

EXCAVATOR SAFETY... OPERATING AND SPOTTING FOR AN EXCAVATOR

COURSE OUTLINE

- **You should never rush into using an excavator.**
 - Knowing how to prepare to operate it can help you in the long run... and even save lives.
- **First, you need to be mentally as well as physically ready to operate such a heavy piece of equipment.**
 - This means making sure you get enough sleep, food, and water beforehand.
 - If you're fatigued or dehydrated, the likelihood that you'll make a mistake while operating any equipment increases significantly.
- **The same thing can happen if you're not mentally "balanced".**
 - If you're feeling angry, sad, or just distracted, you should take time to "cool down and focus" before you operate an excavator.
- **Once you are ready to go, you should read and understand everything in the excavator's operator's manual.**
 - It should be in the machine at all times.
- **You can then begin your "pre-shift inspection," to confirm that all of the excavator's parts are working correctly.**
- **First, you should check out anything that you can look at when the motor is turned off. This includes...**
 - Fluid and oil levels.
 - Potential leaks in the hydraulic cylinders.
 - Loose, worn or damaged parts on the cab, bucket, boom or tires.
 - Damaged labels.
- **Remember to wear protective equipment.**
 - Gloves are especially important when you're checking for hydraulic leaks.
- **Never use your hands to look for leaks within hydraulic cylinders.**
 - Instead, use the "cardboard test", running a piece of cardboard along the cylinder to see if it comes back wet or dry.

- **Then, with the motor on, verify that your controls are working correctly.**
 - Exercise them one at a time and make sure you can lift the bucket and move the boom smoothly.
- **Next check that your lights and signals all turn on and can be seen clearly.**
 - You may need another worker to help you with this.
 - If your excavator has a “back-up” alarm, make sure that it works and can be heard above the noise of your construction site.
- **Last, check your parking brake by putting your excavator in “park” and trying to move forward or backward.**
- **If any part of the excavator fails your inspection, do not use it.**
 - Notify your supervisor immediately and tag it “OUT OF SERVICE”.
- **If your excavator passes inspection, you can move on to surveying the site you’ll be working on. Look around the general area and note any...**
 - Debris.
 - Potholes.
 - Structures.
 - Overhead obstructions.
 - Marked underground utilities.
 - Vehicles, pedestrians, or other workers in the area.
- **Once you’re familiar with your jobsite and feel that you and the excavator are ready to go, you can get to work.**
- **When you’re using an excavator, staying aware is how you stay safe.**
 - These powerful machines are vital parts of many construction projects, but if you don’t know how to operate one safely, you can put lives in danger.
- **Because excavators are so large, they can be difficult to mount.**
 - If you rush, you could slip and fall.
 - Falling from that height could cause serious injuries.
- **So take your time and maintain “three points of contact”.**
 - At least two hands and a foot or two feet and a hand, on the excavator at all times.

- **Once you have a good grip, pull yourself up and slowly rotate your body into the cab.**
 - Never use controls as step stools or handles.
- **Adjust your seat so that you can comfortably reach the controls.**
 - If you're not comfortable, it could very well lead to some type of ergonomic injury.
- **Don't forget to fasten your seatbelt.**
 - In the event of a collision or tip-over, it could save your life.
- **When you start your engine, let it warm up for a few minutes before moving.**
 - This will help make sure that you have a smooth ride.
- **The operator's manual may have information that is specific to your machine's start-up procedure as well.**
 - So be sure to read it thoroughly.
- **When you are traveling with an excavator on a jobsite, you can sometimes use "two-speed travel mode" to move along more efficiently.**
 - But when you are working at a higher speed, you have to be very cautious.
- **You should also make gradual turns instead of sharp ones.**
 - If you're in a really tight space, try doing a "pivot-turn".
 - This involves keeping one track stationery, while the other track pivots the excavator to one side.
- **When you're excavating or trenching, it's important to maintain control of the excavator's bucket.**
 - So you shouldn't move too fast or overload it.
- **You also need to know the bucket's "swing radius".**
 - Understanding how far your bucket can swing helps you determine when other workers or structures are too close.
- **Using "trench boxes" can help prevent the ground from caving in during excavating projects.**
 - "Trench boxes" are steel or aluminum frameworks that are inserted into a trench to secure the sidewalls.

- **If you need to “backfill” a trench, use smooth bucket movements and control your swing.**
 - Starting or stopping suddenly can put you and other workers in danger.
- **Whatever you’re doing, keep your excavator’s bucket low to the ground as you travel, so you can see your path as clearly as possible.**
- **When you’re ready to “call it a day”, it’s important to park and shut down your excavator safely.**
 - First, find an open, level place.
 - You want to avoid parking anywhere that will block fire hydrants, exits or entrances, or emergency equipment routes.
- **Next, lower and uncurl your bucket so it’s resting on the ground.**
 - Put all the controls in “neutral” then set the parking brake.
 - Let the motor run for a few minutes to allow it to cool down.
- **Then shut down the excavator and dismount, using the process you did to get on, but in reverse.**
 - Keep both hands and a foot or both feet and a hand on the machine at all times.
 - Take your time, and be especially careful if the machine has gotten muddy or slippery.
- **Excavators aren’t just potentially dangerous for the person operating them.**
 - They can hurt people on the ground, too... especially “spotters”.
- **When operators have limited visibility, they will sometimes use a “spotter”.**
 - It’s the spotter’s responsibility to safely guide the operator where they need to go.
- **If you’re the “spotter”, before the operator mounts the excavator you should have an agreed-upon “action plan”.**
- **Be sure to discuss...**
 - Where the excavator’s blind spots are.
 - Any hazards in the area.
 - The planned movement and positioning of the excavator.
 - The hand signals you’re going to use.

- **Common hand signals that spotters use include...**
 - “Stop”.
 - “Continue” (“Keep Moving”).
 - “Move Right”.
 - “Move Left”.
 - “Slow Down”.
- **To signal “Stop”, most spotters will hold up one or both hands with closed fists, or with an open palm held forward.**
 - So you need to discuss which version of the signal you’re going to use with the operator.
- **To signal the operator to “Keep Moving”, you should...**
 - Raise your arm with a bent elbow.
 - Then wave the top part of the arm in a motion away from the vehicle.
- **In instances where the excavator won’t be moving in a straight line, you’ll have to know the “Move Right” and “Move Left” hand signals.**
 - The most common way to do this is to hold your arm out straight, with a finger pointing in the direction the operator should move.
 - Then, use the other hand to signal that they should “Keep Moving”.
- **To help prepare the operator to stop smoothly, you will need a motion that tells them to “Slow Down”.**
 - Here, you hold one arm out and move your hand up and down while keeping your palm face down.
- **Everyone should know the universal “Emergency Stop” signal.**
 - Repeatedly pointing both hands toward your chest to form an “X”, then away from you, and back in again.
- **When you’re acting as a spotter, you need to wear high-visibility clothing.**
 - You should also stay out of the excavator’s “blind spots”.
 - Don’t position yourself directly behind or in front of it, either.
- **Keep a safe distance away and stay in the operator’s line of sight.**
 - Watch your step as you’re moving.
 - If you’re so focused on the excavator that you forget to look where you’re walking, you could trip on a rut or some debris.

- **It's also critical that you pay attention to what's going on around you.**
 - Construction sites are busy places, and if you allow your mind to wander it could have serious consequences for you and the excavator operator.

*** * * SUMMARY * * ***

- **Before you use an excavator, you need to make sure you are physically and mentally ready to operate heavy equipment.**
- **You should always do a pre-shift inspection to confirm that the excavator you're using is safe to operate.**
- **Always maintain “three points of contact” when you're mounting or dismounting an excavator, to avoid slipping and falling.**
- **When you're driving an excavator, use “pivot-turns” when you need precise control, and keep the bucket low to the ground.**
- **If you're a spotter for an excavator operator, talk with them beforehand to determine what hand signals you will use.**
- **Now that you know how an excavator works and the hazards that can be associated with using one, you'll be able to finish jobs easier and faster... while keeping yourself and your coworkers safe, every day!**