MICHIGAN

Fatality Assessment & Control Evaluation

Prevention through comprehensive research and investigation

INVESTIGATION/RESEARCH

Don't Get Nailed by a Nail Gun

In 2013, a male carpenter/laborer in his 30s died from head injuries sustained when a C Pak, 33 degree clipped head paper taped, 3-inch by 0.131 smooth nail from a Model F350S Paslode pneumatic nail gun entered his eye socket and lodged in his head. The Paslode nail gun used had been shipped with a sequential trigger, but the trigger had been "swapped out" with a contact trigger. He was reattaching the entry wall to the garage wall. To do so, he reached around the entry wall hanging around the corner using his right hand to hold the wall and his left hand (non-dominant) to hold the nail gun to nail inside of the wall joists back toward his body. A nail was found to be partially embedded in one of the entry wall studs. This could have been the result of a "double fire" or a nail that had not been removed from the stud as the wall was being repositioned. He was not wearing eye protection. He died several days later in the hospital.

MIFACE Case #324

IN ORDER TO PREVENT SIMILAR INCIDENTS IN THE FUTURE

All pneumatic (air, gas, or electric) nailers rely on two basic controls: a finger trigger and a contact safety tip located on the nose of the gun. Trigger mechanisms vary based on: 1) the order in which the controls are activated, and 2) whether the trigger can be held in the squeezed position to discharge multiple nails OR if it must be released and then squeezed again for each individual nail. **SAFEST TRIGGER: Full Sequential trigger**: the safety contact tip must be pushed into the work piece then the user must squeeze the trigger to discharge a nail. Both the safety contact tip and the trigger must be released and activated again to fire a second nail. **Other trigger types:** Contact, Single Sequential, Single Actuation.

- **Use full sequential trigger nail guns.** Nails cannot be bump fired.
- **Provide Employee Training.** Training Topics (at a minimum): how nail guns work, how triggers differ, main causes of injuries, manufacturer tool manual availability and location, what to do if gun malfunctions, company work rules and procedures, and hands-on training.
- **Establish nail gun work rules and procedures.** Include: requirements to check tools, power sources, and work surfaces before operating; set up the operation so coworkers are not in the line of fire (watch for coworkers behind objects, e.g., drywall, sheet metal); use a hammer or positive placement nail gun when nailing metal joinery or irregular lumber; always shoot nail guns away from your body; rules when to disconnect the power source (compressed air, compressed gas or electric); for placement work, always keep hands at least 12 inches away from the nailing point; and recognize and minimize dangers of awkward position work and working at heights.
- **Provide personal protective equipment (PPE).** At a minimum, companies should provide safety shoes, hard hats, high impact eye protection meeting the requirements of ANSI Z87.1, and hearing protection.

TO REPORT A NEW WORKPLACE FATALITY TO MIOSHA

1.800.858.0397

MICHIGAN FATALITY ASSESSMENT & CONTROL EVALUATION

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HA #19 3/18/14
REV 5/2/16 (NIOSH Videos)

REQUIREMENTS & RESOURCES

- MIOSHA Fact Sheet: Dangers of Pneumatic Nail Guns with Contact Triggers
- OSHA: Nail Gun Safety Guide: A Guide for Construction Contractors (English) (Spanish)
- NIOSH: Straight Talk About Nail Gun Safety Video: "Know Your Nailer: Nail Gun Safety" long / short / Spanish
- Nail Gun Safety: The Facts
- CPWR Hazard Alert: Nail Gun Safety
- ASSE: Nail Gun Safety Guide

7 major risk factors that can lead to a nail gun injury:

1. Unintended nail discharge from double fire (contact trigger)
2. Unintended nail discharge from knocking the safety contact with the trigger squeezed (contact/single actuation trigger)
3. Nail penetration through lumber work piece (all triggers)
4. Nail ricochet after striking a hard surface (e.g. wood knots, metal framing hardware, dense laminated beams) (all triggers)
5. Missing the work piece (all triggers)
6. Awkward position nailing (all trigger types but particularly concern with contact and single actuation)
7. Bypassing safety mechanisms (all triggers)