

A Trainers Guide to Tractor Safety



Preface

Notes to the Trainer

This is a guide to assist the instructor with agricultural tractor safety training. Because it is general in nature, it is not possible to cover every situation.

This guide is not a substitute for specific operating manuals provided by manufacturers of tractor equipment.

The inexperienced operator who lacks the skill and knowledge of tractor operation will need to receive additional training beyond what is presented here.

How to Use This Guide

This guide is separated into six sections.

Sections 1 and 2 provide basic tractor safety instruction which should be included in every training session.

Sections 3 through 5 discuss training and testing techniques.

Section 6, "Documentation," covers the importance of training records.

To enhance the learning experience, the guide should be reviewed with the employee and customized for your farm operation. Interactive training is generally best; however, there are sections that the employee can read on his or her own.

Throughout the guide, there will be items highlighted as "Special Notes." These are specific activities that will help with training and documentation.

Why Use Different Sections of This Guide?

Each section incorporates its own unique training format. Format refers to the way the material is presented.

The use of multiple formats can increase the likelihood that the information will be remembered. It also enhances the quality of your training.

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Section 1: Inspecting Your Tractor

To operate a tractor safely and effectively, you must be familiar with the operating controls, limitations, warning, and safety devices of your tractor

Before operation, the operator should do a safety check of the tractor, likewise, conduct the check at the end of the shift.

This Safety Check May Include:

- Tires
- Brakes
- Fuel
- Water
- Oil and Other Fluids
- Fuel or Fluid Leaks
- Guards and Other Safety Devices
- Roll-over Protective Structure (ROPS)
- Seat Belts (if tractor is equipped with ROPS)
- Controls (Hydraulic & Non-Hydraulic)
- Lights, Horn, Signs, & Reflectors
- Missing, Damaged, Broken or Lost Part(s)
- Ect.

During the Inspection:

- Read the tractor manual to help identify which conditions may make your tractor unsafe to operate.
- You may want to use a customized checklist to do this inspection.
- When checking fluids under pressure and other systems, use appropriate lockout, tagout and blockout procedures and wear personal protective equipment.
- Report deficiencies so that they can be fixed.

Inspection Checklist

On page 3 is a sample checklist that you can use to inspect your tractor.

- Be sure to change or add items that apply or are appropriate to your situation.
- Practice doing an inspection on your tractor.
- Have all trainees complete an inspection similar to the list on page 3.



General Farm Vehicle Inspection Record

Company Name _____ Inspector's Name _____

This record is for the week beginning _____ Year _____

Instructions: Place a mark after each item inspected. (A checkmark "✓" indicates items are satisfactory. An "X" indicates an item needs attention.) Note deficiencies and correction of those deficiencies in the "Remarks" section.

Inspection Items	Vehicle Description: _____						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Tires							
Brakes							
Fuel							
Water							
Oil							
Other Fluids							
Fuel or Fluid Leaks							
Guards							
Safety Devices							
ROPS							
Seat Belts (If the tractor is equipped with ROPS)							
Controls							
Hydraulic Controls							
Horn							
Lights							

Remarks _____

Signature of Inspector/Operator _____ Date _____

Section 2: Safe Operations

In this section, various safety rules and operating procedures will be covered. Try to think of and cover any other procedures, hazards or safety rules that would apply to your situation.

Cal-OSHA Required Safety Procedures

Part of the Cal/OSHA requirements state that every employee who operates an agricultural or industrial tractor shall be instructed at the time of initial assignment and at least annually thereafter in safety procedures and any other practices dictated by the work environment.

These Safety Procedures include the following "Employee Operating Instructions."

1. Securely fasten your seat belt if the tractor has Roll-Over Protective Structures (ROPS).
2. Where possible, avoid operating the tractor near ditches, embankments, and holes.
3. Reduce speed when turning, crossing slopes, and when on rough, slick or muddy surfaces.
4. Stay off slopes too steep for safe operations.
5. Watch where you are going, especially at row ends, on roads and around trees.
6. Do not permit others to ride on the tractor.
7. Operate the tractor smoothly-avoid jerky turns, starts or stops.
8. Hitch only to the draw bar and hitch points recommended by the tractor manufacturer.
9. When the tractor is stopped, set brakes securely and use park lock if available.

Special Note:

Conspicuously post the Employee Operating Instructions at a location frequented by the drivers.

Being safe means not only following the Employee Operating Instructions mentioned previously but also being aware of hazardous circumstances that may be unique to your operations. Pages 4 through 7 explain a few more.

Safe Fueling

To help avoid fire or explosion hazards, do not fill your fuel tank while the engine is hot, running or smoking. Keep fuels away from ignition sources.



Make sure engine is cool and turned off.



Engage brake during fueling.

Lockout, Tagout & Blockout

Take precautions to Lockout, Tagout and Blockout your equipment if you must clean, maintain, repair or clear it.

You could become pinned or entangled in your equipment if the proper precautions are not taken.

Example of a Lockout Tag

⚠ DANGER

Safety Lockout Tag
Do Not Operate!

Tag Must Remain Intact Until Removed By Authorized Employee:

Name _____
Date _____
Time _____

Maintenance Description

Immediate Supervisor

Public Roads

When on public roads, obey applicable traffic laws. Many serious accidents involve collisions between tractors and normal passenger vehicles. Be especially careful when making left-hand turns. Lock brake pedals together.



Driver is obeying applicable traffic laws

“Slow Moving Vehicle”

Make sure your tractor has the correct signs and devices when traveling on public roadways. These may include signs like the “Slow Moving Vehicle” (SMV) emblem. See Department of Motor Vehicles code to the right.



Tractor above is displaying the SMV emblem.

California Department of Motor Vehicles Slow-Moving Vehicle Emblem

Section 24615. It is unlawful to operate upon a public highway any vehicle or combination of vehicles, which is designed to be and is operated at a speed of 25 miles per hour or less, unless the rearmost vehicle displays a “slow-moving vehicle emblem,” except upon vehicles used by a utility, whether publicly or private owned, for the construction, maintenance, or repair of its own facilities or upon vehicles used by highway authorities or bridge or highway districts in highway maintenance, inspection, survey, or construction work, while such vehicle is engaged in work at the jobsite upon a highway.

Any other vehicle or combination of vehicles, when operated at a speed of 25 miles per hour or less, may display such emblem. The emblem shall be mounted on the rear of the vehicle, base down, and at the height of not less than three nor more than five feet from ground to base. Such emblem shall consist of a truncated equilateral triangle having a minimum height of 14 inches with a red reflective border not less than 1¾ inches in width and a fluorescent orange center.

This emblem shall not be displayed except as permitted or required by this section.

Amended Ch. 287, Stats. 1971.
Operative May 3, 1972

Climbing Onto and Out Of A Tractor

Climb onto your tractor carefully, always using the three points of contact rule. Use all the mounting points. Make sure your foot surface is slip resistant and stepping surface is clear of mud or other debris. Slipping and falling can be very dangerous, especially if you fall onto something sharp or hot.



Operator above is using the tractor's steps and hand holds.

Tractor Starting

Make sure you are seated with seat belt on in the tractor before starting the engine. Operators have been run over because they tried to start their tractor while standing to the side of it.

Because exhaust gases contain carbon monoxide and other contaminants which can seriously hurt or kill you, avoid starting and running your tractor in enclosed areas or where there is poor ventilation.



Driver is seated before starting engine.

Know Your Tractor's Limitations

Pulling loads that are too heavy or not recommended can cause tractor upsets or affect the operating controls such as braking or steering.



This tractor is pulling a load it can handle safely.

Power Take Off (PTO)

Use implements in accordance with the manufacturer's recommendations, especially those using power Take-Off (PTO). Be sure that all PTO shields and implement driveline safety devices are in place and in proper working order.

Inadequately guarded PTO (s) can entangle you, causing serious injuries. Avoid wearing loose clothing and accessories. Secure long hair before working near any machinery.



PTO is covered when not being used.

Jump Starting

Before jump starting any vehicle, check manufacturer's recommendations for connections.

1. Wear protective eye and body wear.
2. Keep away from ignition sources. Gases from batteries can be very explosive.
3. Never attempt to jump start a frozen battery-it may explode. Be sure vent caps are in place and covered with a damp cloth, if appropriate.
4. If another vehicle is being used, do not let the vehicles touch each other at any time and make sure batteries are of the same voltage.
5. Turn off all unnecessary electric/live loads.



White truck in background contains charged (good) battery.

Cable Connections

While many jump starting connections will follow this order, check the manufacturer's recommendations to be sure.

1. Connect one end of the designated positive cable to the positive terminal (+) of the discharged "bad" battery. Do not let the positive cables touch each other or any metal other than the correct battery terminals.
2. Connect the other end of the designated positive cable to the positive terminal of the charged (good) battery.
3. Connect one end of the designated negative cable to the negative terminal (-) of the charged (good) battery.
4. Finally, connect the other end of the designated negative cable to the engine block or other metal areas that will provide an effective ground of the stalled vehicle.
5. Stand clear and start the vehicle with the charged (good) battery, then try to start the vehicle with the discharged (bad) battery.
6. Remove the cables in the reverse order that they were attached.

Staying Alert

Be mentally and physically prepared to drive your tractor. Be rested and alert if you're going to operate a tractor. Do not drink alcohol or take any drugs which may impair you mentally or physically.

Take breaks if you feel fatigued or sleepy. The monotony of tractor operations has caused accidents by lulling the operator to sleep. Drink plenty of water to help to avoid dehydration.

Following safe operating procedure, rules and practices is important for preventing tractor accidents. Your knowledge and experience will also help. It is important to use good judgment when operating a tractor. Both you and the company share the responsibility for preventing accidents.



Drinking plenty of water fights dehydration.

Special Note:

After reviewing the material in this section, have each employee fill out, sign, and date the appropriate space on the Receipt and Acknowledgement Form on the following page. Remember, it is better to review this material with your employees and supplement the basics with information specific to your work environment.

Receipt & Acknowledgement Form

I, _____, acknowledge by
Please print first & last name

my signature below that I have read (or had someone review the information with me) and understand the information within Section 2, "Safe Operations," pages 4 through 7 of State Fund's "A Trainer's Guide to Tractor Safety" manual.

Signature: _____ Date: _____

Section 4: Written Test

Instructors need to know if their employees adequately understand the information presented and can apply it to their work environment. While there are various ways to do this, one common method is to administer a test. This section includes a sample written test.

Have our employees take a written test like the one on the following page. Add additional questions to address situations unique to your operations. Once everyone has completed their test, review the answers with the group. Keep the completed test for a record of training documentation.



A test will help verify that your employees understand the information presented.

Tractor Safety Test

Name _____ Date: _____

Circle the correct answer.

1. If your tractor has a Roll-Over Protective Structure (ROPS):

- a. using your seat belt is optional
- b. you should remove it if your tractor is missing the seat belt
- c. you should securely fasten your seat belt
- d. a seat belt is unnecessary

2. A safety check:

- a. should be done before you operate your tractor and at the end of your shift
- b. is not really necessary because mechanics regularly check your tractor
- c. is your supervisor's responsibility
- d. is only necessary when your tractor is at least 5 years old

Circle "True" or "False"

3. When running a power take-off (PTO), all shields and safety guards must be in place.

True _____ False _____

4. It is possible to hurt yourself during a safety check if you are not careful.

True _____ False _____

5. A SMV sign indicates a Slow Moving Vehicle.

True _____ False _____

6. It is not necessary to shut off your vehicle when fueling it.

True _____ False _____

7. Not reducing your speed when making a turn can cause your tractor to overturn.

True _____ False _____

8. Permitting passengers is allowed if there is room on the hitch.

True _____ False _____

9. If your tractor is stopped, you should set the brakes securely and use park lock, if available.

True _____ False _____

10. Starting and running your tractor in an enclosed area is not dangerous if it is running properly.

True _____ False _____

See answers to test on Page 15

Section 5: Tractor Driving Course

Integrating a “hands-on” or “doing part” into your training program will go far in providing training that is both memorable and realistic. Even though this is a simulation, it still adds a sense of realism to the training. By observing your employees on the course, you can verify they have the basic skills necessary to operate a tractor safely.

Identify Weak Areas

Simulations help identify weak areas. Doing a simulation as part of your training helps identify areas where practical experience may be needed. It also helps to verify that the employee understands how to operate the tractor. The more realism in your simulation, the better it will be.

Explaining the Tractor Driving Course

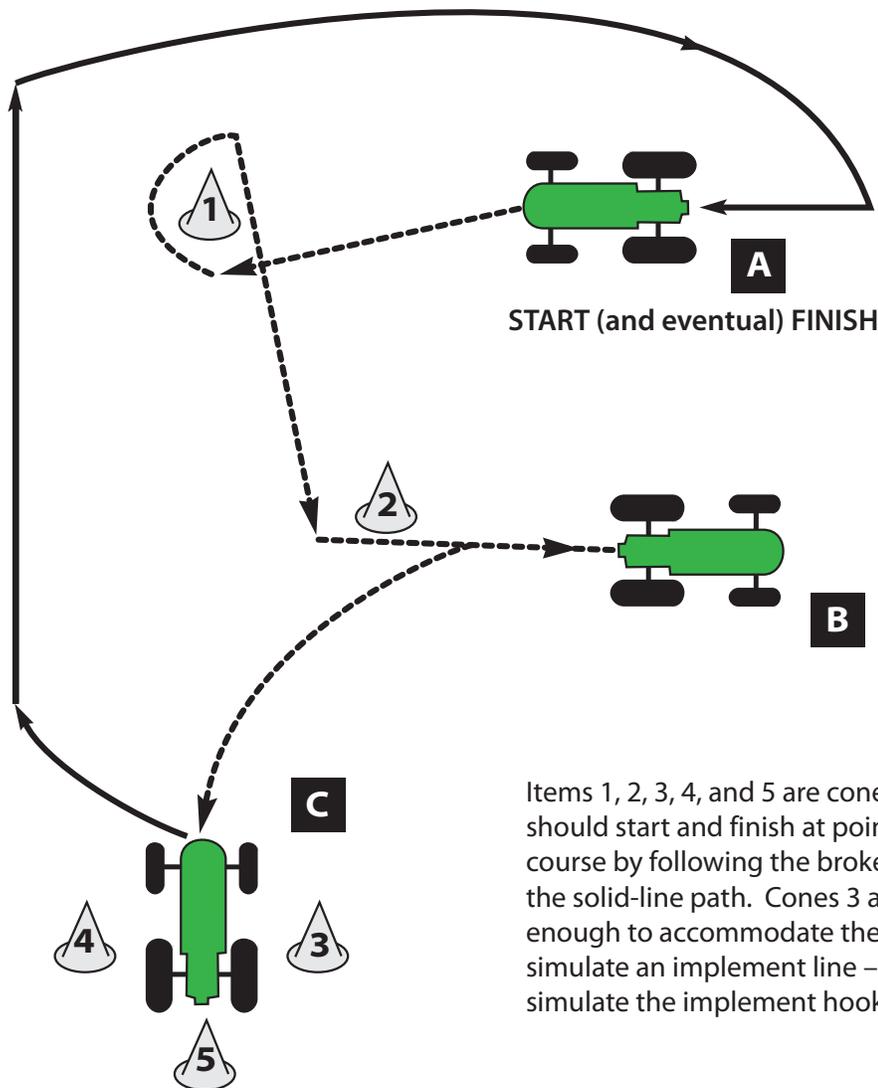
Explain that the simulation is part of your overall training program. Explain how it will help make the information presented more memorable. Before their participation, make sure that the employees are familiar with the controls and safety features of the tractor they will be driving.

Special Note:

Set up a course similar to the one on the page below.

- Add or change the course to simulate situations in your operations.
- Have each employee go through the simulation and record the observation on the Tractor Observation Form.

Tractor Driving Course



Items 1, 2, 3, 4, and 5 are cone positions. Tractor driver should start and finish at point “A.” Drivers begin the course by following the broken-line path and finish along the solid-line path. Cones 3 and 4 should only be wide enough to accommodate the tractor width. This will help simulate an implement line – up. Cone 5 should help simulate the implement hook-up portion.

How to Use Tractor Observation Form

Use the form on page 14 to record observations of employees that conduct the tractor driving course. Keep the completed form as proof of documented training.

- A** The first portion asks general information, such as company name, date, evaluator, and observer's signature.
- B** This portion contains the instructions for the form.
- C** In the boxes provided under "Employee names," write the names of the employees who will be participating in the simulation.
- D** Under "Observation Activities," add any additional activities that you will be observing in your simulation. Add or change this portion to match situations in your operations.
- E** In the boxes to the right of the numbered observation activities and below the spaces where you would have written in the names of the participants, make check marks as you observe the activity for a given employee.
- F** Once you have observed all the activities for a particular employee, have them initial in the last box below their name.

Formulario de observación de tractores

Nombre de la compañía **A** _____ Fecha _____

Evaluador _____ Firma del observador _____

Instrucciones: Una vez que usted observe al empleado llevando a cabo la actividad, coloque una marca de verificación debajo del nombre del empleado junto a la actividad observada. Tenga presente que las actividades que se enumeran a continuación son de naturaleza general. Pueden haber cambios o adiciones que deban hacerse a fin de que la simulación corresponda con las situaciones que se presenten en sus operaciones. **B**

		NOMBRE DEL EMPLEADO				
ACTIVIDADES DE OBSERVACIÓN				C		
1. Inspección de seguridad (llantas, frenos, sistemas hidráulicos, guardas, pernos de rueda, etc.)						
2. Uso de controles (arranque del motor, apagado, sistema hidráulico, frenos, cambios de velocidad, etc.) D						
3. Enganchado o conexión de un implemento						
4. Desconexión de un implemento					E	
5. Conducción del tractor hacia adelante y hacia atrás						
6. Giros y conducción con un movimiento circular						
Una vez observado, haga que los empleados anoten sus iniciales debajo de sus nombres. F						
	<i>iniciales</i>	<i>iniciales</i>	<i>iniciales</i>	<i>iniciales</i>	<i>iniciales</i>	<i>iniciales</i>

Tractor Observation Form

Company Name _____ Date _____

Evaluator _____ Observer's Signature _____

Instructions: Once you observe the employee conducting the activity, make a check mark below the employee's name next to the activity observed. Bare in mind that the activities listed below are general in nature. There may be changes or additions that need to be made so that the simulation matches situations in your operations.

		EMPLOYEE NAME				
OBSERVATION ACTIVITIES						
1. Safety Inspection (tires, brakes, hydraulics, guarding, wheel bolts, etc.)						
2. Use of controls (engine start, shut off, hydraulics, brakes, gears, etc.)						
3. Hitching or connecting an implement						
4. Disconnecting an implement						
5. Driving the tractor forward & backward						
6. Turning and driving in a circular motion						
Once Observed, have employees write their initials below their name.						

initials

initials

initials

initials

initials

Section 6: Documentation

Throughout this guide, there was reference to documentation that should be filled out when a certain activity is completed. Filling out and keeping documents of training activities serves several purposes. One purpose serving as proof of training provided.

Importance of Documentation

These documents help serve as a written record of the training activity provided. They may be useful for checking to see when and for whom training was provided.

They may also serve as proof to a regulatory agency such as Cal/OSHA that training was provided. Filling out and keeping these documents also helps communicate that your company values training being provided.

Special Note:

Keep a record of the training provided. This record serves as a time-line document and as proof. Although several documents were mentioned throughout this guide, it is especially important that you fill out the "Safety Training Record" (page 16) each time training is provided. This single document will serve as a master document of the training provided throughout this guide. Once completed, keep a photocopy for your records.

Answers to the Tractor Safety Test (Page 11)

1. c. You should securely fasten your seat belt
2. a. Should be done before you operate your tractor and at the end of your shift.
3. True
4. True
5. True
6. False
7. True
8. False
9. True
10. False

This product was developed for you by State Fund, your partner in loss prevention. We recognize that your loss prevention efforts can affect the frequency and severity of illnesses and injuries in your work environment. Our experience shows that with informed planning and education, workplace injuries and illnesses can be reduced or eliminated. We are committed to the belief that a safe workplace can increase worker productivity and lower your workers' compensation costs. The safety and well-being of our insured employers and their employees is the primary concern of State Fund. We know you will find this information helpful in educating and encouraging your employees to establish and maintain a safe working environment.

Safety Training Record

Date _____

Company Name _____

Trainer's Name _____

Trainer's Signature _____

Topic: **Agricultural Tractor Safety**

Check Items Covered

- Inspecting Your Tractor
- Safe Operation
- Video: _____
- Written Test
- Simulation Course
- Other: _____

Participant Signatures:

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |