

GRAIN WAGONS

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

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. This SOP provides guidance to minimize the risk of injury and property loss while conducting operations using grain wagons.

- Adjust and maintain the wagon's steering components to prevent fishtailing or weaving and the risk of component failure.
- Never load grain wagons beyond the towing capacity of the tow vehicle.
- When using a tractor for towing, ensure the tractor is equipped with a roll-over protection structure (ROPS). Refer to EHS SOP, ***Roll-Over Protection Structures (ROPS) for Tractors***.
- When towing, 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. In most cases when towing grain wagons not equipped with brakes, the driver must not:
 - Exceed 20 miles per hour travel speed.
 - Tow wagon loads weighing more than 1.5 times the weight of the towing vehicle.
- When purchasing grain wagons, EHS strongly recommends the purchase of grain wagons equipped with brakes, especially when fully loaded wagons could potentially weigh more than the towing vehicle. Wagon brakes reduce the momentum of the loaded wagon and the potential to overwhelm the tow vehicle brakes. Even when towing grain wagons with brakes, the driver must not:
 - Exceed 25 miles per hour travel speed.
 - Tow loaded wagons weighing more than 4.5 times the weight of the towing vehicle.
 - Exceed the maximum capacity of the towing vehicle or weight ratings on the roads being traveled, regardless of the type of towing vehicle or load being moved.
- 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.
- 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. Chains will provide added control should the wagon come unhitched.
- Consider installing lighting packages on grain wagons, particularly wagons that obstruct the lights on the tow vehicle.
- 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 tractor and the grain wagon is clear of people and animals before moving the tractor. When someone is acting as a spotter, be sure to give warning and then, while the individual stands at a safe distance away from the tractor, back the tractor 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.
 - Since exact alignment of the hitch holes can be done with the tongue rather than the tractor, install a sliding wagon tongue to facilitate hitching and reduce hitching hazards.
 - 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. A hitch pin that appears to be stuck may represent a very unsafe condition. The forces acting on a stuck hitch pin may cause it to become a dangerous projectile once it is pulled free. In addition, the wagon will be free for independent movement and may become a crush hazard for individuals standing between the tow vehicle and the wagon. Unsecured wagons can become runaway vehicles.
 - 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.
 - Refer to the EHS SOP, **Tractor Safety** for additional safety information on towing and connecting to a three point hitch.