

TOOLBOX TALKS

Struck-by Toolbox Talk # 1

How Can We Be Safe Around Equipment?

Ask the following questions and give time for answers.

What are the hazards? Employees working around heavy equipment are exposed to pinch points, back-in-to, run-over, and back-over hazards when working in proximity to heavy equipment and construction vehicles.

What are the results? Serious bodily harm including, injuries to the head, back, extremities and internal organs. These types of struck-by incidents can result in life-changing injuries and are often fatal.

What should we look for? Blind spots, congested work areas, multiple trades working in a single work space, malfunctioning or disconnected back-up alarms, pinch-points between machinery/vehicles and fixed objects, vehicular traffic in and around work zones (road construction).

Here is an example of a recent struck-by related fatality:

A worker was killed in 2015 in Washington County, Pennsylvania when he was struck by a utility vehicle that was backing up in the work area. The employee, became trapped beneath the utility truck, was in a blind spot and was not seen by the driver. The 43-year-old worker suffered injuries to his head, chest, and abdomen and was pronounced dead at the scene.

How do we prevent these incidents?

- Avoid equipment blind spots where you can go unseen by operators/drivers
- Respond to back up alarms and ensure their proper function
- Use spotters to warn operators/drivers of nearby workers and hazards
- Always determine a route of escape
- Always wear high-visibility/reflective clothing in accordance with your company's and DOT requirements

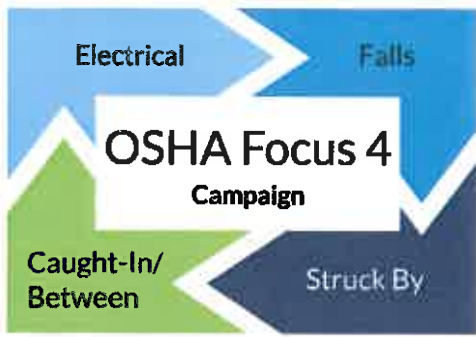


*Source: CPWR



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TOOLBOX TALKS

Struck-by Toolbox Talk # 2 Struck-by Incident

Incident: In January 2015, an employee working in a trench was struck-by an excavator bucket, which was removing soil from the excavation, resulting in a broken hip. The employee was severely injured and did not return to work for 30 months.



What could have been done to prevent this incident?

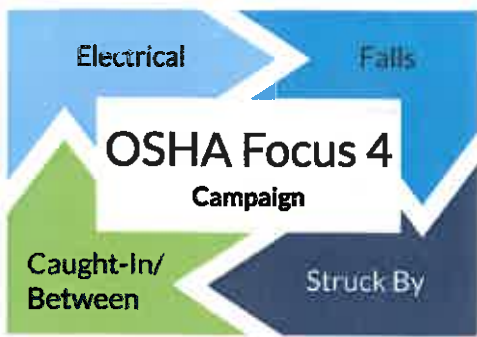
1. Before beginning trenching or excavation operations, a job hazard analysis (JHA) should be prepared and reviewed by all involved in the operation.
2. Daily huddles should be conducted every day to ensure everyone understands where and how the work is taking place.
3. Workers should be trained to stand clear of bucket work, at a distance where the bucket cannot accidentally strike the worker.
4. Operators should be trained not to move the bucket if a worker is inside the swing radius of the bucket.
5. If something changes from the plan, stop work and revise and review the plan with the workers involved.
6. Ensure workers working around heavy equipment are wearing high visibility, fluorescent outer-wear.
7. Workers should stay out of the blind spots of a machine, and in a place where they can easily make eye contact with the operator before entering the bucket swing radius.
8. All workers should be trained on working around heavy equipment.
9. All workers operating machinery should be trained on the specific machine on which they are working.
10. Stay alert when working around heavy equipment!

Discussion: Is heavy equipment being used at this site? Have there been any close calls or actual incidents at this site? What are we doing at this site to prevent struck-by incidents?



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TOOLBOX TALKS

Struck-by Toolbox Talk # 3

Work Zone Driving

Drive towards ZERO crashes—Your driving actions and habits can save lives, including yours!

Know the work zone signs. They are the metal plaques that inform and warn you, but there are other devices and other indicators that tell you about the work underway, mark the path you should follow, and help you navigate the work zone. Look for direction from cones, barrels, pavement markings, and other devices designed to get you safely through the work zone.

Pay attention to other drivers. It is never a good idea to ignore other drivers no matter where you're driving, but in work zones you need to be especially mindful of them. Roadway work zones are less forgiving than normal stretches of highways and streets. They often have narrower lanes and no shoulders to escape to in case you want to take evasive action.

Stay focused. Avoid distractions. Losing focus on your driving is bad in any situation, but it can prove deadly in roadway work zones. Observing what the signs tell you, controlling your speed, steering carefully, and keeping an eye on other drivers—all demand your full attention. Stop eating or drinking. Put down your mobile device. Keep your focus on your driving.

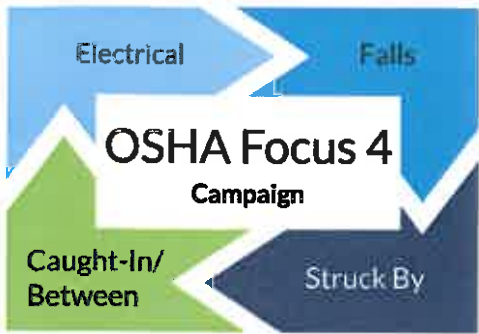
Expect the unexpected. When you drive in work zones, it's always best to prepare yourself for something unexpected, such as aggressive actions by other motorists, construction vehicles that slow down to leave the roadway and pull into the work area, dump trucks that emerge from the work area and enter your lane up ahead, workers operating scant inches from your path, uneven pavement lanes, and loose gravel on the road surface to name just a few. When you anticipate problems, you are better able to react to them appropriately.

Keep your cool. Be patient. Maintain calm. Don't get rattled by work zone situations. Always make sure your speed is appropriate to the situation; that could be slower than the posted limit. Finally, don't lose your patience or your temper. If you keep your cool, you and everyone else will make it through the work zone and arrive safely at their destinations.



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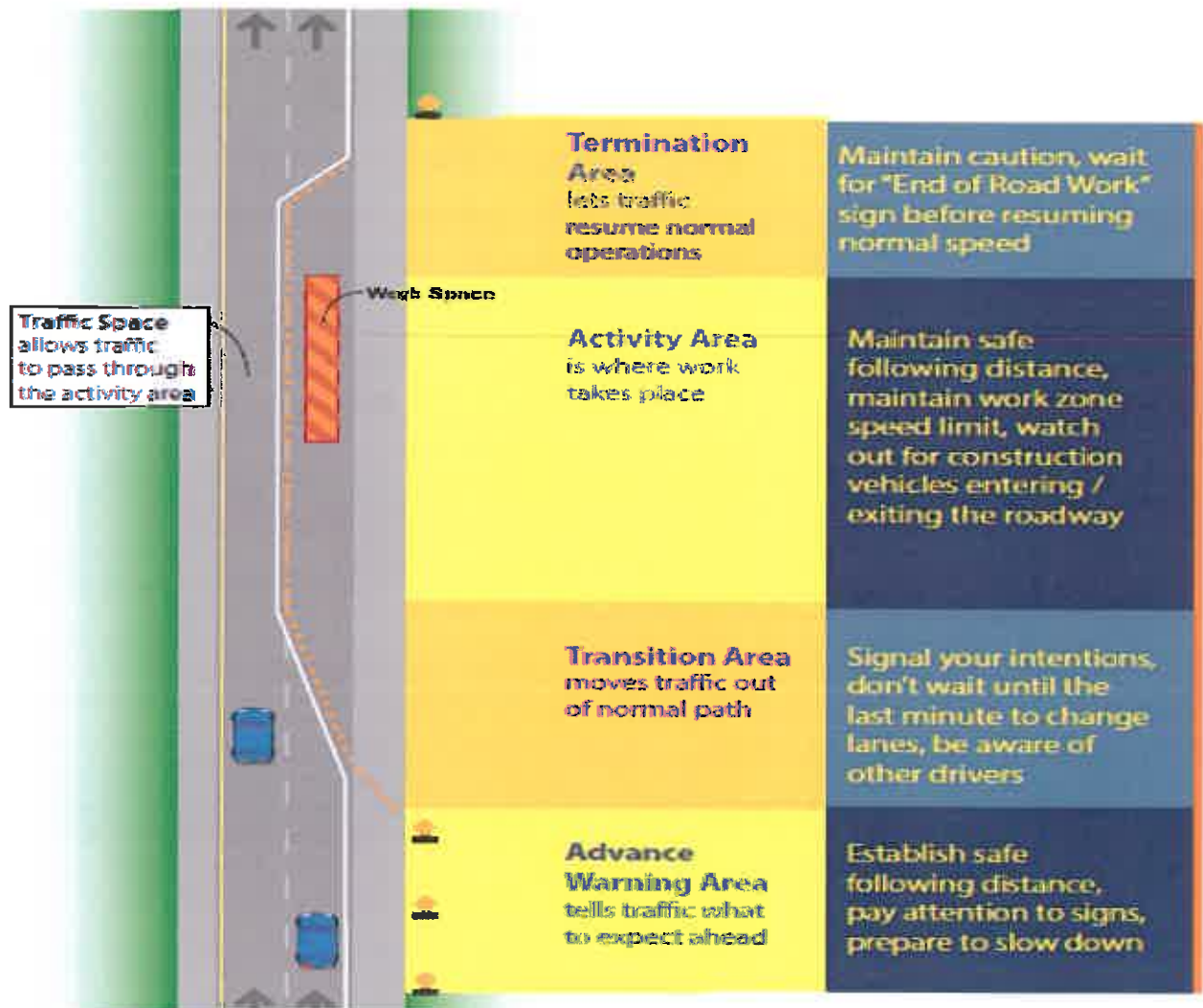
TOOLBOX TALKS

Struck-by Toolbox Talk # 3

Work Zone Driving (cont.)

Can you identify the areas of a work zone? Have you seen these areas as a worker or driver?

What precautions did you take when approaching the work zone?



Legend

- Work Zone
- Direction of Travel
- Traffic Signs
- Channelizing Devices (Cones, Drums, Bumpers)

Source: ARTBA and Work Zone Consortium

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Struck-by Toolbox Talk # 4

Equipment and Falling Objects

Being Struck by Falling Objects is a leading source of construction fatalities. Even a small object falling from a height can cause serious or fatal injuries.

Here is an Example:

In March 2017, a laborer was picking up debris at a construction site. A forklift was lifting a pile of lumber to the third floor next to him. The lumber was not secured and fell three stories from the forklift. One board struck the employee in the head. He was wearing a hard hat, but the incident left him with a concussion.

1. What could have been done to prevent this incident?
2. Are materials regularly being lifted by heavy equipment to upper levels on your worksite?
3. If so, what do you do to protect yourself when walking through the site? What do you do to protect others?

Prevent Being Struck by Equipment or Objects

- * Loads should not be hoisted or allowed to pass over people.
- * Loads need to be secured when lifted by forklifts, cranes, or any sort of material mover.
- * Hard hats can help minimize injuries to the head and therefore also protect your spine.
- * Toe boards need to be placed on all scaffolding, unprotected sides or edges, and open elevations to protect workers below from falling materials such as lumber, brick, tools, debris, nuts and bolts, nails, screws, and equipment.
- * Materials should be stacked and secured appropriately and not leaning or ready to topple over.
- * Tools in elevated working areas need to be secured if close to any change in elevation. There are new and improved tool lanyards available.
- * Even when taking all of the above cautions, items can shift, winds can gust or change, workers can lose their grip, someone can accidentally kick an object, or any number of other things can happen to allow objects to become airborne and drop to lower levels. So listen and watch as you walk the site; get off the cell phone; remove the earbuds or lower the volume of the music.

Let's talk about this jobsite. Record notes and share with appropriate parties

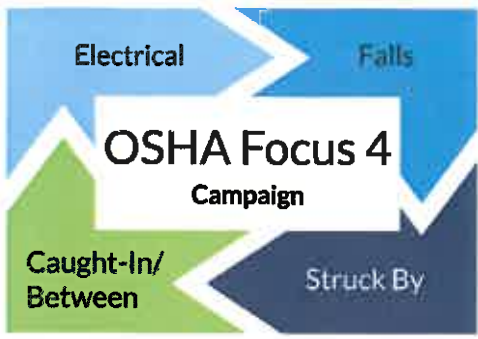
- * Are elevated loading areas or zones on this project and cordoned off to restrict entry?
- * Is there any area on this site that the Controlling Contractor should be told about to eliminate a potential falling object exposure?

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Struck-by Toolbox Talk # 5

Working Safely Around and/or Securing Loads

Ask the following questions and give time for answers.

What are the hazards of working around (suspended or moving) loads? Loads releasing onto workers from trucks or storage areas, materials dropped on workers while loading trucks or unstrapping loads

What are the results? Crushed or broken limbs, head injuries, amputations, death

What should we look for? Poorly stacked building materials, lopsided loads on trucks, loads not properly tied down, materials being lifted by cranes near work areas.

Actual Incident: A 45-year-old crane operator died while rigging a load. A tractor-trailer driver unstrapped the load to ready it for lifting. The operator climbed onto the load during rigging and it rolled off the trailer and crushed him. The tractor-trailer driver was not at a meeting earlier that day where drivers were told that their loads had to be kept strapped.

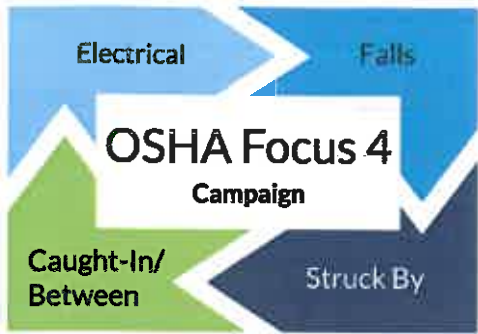
Ask the following question and ensure every item is covered.

How do we prevent these results?

- * Keep workers who are not involved in loading or unloading clear of loading areas.
- * Load materials for maximum stability. Distribute weight evenly and keep materials level. Secure loads following safe and appropriate industry practices.
- * Consider having a competent person inspect incoming freight to identify those that pose serious hazards during unloading.
- * Nail 2x4 boards to the floor of cargo areas to secure equipment with wheels.
- * Make sure cargo does not restrict driver's vision, free motion, exit from the vehicle, or access to emergency supplies.
- * Stack and store materials with no more than a 4:1 height to base ratio and keep materials back from the edge.
- * Perform rigging only if you are qualified. Choose the right equipment and inspect it prior to each use. Tag and take defective rigging equipment out of service!
- * Each day before use, slings and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer.

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Struck-by Toolbox Talk # 6

Head Protection

The **hard hat** is one of the oldest, most widely used, and most important pieces of personal protective equipment (PPE) on the job. However, the hard hat cannot do its job when it is not properly worn, maintained, and replaced when needed.

Actual Incident:

Bob and his crew were putting on a new roof on a house. During the day, Bob was cleaning up debris when a falling hammer struck his hard hat. Although he experienced pain and discomfort, Bob did not require hospital admission.

Ask the following questions.

Could this incident have been avoided?

Do you work at a job that requires you to wear a hard hat?

How do you inspect your hard hat for defects which would require your employer to replace it?

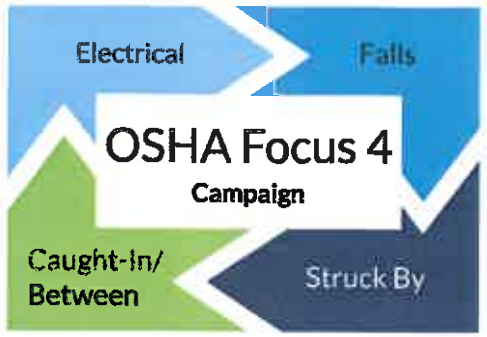
Warning and Precautions

- * Never drill holes in the hard hat shell for ventilation purposes.
- * Always wear your hardhat with the bill facing forward.
- * Always avoid contact between the hard hat and electric wires.
- * Never use a hardhat suspension that is not intended for use with a particular shell, or one that is made by a different manufacturer.
- * Never carry or wear anything inside of your hard hat between the suspension and the shell. A clearance must be maintained between the hard hat shell and the wearer's head for the protection system to work properly.
- * Ball cap or other object may limit clearance and shouldn't be worn under the hard hat.
- * Only wear products, such as winter liners or sunshades that are designed specifically to work in conjunction with hard hats. Be sure to follow the manufacturer's recommendations for use.



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Struck-by Toolbox Talk # 6 Head Protection (cont.)

Warning and Precautions (cont.)

- Consider inspecting the hard hat daily for the following: stiffness, brittleness, fading, dullness of color, or a chalky appearance. If the shell exhibits any of these conditions or if it is obviously otherwise damaged, it should be removed from service and replaced immediately. Some hard hats need replacing after 2 years of extreme temperature exposure; others may last longer. The interior suspension should be inspected closely for cracks or tears, frayed or cut straps, loss of pliability, or other signs of wear*.

What are the hard hat practices at this site? Have you seen any modified hard hats in use?

Are you checking and maintaining your hard hat in optimal condition?

*Reference: <http://elcosh.org/document/1449/d000504/taking-care-of-your-hard-hat.html>



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Struck-by Toolbox Talk # 7

Preventing Runovers and Backovers

Can you be safe near equipment and traffic?

Being struck-by a vehicle or piece of a equipment is the biggest danger in road work. Workers on foot must remain alert at all times. Check your surroundings often. Listen for warnings. Keep a safe distance from traffic. Stay behind barriers where possible. Look out for each other. Warn coworkers.

What about construction equipment? Treat equipment and vehicles with caution:

1. Stay out of “blind spots”.
2. Communicate with operators by radio and/or eye contact.
3. Don’t approach until you communicate with the operator and he/she acknowledges you.
4. Stay outside a “safety circle” around equipment. If you can’t see the operator, he/she can’t see you.
5. Stay clear of vehicles. Know the traffic control plan.
6. Use spotters when you must work with your back to equipment or traffic.

What other precautions do we need? Employers must provide proper personal protective equipment (PPE); Workers must wear it:

1. Proper class of safety vest at all times in the work zone.
2. High-visibility clothing and headgear.

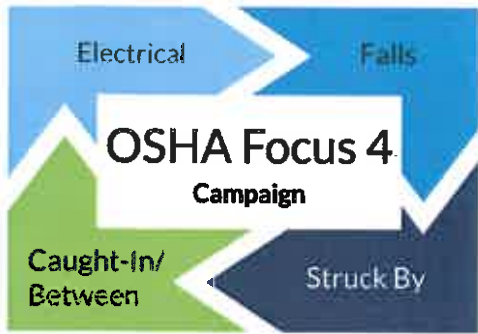


Discussion: *Do you know the difference between Class 1, 2, and 3 garments? What PPE are you using at this site? Have there been any close calls or actual incidents at this site? What are we doing at this site to prevent struck-by incidents?*

*Source: American Road and Transportation Builders Association

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Struck-by Toolbox Talk # 8

Road Work at Night

Why is night work hazardous?

Night work poses special hazards:

1. Reduced visibility for motorists.
2. Bright work lights produce glare.
3. Drivers, pedestrians, and workers are less alert and more likely to be tired.
4. Lower traffic volume results in higher vehicle speeds.
5. Increased truck traffic.
6. Workers are less visible.
7. Decreased visibility causes slips, trips, falls, runovers, and backovers.



What safety controls can be utilized?

1. Signs, channeling devices, other hardware set up to account for longer reaction times in low light.
2. Temporary work zone lighting to ensure good visibility.
3. Temporary lighting set to avoid glare and shadows for motorists, equipment, drivers, and workers.
4. Increased visibility of work vehicles, equipment, materials, and hazards.
5. Retroreflective high visibility safety apparel (Class 3) for all workers.
6. Internal Traffic Control Plan (ITCP) for construction vehicles and workers on foot.
7. Work schedules set up to allow enough sleep.
8. Use of law enforcement for visibility and/or presence.



Discussion: *What will we do at this worksite to prevent injuries while doing road work at night? Do you have a site-specific plan? Are you checking field lighting regularly for brightness?*

**Sources: CPWR and ARTBA*

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