Electrical Transmission & Distribution Partnership

Continuing Education Training

-Equipment Spotter Safety

Presenter Guide

-4th Quarter 2019
This page intentionally left blank
**Introduction**

The Equipment Spotter Safety continuing education course is a facilitator led process. The facilitator may choose to augment the material with company specific materials, videos, handouts or other media to enhance the learning experience. The facilitator may want to incorporate visual aids to enhance the presentation.

Using this material combined with practical experience, good presentation skills, and knowledge of adult learning techniques, the facilitator has a greater opportunity to deliver the information effectively.

Microsoft® PowerPoint® combined with good instructional skills and instructor/student dialogue help with information retention and understanding. PowerPoint® presents the information to the attendee and the facilitator summarizes the content of the slides. It is critical to engage and involve the attendee in the process. Ask open-ended questions that will elicit conversation and discussion, but be cautious to maintain control of the discussion.

Conversation and scenarios are good, but can cause the discussion to run long. If it seems like the group is losing focus during the course, the facilitator can direct the group back on track by using comments like “This is a great discussion, but let’s get back to the subject at hand”.

Another tool is the “Parking Lot” which is simply a newsprint chart or dry erase board or note pad where the facilitator records unanswered questions during the meeting and that may require more research. It is vital to capture any ongoing discussions or questions on the “Parking Lot” and follow up when the information is known.

Deliver this continuing education module in the fourth quarter of 2019. Delivery time is approximately 1 to 1.5 hours in one setting, or divided-up into three, twenty to thirty minute settings. It is critical that the facilitator makes him or herself familiar with the material prior to delivery.

At the end of this document is one handout. The presenter can use these handout as well as relevant examples in conjunction with the PowerPoint® presentation to augment the materials. The handout may also serve as a stand-alone document. Also included with this module are two videos from Komatsu regarding spotter safety and working around moving equipment. The entire run time form both videos combined is just over 5 minutes. The presenter may use these videos at his or her discretion.
This page intentionally left blank
Introduce the module. Explain that the intent of this presentation is as a continuing education training topic related to certain aspects from the ET&D 10-Hour OSHA training class, the OSHA Partnership Best Practices, and/or incident trending analysis.

Slide 1-2

**Objectives**

Upon completion of this continuing education module you should be able to:

- Define Spotter
- Understand “WHY” spotters are necessary
- See examples of equipment danger zones
- Discuss the Spotters Responsibilities
- Provide examples of common spotter hand signals

Explain that this is fourth quarter, 2019 ET&D Continuous Education Topic. Read and explain the Objectives for course. Announce that we will begin by explain why to use spotters and by defining a spotter.

Slide 1-3
Discuss that in this next section we will discuss the “Why” a spotter should be utilized by reviewing some recent injury/fatality statistics from the construction industry as well as from the 2017 ET&D Partnership Statistics.

Slide 1-4

**Common Event**

**DAILY NEWS**

Road worker killed when he was run over by backing equipment.
Laborer killed when he fell off of and was run over by a backhoe he was riding on.
Truck driver crushed between loading dock and trailer.
Worker injured when struck by backing vehicle.

Explain that this is a brief list of news headlines from the Occupational Safety & Health Administration website regarding employees being fatality injured when not following safe work practices in and around moving equipment.

Slide 1-5

Presenter Tip: Engage the group by asking if anyone has any firsthand knowledge of any near misses or events regarding vehicles/equipment?
**Fatality Statistics**

Type of Vehicle causing the most Back-over fatalities (2005 through 2010)

- Dump truck 67
- Semi truck 40
- Straight truck 30
- Forklift 21
- Garbage truck 20
- Pick-up truck 16

---

**Fatality Statistics by Age**

- Under 20: 5%
- 20 - 24: 3%
- 25 - 34: 10%
- 35 - 44: 21%
- 45 - 54: 27%
- 56 - 64: 22%
- 65 & over: 21%

Source: Bureau of Labor Statistics

---

State that these are fatality statistics by age from the Bureau of Labor Statistics
State that these statistics originate from ET&D Injury Stats regarding the leading cause of injuries within the companies represented by the Partnership. It is important to note that vehicle/equipment related injuries are classified as Struck By or Caught Between. When these two categories are combined, they rank as the 2nd leading cause of injuries.

Slide 1-8

The definition of a spotter is someone trained to recognize hazards the driver/operator may not otherwise see while operating or moving equipment.
Explain that these are common causes of backing accidents. Discuss that each piece of equipment has different blind spots and danger zones. Workers should not rely solely on backup alarms to alert coworkers because of worksite noises or the backup alarms not functioning properly. Some jobsites can become very congested and conditions are always changing which can lead to drivers/operators becoming unaware of other vehicles entering or exiting the work location. Driver/operators should never allow themselves to become distracted and should always be looking in the direction of travel. Unauthorized riding on vehicles/equipment is prohibited on any project or jobsite.

Discuss that some project owners may require different rules as to when a spotter is needed or necessary for moving vehicles/equipment.

End Session One
Session One Key Points

Slide 1-11

The presenter should have touched on the following items when delivering session one:

1. A spotter is someone trained to recognize hazards the driver/operator may not see.
   - a. True
   - b. False

2. The spotter should also consider lateral and overhead hazards when spotting.
   - a. True
   - b. False

3. Blind Spots are a leading contributor to backing accidents.
   - a. True
   - b. False

4. Struck-By/Caught-Between accidents (combined) were the 2nd leading cause of injuries within the ET&D Partnership?
   - a. True
   - b. False
Begin Session Two

Slide 2-1

Discuss that this section reviews some common industry equipment and show the Blind Spots/Danger zones.

Slide 2-2

Presenter Tip: Discuss with the group that these danger zones are identified during the Job Hazard Analysis (JHA) process and discussed with jobsite workers during the job briefing and with visitors upon their arrival. A good practice is to conduct a job review to determine the safest approach to equipment as well as identifying “no-go” zones.

Restate to the group that every piece of equipment has different blind spots and danger zones. Some pieces of equipment have additional danger zones, such as equipment with rotating parts or articulating sections. Due to this, it is important to identify the required travel path needed to move/operate the equipment. It is always important never to approach machinery without gaining the attention of the operator. Always keep non-essential workers clear of the construction area.
Presenter Tip: Discuss with the group that these danger zones are identified during the Job Hazard Analysis (JHA) process and discussed with jobsite workers during the job briefing and with visitors upon their arrival. A good practice is to conduct a job review to determine the safest approach to equipment as well as identifying “no-go” zones.

Restate that since every piece of equipment has different blind spots and danger zones the next few slides will illustrate the extent of those blind spots. Explain that the shaded areas show potential blind spots for the operator. The red dot indicates the operator’s position. Re-emphasize that it is important never to approach machinery without gaining the attention of the operator. Always keep non-essential workers clear of the construction area.

Man Lift – With the operator’s eyes at 10-feet above ground level the danger zone extends 95-feet to the rear of the machine!
Slide 2-5

Common Backhoe – Discuss that with the operator seated, the operator’s eyes are approximately 7-feet above ground level. The danger zones are in the shaded areas.

Slide 2-6

Bulldozer – With the operator’s eye level 6-feet above ground level the danger zone extends 18-feet to the front of the machine and 16-feet to the rear of the machine.
Front End Loader – With the operator’s eye level 10-feet above ground level the danger zone extends 21-feet to the front and 28-feet to the rear of the machine.

Skid Steer – With the operator’s eye level 5-feet above ground level the danger zone extends 21-feet to the rear of the machine.
Common All-Terrain Fork Lift – With the operator’s eye level 7-feet above ground level the danger zone extends 85-feet to the passenger side of the machine.

Common Semi-Truck and Trailer – With the operator’s eye level 6-feet above ground level the danger zone extends 40 feet to the front of the vehicle. It is important to note that the driver cannot see to the rear of the vehicle. The dark shaded area is referred to as the “No-Go” zone.
Discuss with the group that it is important to be aware and alert when working near moving vehicles/equipment. Do not allow yourself to become distracted. Always maintain a safe distance, and never approach or operate equipment unless authorized to do so. By wearing reflective clothing, you make yourself more visible to operators.

End Session Two
Session Two Key Points

Slide 2-12

The presenter should have touched on the following items when delivering session two:

1. You should never approach machinery without first acknowledging the operator.
   a. True
   b. False

2. Non-essential employees should be kept clear from worksites.
   a. True
   b. False

3. You should always wear reflective vest when working near moving machinery.
   a. True
   b. False
State that this section is a review and discussion of spotter responsibilities. The spotter must watch out for others as well as for themselves. They must keep enough distance between themselves, other workers, and non-workers in the immediate vicinity and moving equipment. They must ensure the vehicle does not cause unnecessary damage to property. Explain that this may appear as an easy task, but there are many dangers involved.

Discuss that in order to be successful the driver/operator and the spotter must develop a safe work plan and then execute that plan, together.

Points of discussion:
✓ Positioning
✓ Backing
✓ Movement
✓ The plan

Trainers Tip: Effective 3-Way Communication (Transmit, Receive, Verify) is a great tool to utilize when discussing the plan, this tool will help to eliminate assumptions.
A discussion of the planned movement shall take place between the spotter and the driver/operator prior to executing. Most importantly, if the plan is not followed or the driver/operator loses sight of the spotter the driver/operator shall immediately stop.

Slide 3-3

**Responsibilities**

The operator shall stop the machine

- Prior to losing sight of the spotter
- Upon losing sight of the spotter

Discuss that if at any time, the spotter anticipates losing site of the operator or loses site of the operator, the immediate action is to STOP! The same hold true for the operator in relation to the spotter.

Slide 3-4

**Responsibilities**

In order to have an unobstructed view stand at the driver’s side

- Only one person signals
- The driver must understand the signals
- Discuss with the driver before any movement
- Explain the signals that will be used
- Allow for stopping distance and clearance

Discuss that the spotter must stand in a location that is unobstructed from the drivers/operators view, preferably along the driver’s side of most equipment. Always, before proceeding discuss with the driver/operator the plan of action.
Many larger vehicles need more distance for stopping so it is a good practice to warn the driver/operator that they are nearing a stopping point. Establish the signal to be used during the job planning stage of the operation.

Slide 3-5

**Standard Rules**

- Use the same signals for the same moves
- Hand signals are better than vocal signals
- If the driver is unclear about the signals stop the vehicle immediately
- Drivers/operators should never assume what the spotter is signaling

**Presenter Tip:** If communications such as radios are used, it is critical to perform frequent “radio checks” to ensure they are working.

Discuss that it is important to use the same signals for the same moves to avoid misunderstanding. Hand signals are generally much better than vocal signals. Because of noise, a shouted signal is unheard or misunderstood. Reiterate to the group that if the driver is unclear at any point about the spotter’s signals, the vehicle stops immediately! Never assume what the spotter is signaling, if there is any doubt STOP.

Slide 3-6

**Responsibilities**

- When spotting, concentrate on spotting
- Maintain eye-contact with the driver/operator
- If anyone give the stop signal, the driver/operator **STOPS** the equipment

Review with the group that when spotting, concentrate on spotting and do not allow yourself to become distracted. At any time, anyone can issue a STOP signal. If there is any doubt as to the meaning of the signal then Stop!
Discuss that in the next few slides we will show the common hand signals used when engaged in spotting vehicles/equipment. This is not an all-inclusive list; however, it is important that the driver/operator and the spotter agree of the hand signals prior to moving vehicles/equipment.

Stop – The most important hand signal. Stop all movement and await further instruction. Remind the attendees that if the stop signal is given, no matter who gives it, all machine movement must stop!

**Presenter Note:** The title at the top of the slide in the slide presentation states:

“What is the Signal?”

This is different from what is shown in this guide. The purpose here is to allow the presenter to ask the attendees to name the signal, and anticipate the signal name prior to triggering the slide animation.
Move Straight

Move the machine in a straight line forward or to the rear.

Turn

To turn the vehicle either to the right or left while vehicle is backing.
Because some equipment needs more time to stop it is a good practice to warn the driver/operator of the distance before stopping. Use this signal to provide the driver a visual reference for the distance to stopping point.

Slide 3-12

Use this signal to move the vehicle forward.

End Session Three
Key Points Session Three

Slide 3-13

The presenter should have touched on the following items when explaining session three:

1. Drivers, operators, and spotters must work together to maintain a safe work site.
   
   a. True
   
   b. False

2. If the driver or operator is unsure of the signal given by the spotter, they should stop operations immediately.

   a. True
   
   b. False

3. If the driver, operator loses site of the spotter they should re-position the equipment until they re-establish site of the spotter.

   a. True
   
   b. False
Take this time to answer any remaining questions. Thank the attendees for their time. Document as required by company policy.
Basic spotter hand signals. Spotters typically use hand signals to communicate with vehicle drivers. It is vital for the driver and spotter to agree on particular hand signals and their meanings. This prevents misunderstandings that could cause equipment damage and/or injuries.