Please report all accidents and near misses. Things happen and it is important to learn from others. Environmental Health and Safety and your colleagues appreciate hearing about incidents, reviewing their causes and learning from them.

PNEUMATIC NAILERS AND STAPLERS

Nail guns and staplers are powerful, easy to operate, and boost productivity for nailing or stapling tasks. They are also responsible for an estimated 37,000 emergency room visits each year. Fortunately, these injuries can be prevented and more and more operators are making changes to improve nail gun and stapler safety. Research shows that risk of injury is twice as high using "contact" trigger nail guns compared to "sequential" trigger nail guns or staplers.

What Happened?

In 2016, a Yale graduate student was using a non-sequential nail gun, which allows the operator to pull the trigger, hold it and eject a nail every time the plunger is pressed against a surface. In this case, the student pulled the trigger intending to use one nail. The second nail was ejected by accident when the plunger contacted the surface again while the trigger was still depressed and the nail penetrated the student's hand.

What Went Right?

- The student was wearing the appropriate personal protective equipment including safety glasses.
- The student was not working alone.
- The student immediately reported the incident.

What Should Have Been Done Differently?

The student should have used a sequential trigger stapler, which requires contact with the surface and pulling the trigger to activate each staple. This would have prevented the double fire and the additional staple from firing away from the intended surface.

What Corrective Actions Have Been Taken?

The user acknowledged a sequential fire stapler was a more appropriate tool for the job. Retraining took place and all sequential and bounce-fire staplers/nailers were verified to be clearly identifiable.

How Can Incidents Like This Be Prevented?

Pneumatic nailers and staplers use compressed air to fire nails, brads, and staples into surfaces for construction and fabrication. Pneumatic staplers and nailers (except light-duty) require safety devices that prevent them from activating unless in contact with the work surface. While efficient, nailers and staplers can cause serious injury and death if not used properly.

- Beware of ricochet and bounce-fire incidents, the two most common causes of nailer or stapler injuries.
- Know the difference between contact and sequential tip triggers.
  Contact tips cause the nailer or stapler to fire when it makes surface contact, which could be dangerous if it "bounces" against the surface or a body part. Use contact tips only with stabilizing jigs.

Sequential tip triggers require contact with the surface and then pulling the trigger to activate. Ricochet accidents occur if you nail into another nail, the surface is too hard, or the tool is at a great angle.

- Work with a nailer or stapler only from a sturdy and stable surface. Do not press your finger on the trigger unless you are ready to fire, especially when climbing ladders.
- If you are injured, do not remove the fastener unless instructed to do so by a doctor.
- Get training and hands-on experience from a qualified trainer before you use a nailer or stapler. Get refresher training if you have an accident or use the tool improperly. Follow your worksite safety plan for pneumatic nailers or staplers. Study and follow the manufacturer's operating instructions.
- Inspect the tool and hoses before each use.
- Wear safety glasses with side shields and hearing protection. Consider a face shield, work gloves, hard hat and steel toed boots if the job task and/or site require added protection.
- Place warning signs and restrict access to the worksite when a nailer or stapler is in use. Treat the nailer or stapler like it is a firearm. Know where you are going to nail before you pull the trigger.
- Never assume the tool is empty or unhooked from the air hose. Never point the tool at yourself or a coworker. Don't bypass or disable safety guards.
- Only compressed air should be used to power a nailer or stapler. Bottled gases can cause damage, fire and explosions. Follow the manufacturers recommended air pressure. If the air hose exceeds one-half inch inside diameter, use a pressure regulator at the compressor in case of hose failure. Use a safety disconnect valve that will prevent your nailer or stapler from accidentally disconnecting from the hose. Use a fitting that will bleed the pressure when the tool is disconnected from the hose. Manage the air hose to avoid a tripping hazard. If you are working at heights, or on a roof sloped steeper than 7:12, secure the hose so there is enough room to maneuver, but not so much that the weight of the hose might pull the nailer or stapler off.
- To prevent misfires, never pull, lift, or swing the nailer or stapler by the hose. Disconnect the air hose and empty the nailer or stapler before repairing or clearing a jam. It is safest to disconnect the nailer or stapler from the air hose before leaving it unattended.
- Report all incidents, regardless of size and including near-misses, to EHS.

More Information

- **Video:** Nail Gun Safety: Sequential Fire Mode vs. Bounce-Fire Mode (http://bit.ly/1KDUJZP)
- **Centers for Disease Control and Prevention:** Nailing Down the Need for Gun Safety (http://1.usa.gov/1SNbnbO)
- **Occupational Safety & Health Administration:** Nail Gun Safety: A Guide for Construction Contractors (http://1.usa.gov/LeyCL1)
- **Contact your Safety Advisor** at 203-785-3550 if you have any further questions.