

4.1 Explain the following hazards associated with an agricultural tractor.

- Slips and falls
- Rollovers
- Runovers
- Extra riders
- Entanglements
- Hot components
- Pinch points

4.2 Locate and interpret the steps for starting and stopping the tractor engine as outlined in the operator's manual.

- Shift the transmission in neutral or park
- PTO disengaged
- Hydraulic controls in neutral
- Disengage clutch
- Start engine

4.3 Explain the steps to disengage the clutch, select the appropriate transmission setting or position, and smoothly engage the clutch as outlined in the operator's manual.

4.4 Explain the steps to engage and disengage the PTO as explained in the operator's manual.

4.5 Explain the steps to raise and lower the three-point hitch assembly as explained in the operator's manual.

4.6 Explain the function of the parking brake and when it should be used.

4.7 Describe how the following forces contribute to tractor upset.

- Gravity/Center of gravity
- Centrifugal force
- Rear-axle torque
- Force on drawbar
- Forces on high hitch points

4.8 Explain how each of the following design features can reduce the potential for tractor upset.

- Wide front end versus narrow front-end
- Adjustable rear wheel width
- Use of rear wheel weights
- Duals and/or wider tires
- Tire ballasting
- Width of rear tires
- Front end weights
- Ability to lock brakes together
- Fixed drawbar height

4.9 Explain how each of the following operating procedures can reduce the potential for tractor upset.

- Driving at an appropriate speed
- Driving in appropriate gear
- Setting wheel base as wide as possible
- Staying away from steep slopes, ditches, and riverbanks
- Lowering front-end loader bucket when transporting or turning
- Being a smart/aware operator
- Locking brakes together when traveling at higher speeds and on public roads
- Adding tire ballast and weights
- Hitching towed loads only to the drawbar
- Reducing speed when turning, crossing slopes, and on rough terrain
- Reducing speed when backing up
- Driving forward down steep slopes
- Backing up steep slopes
- Backing out of stuck or mired situations
- Slowing down when operating tractors with rear-mounted equipment

4.10 Identify the following hazards to bystanders of agricultural tractors and machinery and explain appropriate safety measures the operator should take to protect bystanders from each hazard

- Collapsing components
- Thrown objects
- Runovers
- Blind spots
- Unexpected start-up of machinery
- Excessive noise

4.11 Explain the hazards associated with operating a tractor or other internal-combustion engine-powered machine inside a building.

- Fires
- Carbon monoxide poisoning

4.12 Identify the following locations on the tractor that can potentially lead to severe burns.

- Cooling system
- Exhaust system
- Hydraulic components
- Battery (chemical burns)

4.13 Identify the following hazards associated with using tractor-drawn wagons, carts, and tillage equipment.

- Rollovers
- Runovers
- Falls
- Extra riders
- Contact with utility lines
- Stopping capacity

4.14 Explain the potential electrocution hazard associated with overhead power lines and explain the appropriate safety measures that should be followed by operators of agricultural tractors and equipment to prevent overhead contact with power lines.

4.15 Explain the hazards associated with underground utilities and related safety measures for operators of agricultural tractors and equipment.

4.16 Explain the dangers associated with the recoil energy of tow ropes, chains, and cables.