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**Construction Focus Four: Struck-By Hazards
Student Handouts**

- Hazard Alert – Nail Gun Safety
- Focus 4 “Cranes and Rigging”
- PPE for Workers Checklist

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How to prevent injury

- ◆ Ask for a nail gun with a sequential trigger mechanism.
- ◆ **NEVER** shoot towards yourself or a co-worker.
- ◆ Do not press the trigger unless the nose of the gun (contact element) is firmly pressed against the work material.
- ◆ **NEVER** walk around with your finger on the trigger.
- ◆ **NEVER** clean or clear jams or adjust a nail gun when it is connected to the air supply.
- ◆ Avoid nailing into knots and metal; nails are more likely to ricochet. Dense materials, like laminated beams, are also difficult to nail.
- ◆ **NEVER** remove or bypass safety devices, triggers, or contact springs.
- ◆ **NEVER** use a defective tool. If a tool is malfunctioning, it needs to be tagged and taken out of service.

To read stories about nail gun injuries and see photos, visit
www.cpwr.com/nailguns

To learn more about CPWR, visit
www.cpwr.com

For more safety and health information, visit
www.elcosh.org



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HAZARD ALERT

Nail Guns



Serious –
even fatal –
injuries
are happening
to workers
using these
tools.

What's the problem?

Nail guns are popular for a reason. They get the job done in a blink of an eye.

But that rapid-fire action can work against you. In a split second, a nail can enter your finger, your hand, or worse.

Nail gun injuries are much more common than people think. Most injuries involve puncture wounds to hands or fingers, but serious, even fatal, injuries are also associated with the use of these tools.

How most nail gun injuries happen

- ◆ Accidental or unintended firing, often associated with recoil of the tool after firing
- ◆ Ricocheting nails
- ◆ Nail going through work surface
- ◆ Airborne nails
- ◆ By-passed safety features
- ◆ Unsafe work practices
- ◆ Holding finger on contact trigger



Basic information about nail guns

Although there are many types of nail guns (framing, finishing, flooring, etc.), there are two common triggers:

Contact trip trigger mechanisms allow the tool to fire anytime the trigger and the nose of the gun (contact element) are both depressed. Trigger can be held down to allow bump or bounce nailing.

Sequential triggers require the nose of gun (contact element) to be depressed before the trigger is pulled. That avoids inadvertent discharge of nails.

WARNING:

The two triggers look exactly alike. You will not be able to tell the difference!

If you can "bump nail" by holding the trigger down, and bouncing the nose against a nailing surface, that is a contact trigger gun.

Use extreme caution.



Why it's important:

- 1) The **contact trip trigger mechanism carries twice the risk** of the sequential trigger, even after considering experience and training.
- 2) Accidental firings are most common following recoil of tools with contact trip triggers.
- 3) If **you are not trained** in using either of these tools, you are at high risk of injury.



"Faster" trigger does not increase productivity

A recent study measuring productivity in construction found that the contact trip trigger showed no significant difference (less than 1 percent) in productivity than the sequential trigger. Also, there was no significant difference between the two tools in nail count and placement.

The study, which involved journeymen carpenters with an average of 13 years in the trade, found that **the difference in productivity was the worker, not the tool.**

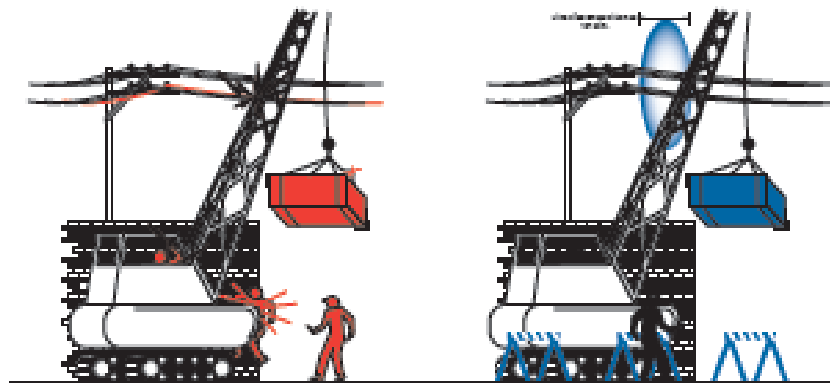
FOCUS

Cranes and rigging

Properly securing any load with appropriate rigging is crucial to any lifting being done by machinery on the job-site. If the rigging fails the results can cause serious injury and even death. Before any load is lifted all components of the rigging hardware should be evaluated to ensure they can withstand the forces of the load.

Follow these safe work practices

1. Guard all exposed gears, rotating shafts, pulleys, sprockets or other moving parts to prevent contact with employees.
2. Guard or block the swing radius of the crane to restrict and prevent employees from entering into and being struck by the machine.
3. Inspect all rigging equipment prior to each lift, this should include all slings, chains, ropes, and like materials used to support and lift materials.
4. Remove from service any defective equipment immediately.
5. Be sure to inspect all hooks, clamps, and other lifting accessories for their rated load.
6. Clearly communicate to all employees on site that no one is permitted to work under loads.
7. Be sure the person responsible for signaling the crane operator stays in visual contact with the operator and has been trained to use the correct signals.



WRONG WAY

RIGHT WAY

PPE for Workers Checklist

Protection	TYPICAL OPERATIONS OF CONCERN	YES	NO
EYE 	Sawing, cutting, drilling, sanding, grinding, hammering, chopping, abrasive blasting, punch press operations, etc.		
	Pouring, mixing, painting, cleaning, siphoning, dip tank operations, dental and health care services, etc.		
	Battery charging, installing fiberglass insulation, compressed air or gas operations, etc.		
	Welding, cutting, laser operations, etc.		
FACE 	Pouring, mixing, painting, cleaning, siphoning, dip tank operations, etc.		
	Welding, pouring molten metal, smithing, baking, cooking, drying, etc.		
	Cutting, sanding, grinding, hammering, chopping, pouring, mixing, painting, cleaning, siphoning, etc.		
HEAD 	Work stations or traffic routes located under catwalks or conveyor belts, construction, trenching, utility work, etc.		
	Construction, confined space operations, building maintenance, etc.		
	Building maintenance; utility work; construction; wiring; work on or near communications, computer, or other high tech equipment; arc or resistance welding; etc.		
FEET 	Construction, plumbing, smithing, building maintenance, trenching, utility work, grass cutting, etc.		
	Building maintenance; utility work; construction; wiring; work on or near communications, computer, or other high tech equipment; arc or resistance welding; etc.		
	Welding, foundry work, casting, smithing, etc.		
	Demolition, explosives manufacturing, grain milling, spray painting, abrasive blasting, work with highly flammable materials, etc.		
HANDS 	Grinding, sanding, sawing, hammering, material handling, etc.		
	Pouring, mixing, painting, cleaning, siphoning, dip tank operations, health care and dental services, etc.		
	Welding, pouring molten metal, smithing, baking, cooking, drying, etc.		
BODY 	Pouring, mixing, painting, cleaning, siphoning, dip tank operations, machining, sawing, battery charging, installing fiberglass insulation, compressed air or gas operations, etc.		
	Cutting, grinding, sanding, sawing, glazing, material handling, etc.		
	Welding, pouring molten metal, smithing, baking, cooking, drying, etc.		
	Pouring, mixing, painting, cleaning, siphoning, dip tank operations, etc.		
HEARING 	<p>Machining, grinding, sanding, work near conveyors, pneumatic equipment, generators, ventilation fans, motors, punch and brake presses, etc.</p> <p style="text-align: center;">Samples shown are: ear muffs (left) and earplugs (right)</p>		

NOTE: Pictures of PPE are intended to provide a small sample of what the protection gear may look like. They are not to scale nor are they inclusive of all protection gear required and/or that is available.