



On Course Risk Assessment for Motorized Equipment

Tractors and self-propelled machinery can overturn or lose control, when working on slopes, uneven ground, near ditches or bunkers. Incorrect loading, weight distribution, poor or incorrect maintenance, turning on slopes and unsafe driving practices will increase the risk of an overturn or loss of control accident.

Remember there is no such thing as a 'safe' slope. Operating on grass slopes requires particular care, as grass is likely to be very slippery especially when wet.

It is essential that a risk assessment is carried out to reduce the likelihood of accidents occurring on slopes; typically the process on a golf course would cover the following:

1. Identifying areas where steep slopes, uneven ground, ditches, drop offs, pedestrian crossings, and bunkers are likely to cause problems.
2. Identifying aggravating features, poor sight lines on approach to a slope, steep slope that leads to a bunker or a water hazard. There are also weather hazards to assess such as ice, snow, heavy rain collection areas and wet grass.
3. Measuring the angle of the slopes. Compare the angle to the manufacturers' guidelines as how to safely use equipment on slopes of various angles.
4. Identifying "no go" areas for machinery whereby the operator has the potential risk of rolling their equipment over and into a body of water resulting in possible drowning or rolling over and causing a serious injury. These areas should be clearly defined in a program created by the superintendent and also on an overhead map of the course and grounds in general.
5. Identifying which machines may operate safely in specific areas; this will involve reference to manufacturers' information for slope limits for individual machines and reference to roll over protection structures (ROP's), seat belts and life jackets.
6. Ensuring that machinery is maintained to manufacturers' specification. Each piece of equipment should have its own daily inspection sheet where each operator using that equipment examines the equipment and then completes the sheet before actually using the equipment.
7. Training staff to operate machinery safely on slopes. A competent and well-trained person must be the only person to do this training. It is recommended to start new employees on

slopes of lesser angles first so that they can slowly build their comfort zone for operating the equipment.

8. Devising safe working practices for each machine and hazardous area. Have each employee review these procedures then sign their training records accordingly. Post these procedures on the employees' board and notify your staff if and when changes are made to the procedures.
9. Audit and monitoring staff, operating procedures and any incidents that may occur. Take note of your findings and go over these in your monthly staff safety meeting. (Review the Accident/Incident reporting program.)

Tractor & Motorized Equipment Safety

Tractors must be fitted with a safety cab; roll frame or roll bar. These will give the driver some protection in the event of an overturn, however if there is a risk of injury to the operator due to contact with the cab during an overturn then seat belts or other restraining system should be fitted and worn.

Self-propelled machinery (mowers, turf maintenance machines, dumpers, excavators and work vehicles) should also be fitted with roll over protection (ROP's) if there is a risk of the machine overturning. With these machines it is essential that seat belts are also fitted and worn, as in the event of an overturn the operator would be likely to be thrown from the seat and be crushed by the machine or its roll over protection. The exception to this is the "sit astride" All Terrain Vehicle (ATV's) where it would be impractical to fit roll over protection; the controls used in this example are the requirement for operators to be trained and competent and that they wear head protection. I. E. a hard hat, motorcycle helmet, an ATV helmet or other head protection, which meets the Occupational Health and Safety Act.

Using hand held and pedestrian controlled machinery on slopes may also be hazardous. Problem areas will include:

1. Operators slipping on the slope, this may lead to injuries directly associated with the fall and also from making contact with moving parts on the machine e.g. mower blades, trimmers lines and blades and hedge cutter blades.
2. Increased risk of operator injury due to working on slopes, these will generally affect ankles and knees but may also have an adverse effect on back, necks and shoulders.
3. The machine sliding or overturning on the slope.
4. Increased risk of objects being ejected from the machine.

General Safety Issues

Operators should be adequately trained, particularly to recognize potentially dangerous situations. The training should emphasize the need for care and concentration when working with tractors and self propelled machinery and, in particular, the importance of paying

attention to changes in ground conditions, e.g. potholes, gravel or the turning circle load and speed which may affect the safety of the operation.

Routine checks and maintenance will help to ensure that:

1. Brakes on tractors and self-propelled machinery are correctly adjusted and working efficiently. Independent brakes should be linked whenever braked steering is not required.
2. Any safety devices or warning systems are operating correctly.
3. Steering is maintained so that there is no excessive free movement and no unnecessary play on the front wheel bearings.
4. Tires are inflated to the correct pressure and have adequate tread. They should not be used if they have suffered damage, which could affect their safe use.
5. All hoses and cables on the equipment are inspected daily.
6. Before recharging the battery on any piece of equipment, inspect the battery to ensure that it is not cracked or damaged. This is especially important if a pressure washer is being used to clean this equipment.
7. There are no fluid leaks from the equipment. Check all fluid levels daily.

Remember that preparing your staff for the possible dangers they could face when operating motorized equipment is one of the most important tasks a superintendent has.

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Mower Safety Guideline for On Grounds Use

Driving in the Safety Zone

"Driving in the Safety Zone" means making choices that keep you out of high-risk situations and hazards, like steep slopes or sudden drop-offs near water. Stay off hills or surfaces with a slope greater than 15 degrees.



Maintain areas close to water with a hand trimmer or walk mower

Avoid driving your mower too close to water. There may be drop-offs, the surrounding grass can be wet or slippery, or the ground might be muddy and unstable.



Give yourself plenty of clearance

It's tempting to get as close to water or edges as you can to eliminate a little handwork. But don't sacrifice safety in the interest of saving a little time or effort. Give yourself plenty of clearance. Some people use 2 mower widths as a guide.



Safety Basics

Safety basics when operating any mowing equipment:

- wear goggles and protective hearing devices
- read the manual and safety decals
- avoid drugs and alcohol



Keep movements deliberate and steady

ZRT mowers operate differently than traditional garden tractors. They're maneuvered with control levers rather than steering wheels. They're fast, and they can turn on a dime - that's why they're so popular. In the interest of safety, keep your speed under control and operate the control levers with smooth, even pressure.



Maneuvering Hills

Depending on the surroundings, you may feel more comfortable mowing from side to side or up and down a hill. But in either case, hills can cause loss of traction. Never drive your ZRT mower on any slopes greater than 15 degrees. Keep movements deliberate and steady. Don't make sudden changes in speed or direction.



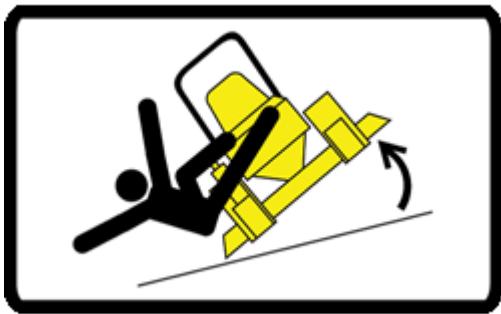
Retaining Walls and Drop-offs

Retaining walls and drop-offs around steps or ramps are a common hazard. Give yourself plenty of clearance. Hand-trim the edges with a walk-behind mower or string trimmer.



Avoiding Tipovers

For enhanced safety, Rollover Protection Systems (ROPS) are standard equipment on all new Toro Z Masters. If your ZRT is not equipped with a ROPS, we strongly encourage you to protect yourself and your workers by speaking with your Toro distributor or dealer about installing a 2-post foldable ROPS that is certified to OSHA standards.



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