a hill or incline, since control is more difficult under these conditions.
- When securing wagons, use locking pins. Safety chains must be used when towing on public roads.
- The task of hitching wagons is often overlooked as a potential source of severe injury or fatality. Being caught between the tractor and the grain wagon is the primary hazard involved in hitching operations.
  - Ensure that the area between the tow vehicle and the grain wagon is clear of people and animals before moving. When someone is acting as a spotter, be sure to give warning and then, while the individual stands at a safe distance, back the tow vehicle past the hitch point. Then, inch forward away from the wagon to align the hitch holes. This technique will reduce the potential for injuring the spotter if there is an equipment failure.
  - Before hitching or unhitching a grain wagon, make sure that the tow vehicle is in park, the parking brake is engaged, and the engine is off.

To avoid unexpected movement during hitch alignment, do not attempt to manually rock the tow vehicle or load.

- Park the grain wagon on firm, level ground and chock the wheels before unhitching.