

8.1 Explain how each of the following characteristics of well-maintained agricultural tractors and machinery make it safer for the operator to use.

- Increased productivity
- Fewer breakdowns
- Less plugging/clogging
- Reduced operator exposure to hazards
- Reduced physical effort
- Reduced stress

8.2 Explain how an operator can use each of his or her senses to warn of potential hazards.

- Hearing – loose components, exhaust leaks, slipping belts
- Smell – overheated components, overcharged battery, smoke, electrical short, coolant leaks
- Sight – leaking fluids; smoke; accumulation of trash; loose, damaged, or missing components; plugged feeder housing
- Taste – electrical short, overcharged battery
- Touch – vibrations, overheated components, wear on components

8.3 Identify and explain the function of the basic types of personal protective equipment (PPE), including:

- Eye protection (safety glasses/goggles)
- Hearing protection (ear plug or muffs)
- Hand protection (chemical and work gloves)
- Feet protection (safety shoes/boots)
- Respiratory protection (dust masks and respirators)
- Broad-brimmed hat
- Sunscreen
- Hard hats
- Long pants and shirt sleeves
- Sunglasses

8.4 Identify and describe at least five of the following characteristics of a safe shop or service area.

- Accessible and convenient location
- Equipped with appropriate personal protective equipment (PPE), fire extinguishers, first-aid supplies, and means of communication in the event of an emergency
- Well maintained and organized
- Non-slip flooring and proper drainage
- Adequate lighting
- Adequate and properly-grounded electrical outlets (three-prong outlets)
- Adequate ventilation
- Appropriate storage for hazardous materials (lockable fire cabinet)
- Tools properly guarded
- Oxygen, acetylene, propane, and other tanks secured
- Eye wash station

8.5 List the correct steps for safe lifting

- Good footing
- Bend at the knees
- Good grip
- Lift straight up – avoid twisting
- Lift with leg muscles
- Reverse the process for lowering the object

8.6 Describe the following safety measures for using jacks and hoisting equipment.

- Identify load capacity of the lifting device
- Do not exceed the load capacity of the lifting device
- Stabilize or secure load with solid blocks or jack stands before working on it
- Lift no higher than is necessary to complete task
- Inspect jack and hoist components for wear or damage before use
- Do not use concrete blocks

8.7 Explain the following basic rules for safe use of hand tools.

- Select the right tool for the job
- Use tools as they were intended
- Keep tools in good condition and sharp
- Store tools when not in use
- Clean and inspect tools after use

8.8 Explain the basic safety procedures for safe power-tool use, including the following:

- Grinders
- Drills
- Saws
- Welders
- Bench grinders
- Reciprocating saws

8.9 Explain the following four ways to prevent electrical shock when using power tools.

- Three-conductor, grounded-type circuits
- Double-insulated tools
- Ground-fault circuit interrupters (GFCI)
- Proper size/gauge extension cord

8.10 Know the following fundamental safety procedures that should always be followed prior to servicing or repairing any piece of powered agricultural equipment.

- Shut off power to the equipment
- Remove the key or lock out the source of power
- Lower or lock raised components into position
- Ensure that all stored energy has been released
- If electricity is involved, use a non-contact voltage detector to insure the flow of current has been stopped

8.11 Locate and interpret the warnings found in the operator's manual related to completing each of the following tasks:

- Fueling equipment
- Inflating a tire
- Checking air filter
- Checking the cooling system
- Jumpstarting a machine with a discharged battery