

Toolbox Talks

Farm field and farmstead equipment safety

Introduction

Farmers and agricultural employees work in one of the most dangerous occupations in the world. They are exposed to numerous hazards such as heat, pesticides, electrocution, grain bins, and other life-threatening hazards. Perhaps the most important hazard, however, is exposure to farm field and farmstead equipment.

Definitions

“Farm field equipment” means tractors or implements, including self-propelled implements, or any combination thereof used in agricultural operations. Note: agricultural tractors are included in this definition, but require additional training. Please see the Toolbox Talk on [agricultural tractor safety](#) for more information.

“Farmstead equipment” means agricultural equipment normally used in a stationary manner. This includes, but is not limited to, materials handling equipment and accessories for such equipment, whether or not the equipment is an integral part of a building.

Responsibilities when operating equipment

The majority of agricultural machinery-related accidents are the result of human errors, such as taking shortcuts to save time, failing to read the operator's manual, ignoring a warning, improper instruction or lack of instruction, failure to follow

safety rules, and improper maintenance or lack of maintenance.

Safe machine operators respect machines for the work they perform and the dangers they present.

In order to become a safe machine operator:

- Learn to operate your machinery properly. Use the operator's manual as a guide.
- Learn the hazards involved with machinery operation; be proactive and anticipate dangerous situations.
- Be alert at all times when operating machinery. Take breaks and get sufficient food and rest to stay alert.
- Always follow recommended safe practices for operating machinery.

Understanding the equipment

Always read and follow the operator's manual and warning labels before operating. Never attempt to operate the equipment until you have read and understood this material. If you have questions, ask your supervisor.

Hazards of farm field and farmstead equipment

- Pinch points are areas where two or more parts move together with at least one part moving in a circle. For example, the areas where drive belts contact pulleys or where

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sprockets mesh with chains are pinch points.

- Crush points are areas where two components move toward each other. Examples of crush point hazards are raising and lowering equipment with a three-point hitch, components that are moved by hydraulic cylinders, and the areas between the tractor and machinery when hitching or turning.
- Wrap (entanglement) point hazards pertain to any exposed rotating component. Wrap-point hazards include any type of rotating shaft or driveline. Power Take Off (PTO) drivelines are prime examples of wrapping or entanglement hazards.
- Pull-in point hazards involve machine components that draw in crops or other materials for processing. These components include combine headers, windrow pickups, forage chopper headers, and grinders. When a tool held by a worker becomes caught in this type of machine, he/she is usually pulled into a machine before even thinking to let go of the tool.
- Shear and cutting point hazards are areas where two parts move across one another or one moves across a stationary object. Windrower cutter bars and grain augers are examples of cutting and shear points.
- Thrown objects present another type of machine hazard. Metal, glass, wire, sticks, or other materials may be picked up by a machine and propelled with extreme force. Rotary mowers are good examples of machines capable of throwing objects.

- Burn point hazards are associated with tractors and self-propelled and pull-type machinery. Hot mufflers, engine blocks, pipes, and hot fluids are examples of burn points.
- Stored energy hazards are present in pressurized systems such as hydraulics, compressed air, and springs. The sudden or unexpected pressurization or depressurization of these systems can result in crushing and other types of accidents, depending on the use of the system. High-pressure leaks are also forms of stored energy hazards.

Machine guarding

Machines may never be operated without all guards and shields in place, especially PTO guards. Keep all guards in place when the machine is in operation.

If you must remove a guard to perform some type of maintenance (like cleaning or clearing a jam), always be sure to lock the machine out before maintenance begins, in order to prevent it from starting, becoming energized, or releasing stored energy. Be sure to replace the guard when the maintenance work is completed.

Riders

Most farm field equipment is intended for only one person. No riders are permitted on any machine that is not designed for such use.

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Performing service and maintenance

If you need to service, adjust, clean, or provide some other type of service or maintenance, always be sure to stop the engine, disconnect the power source, and wait for all machine movement to stop.

Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

Lock out electrical power before performing maintenance or service on farmstead equipment.

Electrocution

Workers may be electrocuted when farm field equipment such as a grain auger contacts overhead power lines. Farm field equipment constitutes a serious electrocution risk because it is capable of being elevated, is used near overhead power lines, is typically made of conducted materials and is likely to be wet from rain or irrigation water, etc.

Prior to using such equipment in an elevated fashion, be sure to check for overhead power lines. If there are power lines in the area, DO NOT USE THE EQUIPMENT.

If you are operating the equipment and accidentally contact a power line, or a power line falls on the equipment, you should try to remain in the operator's seat, and call for help on a cell phone. If this is impossible and you MUST leave the seat, be sure to jump out of the seat to the ground, landing on both feet, and walk away from the area.

NEVER make simultaneous contact with the equipment and the ground.

Questions

If you have questions on this topic, please contact the Office of Occupational Health and Safety at (612) 626-5008 or uohs@umn.edu, or see the website at <http://www.ohs.umn.edu>.