



OAR 437  
Division 4/O  
Division 4/U  
Division 4/J

## Protecting Oregon's agricultural workers from tractor hazards

Most farmworker injuries and deaths are caused by tractor incidents such as overturns, runovers, contact with unguarded power take-off (PTO) systems, and contact with unguarded tractor attachments or implements. Employers are responsible for ensuring a safe work environment for every worker. This fact sheet provides employers with information about these tractor hazards, along with safety measures to better protect tractor operators.

### Rollover protective structures (ROPS)

A ROPS is a roll bar or cage frame that is designed to form a zone of protection around the operator if a tractor overturns. Tractor overturns are the leading cause of fatalities in the agriculture industry, resulting in approximately 130 deaths per year nationally. The majority of tractor overturn incidents take place when farm vehicles turn on their side or tip over backward. These overturns occur very quickly, often in seconds.

An operator's chances of surviving a tractor overturn without a serious injury are very good if the tractor has a ROPS and the operator is wearing a seat belt. **OAR 437-004-3600(2)** requires most agricultural tractors with over 20 horsepower manufactured after Oct. 25, 1976 to have ROPS, and each tractor with a ROPS to have a seat belt. Employers must ensure that tractor operators use the seat belt properly, which includes keeping the belt tightened so that they are confined within the ROPS protective area.

A qualified dealer can retrofit older tractor models with a ROPS or seat belt system. In addition, the National Institute for Occupational Safety and Health (NIOSH) has developed a cost-effective rollover protective structure (CROPS) program for four tractor models that lack commercially available ROPS.

### Tractor operator training [See OAR 437-004-3430(1)]

Employers must ensure that all employees who drive an agricultural tractor are trained about the operating practices below and about any other practices peculiar to the work environment.

- Securely fasten your seat belt if the tractor has a ROPS.
- Where possible, avoid operating the tractor near ditches, embankments, and holes.
- Reduce speed when turning; crossing slopes; and driving on rough, slick, or muddy surfaces.
- Stay off slopes too steep for safe operation.
- Watch where you are going, especially at row ends, on roads, and around trees.



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- Do not permit others to ride unless there is a safe seat.
  - Operate the tractor smoothly – no jerky turns, starts, or stops.
  - Hitch only to the drawbar and hitch points recommended by the tractor manufacturer.
  - When the tractor is stopped, set brakes securely and use park lock if available.
- This training must be provided at the time of initial assignment to driving duties and at least annually after that.

In addition, **OAR 437-004-1910(3)** General Equipment Guarding requires employers to instruct every employee on their initial assignment about the safe operation and servicing of all equipment they will use. This instruction must be renewed at least annually and include at least these safety points:

- Keep all guards in place when the machine is in use.
- Do not permit riders on farm field equipment other than persons required for instruction or assistance.
- Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment. Instruct employees in the safe procedures necessary to service or maintain the equipment when it must remain running.
- Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.
- Refer to and comply with OAR 437-004-1275, Lockout/Tagout.

#### **Power take-off (PTO) shafts [See OAR 437-004-1940]**

A PTO shaft allows farmworkers to use power from the tractor's engine to drive a variety of machines and implements. While PTO shafts are essential, they can pose a serious safety hazard. Employers must protect workers from coming into contact with unguarded, rotating PTO shafts. They must inspect the PTO shaft to ensure that the guard is always in place, and they must replace any missing or damaged PTO guard.

- All PTO shafts, including rear, mid- or side-mounted shafts, must be guarded either by a master shield or by other protective guarding.
- Before servicing, adjusting, cleaning, or unclogging the equipment, stop the engine, disconnect the power source, and wait for the PTO shaft to stop, except when the machine must be running properly to be serviced or maintained. In that case, the employer must train workers on all steps and procedures needed to safely service or maintain the equipment.
- Keep all guards in place before starting the tractor's engine and engaging the PTO shaft's selector switch.
- Ensure that everyone nearby is clear of the machine before starting the tractor's engine and engaging the PTO shaft's selector switch. Tie back and tuck in long hair and do not wear loose clothing to prevent being caught by a rotating PTO shaft.

#### **OAR 437-004-3410 covers safety practices for all vehicles, including tractors.**

- Only trained and authorized employees may operate any vehicle
- Do not operate any unsafe vehicle. Fix unsafe conditions before using it.
- Do not drive a vehicle with an unstable or insecure load.
- Workers may not be under loads or units of materials during movement.
- Do not overload any vehicle. Keep loads stable and well balanced.
- Only the operator may ride on vehicles unless there are safe riding facilities for additional riders.
- Do not ride on fenders, axles, hitches, tongues, buckets, forks, drawbars or any other area not intended to carry passengers.



- Do not ride in a loaded or partially loaded cargo space while the vehicle is moving unless the load is adequately shored, braced, or otherwise secured.
- Do not put arms or legs between working parts or outside the running lines of vehicles.
- Do not stand or walk under an elevated part of a vehicle whether loaded or empty, unless it is blocked or cribbed according to OAR 437-004-3410(5)(d).
- Vehicles must have a safe way of access and exit.
- Do not jump on or off moving vehicles.
- Do not drive a vehicle up to anyone who is in front of a stationary object.
- The operator must look in the direction of travel and have a clear view of the path of travel, unless guided by a signal person with a clear view of the route.
- There must be no stunt driving or horseplay.

### General safety recommendations

- Maintain frequent communication with tractor operators who work alone or in remote areas.
- Ensure that operators are familiar with the ground where the tractor will be used.
- Make sure operators are aware of ditches, uneven ground, and bystanders in the area.
- Keep children away from tractors and their implements.
- Call local first responders or 911 in case of an emergency. When reporting an emergency, provide your name, location, nature of the emergency, and where to access the injured worker.
- Inspections and review
  - Ensure that operators and workers are thoroughly familiar with farm machinery that may be used for just a few days out of the year. This is especially important with harvesting equipment such as combines and nut harvesters.
  - Conduct pre-operational safety checks.
  - Review proper operating procedures.
  - Ensure that tractor safety decals and stickers are not worn, damaged, or removed.
- Indoor safety precautions
  - Prevent indoor carbon monoxide buildup by ensuring that adequate ventilation is always available when starting or operating a tractor indoors.
  - Make sure that exhaust fans are running, and always leave the structure's doors open if exhaust fans are not available.
- Highway safety
  - Train tractor operators to avoid highways during busy peak travel times or in conditions with poor visibility (at night or during bad weather).
  - Keep tractors and towed equipment well-lit and marked with current transportation regulations.
  - Tractor operators should consider using emergency flashers and an escort vehicle to increase the tractor's visibility.
  - The tractor must have a clean, highly visible, slow-moving vehicle emblem displayed on the rear of any tractor and its towed attachment traveling 25 mph or slower.
  - Lock the brake pedals together to provide even brake pressure to prevent engaging only one brake pedal that could cause the tractor to swerve and potentially rollover.

