

Chapter 1: Caught In Between

- Equipment: Barricading
- Circular Saws
- Dump Trucks
- Grinders/Abrasive Saws
- Machine Guarding
- Forklift Trucks
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- Pinch Points
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EQUIPMENT: BARRICADING

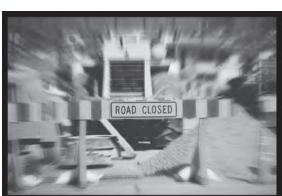
INTRODUCTION

- 1. Review any accidents or "near accidents" from the past week.
- 2. Describe the hazards of the work as they relate to your project. Explain or show the SAFE way of doing the job.
- Give the TOOL BOX SAFETY TALK

More than 100 people each year are killed by mobile heavy equipment— including backhoes/excavators, mobile cranes, road grading and surfacing machinery, loaders, bulldozers, and tractors —on construction sites. Besides using safe work practices, you can help reduce such accidents by installing barricades to alert others to the hazards created by construction activities. Follow these guidelines to help improve safety at your work site:

- Install barricades whenever necessary for the physical protection of people or property. Barricades may include temporary cyclone fencing or plastic safety fencing and should be used only until more suitable barricades can be erected.
- Use signage and illumination on barricades where appropriate.
- Install barricades to separate workers on foot, pedestrians, and vehicles from moving equipment, where possible.
- Set a limited access zone and/or a swing radius for each piece of equipment.
- Barricade the swing radius of each crane to prevent employees from entering the swing radius.
- Ensure that all mobile equipment is equipped with a warning device such as a backup alarm if the operator does not have a clear and direct view of the edge of the excavation. Some other good safety practices are use of hand signals from a flag person, stop logs, barricades, or other mechanical signals.





CIRCULAR SAWS

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Serious injuries can result from the use of portable and stationary power saws. The greatest hazard is that the operator risks contact with a turning blade. Accidents may occur if the operator is inexperienced, improperly trained or if the blade is not properly guarded.

- Be sure that portable circular saws have an upper guard that covers the entire blade of the saw and a retractable lower guard.
- Make sure hand-held circular, reciprocating, saber, scroll, and jig saws are equipped with a constant-pressure control switch.
- When using a hand-held saw, direct the blade away from the aisle and any people who are in close proximity to the saw.
- Use the proper blade for the material being cut.
- Maintain sharp blades.
- Always wear eye, face and hearing protection.
- Avoid loose-fitting clothes, jewelry and long hair that might become entangled in a power tool.
- Always use GFCI protection with electric corded powered circular saws.





DUMP TRUCKS

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- 3. Give the TOOL BOX SAFETY TALK

Dump trucks are common on construction sites, as they bring in materials such as gravel, sand and fill dirt, and carry out waste materials such as old bricks and excavated dirt. Dump trucks pose several hazards on the worksite, including risk of tip-over and the potential to run over someone while backing up or changing positions. Here are some safety tips that both dump truck drivers and workers on foot can follow to help prevent accidents:

- Ensure that operators are trained to recognize areas hazardous to dumping, such as soft or uneven surfaces and inadequately compacted fill.
- Do not exceed a vehicle's rated load or lift capacity.
- Do not drive a dump truck in reverse gear with an obstructed rear view unless the truck has an audible reverse alarm and another worker signals that it is safe.



- Before dumping, make sure the tailgate is unlocked and that the vehicle is on a reasonably level surface. Dumping on surfaces that are not level is one of the main causes of tip-over.
- Avoid dumping when parked side by side with another vehicle. When a dump unit tips over, it is often the operator in the adjoining vehicle who is injured. Dumping operations should be spread out.
- Make sure that other personnel such as dozer operators, surveyors, and spotters should be warned not to work near a dumping truck in case it tips over.
- Lower dump bodies when not in use, and leave all controls in neutral position.
- Set parking brakes when vehicles and equipment are parked, and chock the wheels if they are on an incline.



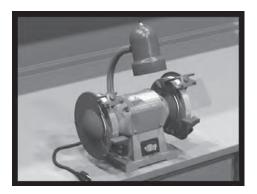
GRINDERS/ABRASIVE SAWS

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Abrasive saws and grinders are among the most common pieces of machinery used in maintenance shops. They are also among the most dangerous. Operators are at risk of injury from the power source, blade, wheel, or from a disk failure or hazard from flying or airborne particles. Remember, abrasive saws and grinders are cutting tools. A hand or a finger that hits the moving wheel surface is in danger of being mangled or cut off. Fortunately, there are ways to protect yourself from injury and illness when you work with these powerful machines. Take these precautions:

- Visually inspect and ring test new abrasive wheels before mounting.
- Make sure the machine guards are in place and working properly.
- Always leave the wheel in good working order.
- Turn the grinder off when not in use.
- Do not exceed the safe maximum operating speed marked on the blade, wheel or disc.
- Do not wear anything loose that could get caught in the machine. If you're wearing a long-sleeved shirt, button it at the wrist.
- Wear a face shield over safety glasses when using abrasive saws or grinders.





MACHINE GUARDING

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Employee exposure to unguarded or inadequately guarded machines is prevalent in many workplaces. Consequently, workers who operate and maintain machinery suffer approximately 18,000 amputations, lacerations, crushing injuries, abrasions, and over 800 deaths per year. Proper use of machine guards can help protect employee hazards related to the point of operation, power transmission devices, and operating controls. To ensure safety, it's important to use machine guards properly. Take these precautions:

- Do not attempt to by-pass machine guards in an effort to save time.
 Machine guards are there for your protection.
- Do not remove machine guards, except during repair or maintenance of the machine. Then, always use lockout/tagout procedures to protect accidental startup.
- Replace machine guards after repair or maintenance.



- Wear eye protection when cutting, sawing, drilling or grinding.
- Avoid wearing loose clothing or jewelry when operating power equipment. These could get caught in machines and drag you or parts of your body into the machinery.
- If using electrical tools always use GFCI protection.



FORKLIFT TRUCKS

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A forklift can be one of the most dangerous pieces of equipment in the workplace. A medium-sized forklift weighs about the same as the average dump truck and can cause just as much damage. According the U.S. Bureau of Labor Statistics, an average of 100 workers are killed and 20,000 are injured each year due to forklift mishaps. Forklifts can put workers at risk of being caught between equipment and materials, so take these precautions:

- Setup a controlled access zone. Separate forklift traffic and foot traffic where possible, including having workstations, control panels, and equipment away from forklift traffic aisles, or having barriers.
- Do not operate a forklift unless you are trained and authorized to do so.
- Make sure backup and lifting alarms are operational.



- When operating a forklift, drive slowly and watch out for pedestrians and blind intersections.
- Check maintenance records of forklifts on a monthly basis at a minimum.
- Watch where you place your hands and feet. Be aware of and stay clear of pinch points such as the wheels and lift gears.
- Stay under the overhead guard. Keep your hands and feet inside the forklift and wear the seat belt.
- Do not drive up to anyone standing in front of a bench or other fixed object.
- As a pedestrian, always be aware of the presence of forklifts in the area and keep a safe working distance from them at all times. Even at low speeds, an unexpected movement of the forklift can crush a bystander against a fixed structure or another vehicle.



NAIL GUNS

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Nail guns can be lethal weapons. Nail guns have the capacity to fire several nails per second at a velocity over 1,000 feet per second. With the squeeze of a trigger, they can drive anything from a small finishing nail into a piece of plywood, to a three-inch nail into wood and concrete block. When this projectile strikes a human body, the resulting damage can be severe, and sometimes fatal. Exercise extreme caution whenever using a nail gun.

- Always wear safety glasses when operating pneumatic tools, including nail guns. Make sure your helpers wear them too.
- NEVER dismantle or bypass safety devices such as triggers, guards, or bumpers.
- Do not hold the trigger down unless you're purposely firing the tool. Do not fire the tool unless the nose is firmly pressed against a work piece.



- Never point the tool at anyone. Treat a nail gun like a firearm. Always assume it is loaded and ready to fire.
- Always point the gun away from you when nailing materials. Never back-nail materials with the tip of the gun pointing toward your body.
- Always disconnect the air hose or power supply before clearing jams or adjusting the tool.
- Make sure the area behind the nailing is clear and/or protected from a nail penetrating through.



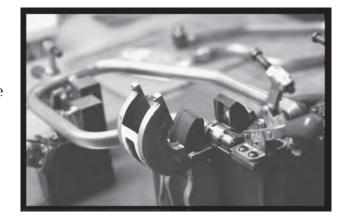
PINCH POINTS

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A pinch point is defined as any point where it is possible for a body part to be caught between moving and stationary portions of machinery or equipment. If a person or body part occupies that space during the pinching movement, there is a high probability of injuries such as fractures, amputations, or even death. Be aware of pinch point hazards on your job and take these precautions:

- Prior to use, make sure that all covers and protective shields for equipment and machinery pinch point hazards are in place. Never work around moving machines while the guards are removed.
- De-energize, lock-out, and tag equipment being repaired.
- Be on guard whenever you put your hands, fingers, toes, or feet "between" anything.



- Make sure you have the proper hand clearance when setting down loads or carrying loads through doors.
- Wear gloves that are appropriate for the task. Keep in mind, however, that gloves may cause an additional hazard during some tasks if they get caught in moving parts.
- Avoid wearing jewelry or loose clothing that could be caught in moving parts. Tie back long hair.



TRAILER HITCHES

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- 3. Give the TOOL BOX SAFETY TALK

Hitching trailers to trucks frequently involves potentially dangerous situations that can lead to accidents with serious consequences.

- Always know the hitch capacity. Never overload the hitch.
- Be wary of the ball size needed for the trailer you are using. Many accidents occur when too small a ball is used.
- Fingers are easily pinched when putting a trailer on a hitch. Make sure hands and fingers are clear before lowering the trailer onto the hitch.
- Use mechanical means where possible to hook a trailer onto a hitch. Always use proper lifting techniques when lifting a trailer.
- Never ride a hitch to see if it is working.
- Always use safety chains after hooking up a trailer to a hitch.





UNLOADING TRUCKS

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- 1. Review any accidents or "near accidents" from the past week.
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Loading and unloading materials, goods, and products from trucks is a daily activity in many businesses. It is also a regular and frequent source of workplace fatalities. Many injuries occur when workers are struck by equipment or materials, or caught between equipment and materials. Follow these safety tips to help prevent injuries:

- When unloading trucks, do not begin the "backing-in" process until a designated person is in place to assist and direct the driver.
- Use wheel chocks and other vehicle restraint devices to keep the truck from moving.
- Wear personal protective equipment, such as, safety glasses, hardhats, gloves, ear protection, etc.
- When moving or lifting boxes, pipe drums and other heavy items, place your hands carefully to avoid getting them pinched or caught.



- When using material handling equipment, be aware of pinch points, moving parts or conveyors and keep clear of them.
- Watch where you put your feet when unloading trucks and handling pallets. Make sure the work surface is stable and free of debris.
- Never walk between equipment and the loading truck when they are moving.
- Setup a controlled access zone.
- Since loads can shift during transport be aware when loosening ropes, chains and tiedowns.



WORKER POSITION

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Construction sites are busy places and they can be dangerous places. Where you position yourself could make a difference between safety and an injury. If you are injured, the degree of injury can also be affected by your location. Use these safety guidelines to help avoid accidental contact with machinery or equipment:

- Always position yourself clear of moving equipment parts.
- Avoid standing in close clearances between a piece of equipment you are operating and another piece of equipment or other stationary object.
- Always maintain eye contact with persons operating machinery that could possibly contact you and confirm their understanding of your position and your intentions.



- Avoid entering or standing in a driver's blind spots.
- Avoid standing and talking near vehicle paths, grading operations, and other activities where heavy equipment is moving back and forth.
- Wear high visibility clothing such as a safety vest. Always wear a hardhat.
- Don't walk under suspended loads or between unsecured equipment or materials.
- Anticipate problems and plan your escape route.



WORKING AROUND CRANES

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- 3. Give the TOOL BOX SAFETY TALK

Crane accidents are a leading cause of death and injury on construction jobs. Workers may be at risk to being struck by loads or equipment or getting caught in between moving equipment, materials and power lines. When working around cranes, take these precautions:

- Stay off and away from cranes unless you are assigned to be on the crane.
- Always wear a hard hat to protect from falling or flying objects.
- Keep clear of the lower hoist block sheaves to prevent fingers or hands from jamming in the sheaves.
- Watch your hand placement on and around suspended loads.
- Know proper hand signals or maintain radio contact.
- Never walk within the swing radius of the crane unless it is absolutely necessary. Make sure the operator knows of your presence.
- Never ride the hook. There are too many things that can go wrong that you can't control.
- Review pre-task crane operations with supervisor.
- Barricade the swing radius of the crane. Maintain at least 10 feet of clearance and use a spotter if necessary.



