



Farm Tractor Rollover Prevention Safety Training Program



Goal

This program aims to educate tractor operators about tractor rollover hazards and prevention.

Objective

The objective of this program is to train tractor operators in key practices to reduce rollovers and increase safety while driving tractors.

Background

Agriculture remains [one of the most dangerous occupations](#) in the United States. Tractor accidents are a major contributing cause of deaths and injuries. The Occupational Safety and Health Administration (OSHA) Rollover Protection Systems (ROPS) standard, 29 Code of Federal Regulations (CFR) [1928.51](#), requires that most tractors used in the farming industry have an approved ROPS.

Training requirements

Training in safe tractor operations is required by 29 CFR [1928 Appendix A](#). Training must be provided at the time of initial assignment and repeated at least annually.

Facts

According to the [Occupational Safety and Health Administration](#) (OSHA), tractor overturns are the leading cause of fatal injuries on U.S. farms, resulting in an average of about 130 deaths each year. OSHA estimates that one in ten operators will overturn a tractor in his or her lifetime.

A significant number of these deaths are caused by improper tractor operations such as:

- Making sharp, high-speed turns using a single brake.
- Driving too close to embankments and ditches.

- Operating downhill on steep slopes with side-mounted equipment.
- Rapid engagement of the clutch at high engine speeds.
- Hitching loads to the axle housing rather than the drawbar.

A ROPS provides better protection for the operator in the event of a rollover by limiting the rollover to 90°. Since 1976, all new tractors with over 20 horsepower manufactured in the U.S. or imported must be factory-equipped with ROPS that meet OSHA requirements.

Retrofitting older tractors with ROPS is possible but can be costly relative to the machine's value. Contact your local tractor dealer or agricultural extension service for retrofitting information. Farm operators should not add their own ROPS, as these may not meet safety standards.

Safe operation

While a ROPS protects the operator during a rollover, it does not prevent rollovers. To lessen rollover risks:

- **Fasten the seat belt securely.**
 - If the tractor has a ROPS, wear the seat belt to avoid being thrown from the tractor.
 - If the tractor does not have a ROPS, do not wear a seat belt in the hopes that you to be thrown clear in a rollover.
- **Avoid steep slopes.**
 - Tractor stability is greatly reduced on steep slopes.
 - Increase stability by using the widest wheel setting appropriate for the job.
 - Drive slowly and avoid quick uphill turns.

- Watch for bumps on the uphill side.
- Keep side-mounted equipment on the uphill side.
- Watch for holes and depressions on the downhill side.
- Keep the tractor in gear when going downhill, using engine braking.
- Select the lowest gear before starting downhill.

- **Reduce speed.**

- Reduce speed when turning, crossing slopes, or on rough, slick, or muddy surfaces.
- The rollover risk increases as the tractor speed increases.
- Keep front-end loaders as low as possible when turning.

- **Avoid ditches and embankments.**

- When possible, avoid operating near ditches, embankments, and large holes.
- If operating near a ditch, keep at least as far away as the depth of the ditch.
- Increase the distance from ditches and embankments with loose soils like sand or shale.

- **Follow traffic rules and regulations.**

- Observe all motor vehicle rules and regulations, as a significant number of tractor accidents occur on public roadways.
- Be a courteous driver and pull over to allow traffic to pass when needed.
- Display a slow-moving vehicle (SMV) emblem on the rear of tractors and towed equipment on highways.
- Ensure the SMV emblem and tractor lights are visible from at least 500 feet.

- **Operate tractors smoothly.**
 - Engage the clutch slowly and evenly to avoid rear overturns.
 - Slow down before stopping or turning when towing equipment to prevent jackknifing or rollovers.
 - Turn safely by reducing engine speed, applying both brakes if needed, and making wide turns.
 - In fields, watch for obstacles and apply a single brake slowly in the direction of the turn, if needed.
- **No riders.**
 - Do not allow riders, as tractors are designed for a single operator.

- **Proper hitching.**
 - Hitch to the drawbar, hitch points, or manufacturer-recommended locations.
 - Hitch as low as possible to avoid rear overturns.
 - Use a safety hitch pin to prevent detachment.
- **Proper parking.**
 - Set the brake securely when stopped and shift into park.
 - Lower raised equipment and remove the ignition key.

By following these procedures, tractor operators can reduce the risk of accidents and fatalities.

Review questions

1. What is not a contributing factor in tractor overturns?
 - a. Turning too sharply.
 - b. Traveling on a steep embankment.
 - c. Rapid engagement of the clutch.
 - d. Traveling with your high beams on.
2. What action would reduce the chance of a tractor rollover?
 - a. Traveling at an excessive speed while cornering.
 - b. Striking a pothole, fence post, or tree.
 - c. Avoiding travel on steep slopes.
 - d. Driving without your hands.
3. When is it inappropriate to wear a seat belt?
 - a. When the tractor is not equipped with a ROPS.
 - b. When traveling less than 10 mph.
 - c. When traveling more than 10 mph.
 - d. While traversing a stream, creek, or river.
4. What is one of the precautions that should be taken when operating a tractor on a steep slope?
 - a. Place any equipment on the downhill side.
 - b. Turn sharply towards the uphill side.
 - c. Avoid bumps on the uphill side.
 - d. Hitting holes on the downhill side.
5. To be safe, how far must you operate your tractor from a ditch or embankment?
 - a. As far away as the ditch is deep.
 - b. At least 2 feet.
 - c. At least 6 feet.
 - d. No distance is required.

Answers: 1. d 2. c 3. a 4. c 5. a



www.txsafetyatwork.com

800-252-7031

*The Texas Department of Insurance,
Division of Workers' Compensation (DWC)-Workplace Safety
P.O. Box 12050
Austin, TX 78701-2050*

Disclaimer: Unless otherwise noted, this document was produced by the Texas Department of Insurance, Division of Workers' Compensation using information from staff subject specialists, government entities, or other authoritative sources. Information contained in this fact sheet is considered accurate at the time of publication. For more free publications and other occupational safety and health resources, visit www.txsafetyatwork.com, call 800-252-7031, option 2, or email resourcecenter@tdi.texas.gov.