

# MONTGUIDE

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## Tractor Accident Victim Rescue<sup>1</sup>

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Tractor upsets continue to cause more fatalities than any other type of farm accident, despite increased emphasis on safer design and Roll-Over Protective Structure (ROPS).

Many older tractors that are still in use have narrow front ends that are more easily upset. More than 85 percent of all tractor overturns are to the side. About 14 percent are rear overturns, and 1 percent are the forward overturn.

The side overturn usually is more severe, because of the speed and momentum involved. Most of the danger in a rear overturn involves the tractor revolving around the rear axle, which can occur in about 1 1/2 seconds. A high percentage of rear overturn accidents prove fatal.

To begin a rescue operation, make sure than the tractor engine is shut off and will not start again. Turn off the key of a gasoline-fueled tractor. Pull the injector pump stop rod to open the pump on diesel tractors. If you can't get to the key or injector rod knob, stuff a rag into the air intake, or use a fire extinguisher to spray CO<sub>2</sub> into the air cleaner. Make sure the tractor is shut off even if it is not running.

Never allow smoking near a tractor overturn, because fuel vapors could easily ignite or explode. If the accident victim is pinned under the tractor and cannot be removed by other methods, use a cutting torch only as a last resort. Make sure the victim is properly covered, so he is not burned by sparks. Be aware of the

possibility of fire. Have a dry chemical fire extinguisher ready.

Injuries in both side and rear tractor overturns often include a broken or crushed pelvis. Such injuries occur in approximately 80 percent of all tractor upsets. Therefore, rescuers should be careful not to twist or turn the victim. Sharp points of broken bones might puncture the femoral artery, bladder, intestines or peritoneal cavity. Due to the operator's sitting position, he often ends up with his knees doubled back and pointed towards the shoulder-something like a fetal position. Rescuers should consider transporting the individual in this position to reduce the possibility of additional injury. Severe shock is common, and pelvic fracture victims may lose considerable blood.

Torso injuries also are common in tractor overturn accidents. The vary from broken ribs to a crushed chest, with possibility of a collapsed lung. In tractor overturns the steering wheel is forced into the operator, unlike the driver being thrown into the steering wheel in an automobile accident. However, the injuries are similar. Treatment for broken legs and arms, common in tractor overturn accidents, should be similar to that for other broken bone situations.

Other tractor overturn injuries include chemical and other burns. These are caused by fluids leaking from a hot radiator, hot hydraulic fluid, fuel tank, battery acid, calcium chloride or other antifreeze solutions. It is extremely important to remove or dilute acid spilled on a victim as quickly as possible. Use large amounts of water, especially if eyes are involved.

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**QUICK REFERENCE CHECK LIST**

1. Secure Tractor
  - a. Check area to make sure there are no hazardous materials in the immediate vicinity that could cause serious injury or death.
  - b. Shut off engine and make it inoperable.
  - c. Check A and B with safety in mind.
  - d. Stabilize tractor and block wheels to prevent any movement.
  - e. Be prepared to extinguish fire (no smoking).
  - f. Protect victim from hot oil, battery acid and fuel leakage.
2. Stabilize Victim
  - a. Follow A, B and C, and apply CPR if needed.
  - b. Use cervical collar if neck injury is possible.
  - c. Treat for shock.
  - d. Obtain help if alone.
3. Reposition Tractor
  - a. Dig under victim or lift tractor, use jacks, portapower or jaws of life. Crib or block as you go.
  - b. A winch may be needed.
  - c. If parts of cab are cut away, don't expect the remaining portion to support tractor.
4. Remove Victim
  - a. Use a backboard to maintain body alignment.
  - b. Work slowly and carefully.
5. Treatment
  - a. Give oxygen if needed.
  - b. Dress wounds.
  - c. Apply splint.
  - d. Continue monitoring of the victim.
6. Transport
7. Fill out accident report.

Runover type tractor accident often involve a person who falls from a tractor, and frequently involves an individual who attempted to operate a tractor while not seated. The type of injury usually is a crushed or broken pelvis, torso or legs. Massive head injuries may occur.

All new tractors are manufactured with a ROPS, designed to confine the operator within the structure if he is wearing a seat belt. ROPS reduce the potential of the tractor rolling more than 90 degrees.

If a tractor without ROPS overturns, it may be easier to rescue the victim from under the tractor by digging. Soft soil conditions may allow rescuers to dig the victim free. Blocking and cribbing are extremely important to prevent settling or additional turning of the tractor. This might endanger rescuers as well as cause additional injury to the victim. Before digging, make sure the tractor has been completely stabilized with cribbing, and the rear wheels chocked so they cannot turn.

If a tractor or wrecker is used to lift the load off the victim, make sure than the chains are strong enough and securely fastened. Make sure that no one is near the chains or cables, which might break or slip. Lifting is preferred to rolling the tractor off the victim. Place cribbing under the tractor as it is lifted, by using wedges and wood blocks (not concrete) to keep a tight joint between the tractor and cribbing as lifting is conducted.

Lifting may have to be done with hydraulic jacks. Use jacks that are large enough, placed about three feet apart.

Make certain the jacks will not slip. When lifting, lift with both jacks uniformly and slowly. Make sure that cribbing, used to prevent the tractor falling if a jack slips, is tight up against the tractor.

If the tractor must be rolled off the victim, block the tractor so the rear wheels do not slip, and to prevent the transfer of weight onto the victim.

When lifting or pulling is necessary, use chains and cables with adequate strength. Do NOT use nylon rope, which stretches and may break to cause additional injury.

Someone should be designated to make sure that no bystanders are close enough to be injured, or get in the way of the rescuers.