

Skid-Steer Safety

Sammy Sadaka,
Ph.D., P.E.
Assistant Professor -
Extension Engineer

Introduction

Skid-steers are large equipment that can be used for a variety of farm jobs. They are valuable “work-horses” for many farms. Larger skid-steers are familiar at building sites because of their higher power, while smaller skid-steers with better maneuverability are useful for landscaping and gardening jobs.

Recent reported accidents related to skid-steers emphasize that staying alert is vital for operators and their co-workers. Unfortunately, one moment of carelessness while being around a skid-steer may result in broken bones, an amputation, a crushed torso or possibly death. For instance, in one accident an operator was pinned under an overturned skid-steer loader on a manure pile. In another incident, a worker was fatally crushed. Several co-workers have been run over when they failed to get clear of a loader’s path when it changed directions. According to the National Traumatic Occupational Fatalities (NTOF) surveillance system, the major types of accidents resulting from skid-steers are (1) pinning between the bucket and frame or between the lift arm and the frame, (2) crushing, (3) rollovers (4) pinning between the loader and another object and (5) run overs.



The previously mentioned incidents suggest that skid-steers can be dangerous if workers do not observe certain safety precautions. Also, some employers may not fully appreciate the potential hazards associated with operating or working near skid-steers. Others may disregard the need to follow safe work procedures and bypass interlocks and other safety features. Therefore, the objective of this fact sheet is to explore the safe operating procedures while working with skid-steers to prevent injuries and death cases.

Safe Work Habits

To prevent accidents with skid-steer loaders, read and follow directions in the equipment operator’s manual.

Following are some important actions to take in order to have a safe job site. These actions may also be applied while working with the majority of farm equipment.

*Arkansas Is
Our Campus*

Visit our web site at:
<http://www.uaex.edu>

- **Learn all you can about your equipment:** Read the manual and pay attention to safety orders. Also follow the warning labels on the equipment.
- **Concentrate on working safely:** Do not take risky shortcuts. Remember that an accident can leave you permanently injured or cut your life short.
- **Take precautions:** Do not operate machinery if you are tired or have taken drugs or alcohol. If you are on medication, discuss with your doctor or pharmacist prior to operating machinery.
- **Maintain good housekeeping:** It should be mentioned that many farm accidents could be prevented with good housekeeping. The payoff from making safety an integral part of everything you do is a better quality of life for you, your family and those who work for you. Accordingly, most safety procedures can be adopted into your routine.
- **Steps:** Keep the steps free of mud, debris and ice. Replace the steps if the non-slip surface becomes worn.
- **Attachments – Front and Rear:** Make sure that attachments are mounted and fastened correctly. The sudden release of an attachment can cause a load to drop, making the loader unstable and possibly injuring bystanders.
- **Fluid Leaks:** Observe and avoid any fluid leaks. They can cause the loader to break down. Fluids can also be a fire hazard.

Safe practices rarely require more time or money.

Pre-Start Inspection

Safety starts before the engine. Every day, you should walk around the skid-steer loader to see that it is ready for safe operation. Below is a sample checklist for daily, visual, pre-operation inspection:

- **Tires:** Check the tires for proper tire inflation. Information on the tire pressure could be found on the sidewall of the tire.
- **Cab:** Do not operate the loader if the cab frame or side screens are damaged or appear to have been altered. Check with a qualified person.
- **Safety Belt and Bar:** Do not operate the loader if the safety belt and safety bar are damaged. They work together to keep you securely in the driver's seat during operation. Damage to either of these safety devices can lead to serious injury.
- **Grab Handles:** Check the grab handles. Your hands can easily slip off worn-out grips causing you to fall or lose control of the loader.
- Enter the loader when the bucket is flat on the ground or when the lift-arm support device is in place.
- Face the seat when entering the loader and keep a three-point contact with handholds and steps.
- Keep all walking and working surfaces clean and clear of debris.
- Enter only with the engine off, lift arms down and attachments on the ground.
- Never use the control levers as grab bars.
- Use the steps made for entering.
- Fasten your safety belt.
- Lower the safety/restraining bar (if so equipped).
- Make sure controls are in neutral and the parking brake is set.
- Clear the area of people.
- Start the engine.
- Test all controls: steering, forward, reverse, raise and lower lift arms and attachment controls.

Skid-Steer Entering and Start-Up

Workers are crushed and killed by moving parts when they do not climb into the skid-steer loader safely. To prevent accidents, enter according to the manufacturer's instructions.

- Check the brakes.
- Check the horn and backup alarm (if so equipped).
- Never leave the operator seat without first raising the operator seat bar (if so equipped), lowering the lift arms (or engaging the lift arm restraints) and stopping the engine.

Skid-Steer Operation

Follow these steps while operating skid-steers:

- Don't overload a bucket or attachments or carry a load which could fall. Lifting attachments can change the weight distribution of the loader. Attachments can also affect the loader's stability and handling response. Be sure you can keep the machine under complete control at all times.
- When changing buckets or installing attachments, make sure all connectors are securely fastened.
- Never modify your skid-steer's rollover protective structure. Doing so could result in severe injury or death.
- Know and avoid the pinch points and rotating parts on the loader.
- Never allow an untrained individual to operate the machine. Read the operator's manual. Participate in a training course offered regularly.
- A skid-steer loader is a one-person machine. **Never permit riders!** Don't use the bucket for a work platform or personnel carrier. An extra rider has no protection should any type of accident occur. Overturns are a common type of accident. An additional rider is often crushed when a skid-steer loader turns over.
- Never overload the lift with hay bales, bales of cotton or materials that could injure someone if they fall. Keep the loaded bucket level as lift arms are moved and as the loader climbs slopes or traverses ramps.
- Always look around before you back up or swing an attachment. Be sure that everyone is in the clear. Keep others away from the area of loader operation.
- Always keep the seat belt/operator restraint fastened.
- Never attempt to work the controls unless properly seated. Keep all of your body inside the cab while operating a skid-steer loader.
- Avoid sudden stops, starts or turns. Operate controls smoothly – don't jerk the steering.
- Carry the bucket low for maximum stability and visibility. Any load should be carried high enough to clear floor or ground obstacles but no higher than necessary.
- Raise loads slowly and at an even rate. Be ready to lower the load quickly if the machine becomes unstable.
- Never drive across excessively steep slopes.
- Watch out for overhead obstructions. Poultry houses, cotton gins, fertilizer storage, etc., may have low-hanging electrical wiring. Walk through the area where you expect to operate because wiring is easier to see on foot, especially if the area is poorly lighted.
- When raising a load, especially in a poultry house, make sure it clears the lower beam of the roof trusses and the door opening.
- Poultry houses vary from 30 to 40 feet wide. Consider the fans, roosts and other components that narrow the area available for turning around.
- Don't get close to the trench wall when backfilling. Never operate a skid-steer too close to the edge of an overhang or gully. The edges could collapse, or a slide could occur.
- Never undercut a high bank.
- Don't lift loader arms too high or roll the bucket too far back when handling materials that could fall into the operator's compartment.
- Watch out for obstacles and adjust speed to conditions.

- Routinely check the brakes and adjust them properly.
- Never attempt maintenance or other work under the bucket or around the lift supports without installing sturdy blocks or safety supports under the bucket. Guards and shields are to protect you, so don't fail to replace them after repairs or service.
- Safety interlocks and "operator-present" controls are a vital part of your protection. To bypass them puts your well-being at risk and may add to your liability should someone else be injured.
- Be cautious when operating the loader with the bucket raised by using the moderate speed. Also, be cautious operating at high speeds with the bucket just above the floor or roadway. The bucket may catch on something when crossing a footing or bouncing over a ridge.
- Place the controls in neutral.
- Cycle the controls to relieve hydraulic pressure.
- Make sure the controls are locked (if so equipped).
- Turn the engine off.
- Remove the ignition key.
- Unbuckle the safety belt and raise the safety bar.
- Exit according to manufacturer's instructions using the steps on the loader and the grab handles for support.
- Block the wheels if there is a chance the loader will roll.

Never lift, swing or move a load over anyone.

Skid-Steer Shutdown and Exit

Many operators are killed trying to climb out of the cab without observing safe shutdown procedures. Protect yourself by always following these precautions.

- Park on a level surface.
- Set the parking brake.
- Lower the lift arms and attachments to the ground.

Sources

- Skid steer loader safety for the landscaping and horticultural services industry. KState Research and Extension.
[http://www.ksre.k-state.edu/agsafe/training/KSRE%20Skid Steer Loader Safety%20Booklet.pdf](http://www.ksre.k-state.edu/agsafe/training/KSRE%20Skid%20Steer%20Loader%20Safety%20Booklet.pdf)
- Preventing injuries and deaths from skid-steer loaders. (2010). National Institute for Occupational Safety and Health.
Retrieved from <http://www.cdc.gov/niosh/docs/2011-128/pdfs/2011-128.pdf>

Acknowledgment is given to GARY HUITINK, former Extension agricultural engineer, and to DR. THOMAS COSTELLO, associate professor of biological and agricultural engineering, University of Arkansas, Fayetteville, for their contributions to the first edition of this fact sheet.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

SAMMY SADAKA, Ph.D., P.E., is assistant professor - Extension engineer with the Biological and Agricultural Engineering Department, University of Arkansas System Division of Agriculture, in Little Rock.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director, Cooperative Extension Service, University of Arkansas. The University of Arkansas System Division of Agriculture offers all its Extension and Research programs and services without regard to race, color, sex, gender identity, sexual orientation, national origin, religion, age, disability, marital or veteran status, genetic information, or any other legally protected status, and is an Affirmative Action/Equal Opportunity Employer.