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The right to bear nails

By Tasha Hodges

Since the building boom of the 2000's, pneumatically driven nailers and staplers (commonly referred to as "nail guns") have become the preferred tool of trade in the construction industry. However, with the capability of firing 30 nails a minute at speeds up to 490 feet per second (roughly 334 miles per hour), this easy-to-use tool can also be a threat to workplace safety. According to the National Institute for Occupational Safety and Health (NIOSH), emergency departments across the U.S. treat 22,200 work-related injuries and 14,800 consumer injuries caused by nail guns.

From 1997 to 2006, the Oregon Department of Consumer and Business Services received notification of 596 accepted disabling claims due to nail guns, an average of just fewer than 60 claims per year. Eighty percent of these disabling injuries occurred when a discharged nail struck a worker.

During this ten year period, there were no compensable fatalities due to nail guns. The majority of disabling injuries involved the upper extremities (320 claims), including fingers (155 claims) and hands (91 claims) or the lower extremities (212 claims), such as legs (116 claims) and feet (68 claims). Puncture wounds were the most common type of disabling injury caused by nail guns (65.8 percent); however, it is unknown how many of these puncture wounds led to infections or other medical complications. Fractures were the second most common disabling injury (18.5 percent).

The feature most often cited as having an effect on safety is the nail gun's firing mode. Most nail guns use a trigger and push lever design. This design fires a nail when both the push lever on the nose of the gun and the trigger button on the handle of the gun are depressed. Trigger and push lever nail guns are available with a variety of firing modes. For example, the sequential firing mode will only shoot a nail after the push lever on the nose of the gun makes contact with a surface and the trigger is depressed – in that order. The single shot firing mode allows the push level to remain pressed against the surface, and will fire a nail when the user pulls the trigger. Conversely, the contact trip firing mode allows the trigger to remain depressed, and will fire whenever the push lever makes contact with a surface.

On April 15, 2008, the Sacramento Bee published an in-depth look at nail guns, specifically the poor safety record of contact trip guns. Injury victims and safety experts have charged the contract trip mode sacrifices safety for convenience. Hester Lipscomb, an occupational epidemiologist at Duke University, found that between 65 percent to 68 percent of nail gun injuries could have been prevented with the use of sequential firing guns.

According to the Sacramento Bee's report, nail gun manufacturers acknowledge that the sequential guns have a safety advantage over the contact trip guns, but many construction workers prefer the contact trip guns because they are considered to be faster and easier to use. However, some studies show that the contact trip guns provide little or no improvement in work speed, and that any labor cost savings are offset by the cost of more injuries and higher insurance rates.

In addition to using the appropriate firing mode, there are other precautions that can be taken to reduce the risk of injury. The nail gun user, and others on the work site, should wear safety glasses to protect their eyes and face from misfired nails. Additional personal protective equipment, such as hard hats, protective footwear, and ear protection should also be used. The gun should always be pointed away from the user; it should never be used to back-nail materials toward the operator's body. Most importantly, safety devices should never be dismantled or bypassed to save time or money. Doing so could put the worker and those around him at risk.

Tasha Hodges is a Research Analyst who works and writes for the Oregon Department of Consumer and Business Services, Information Management Division.

Identifying occupational hazards - past and present

By Barry Moreland

Nearly three hundred years have passed since physicians first began to realize that a man's job was not only his living, but often times a direct cause of his dying. **Bernardino Ramazzini**, considered by many to be the father of occupational medicine, visited workplaces, observed workers' activities, and discussed their illnesses with them. He studied relationships between certain disorders and postural attitudes, repetition of movements, including weight lifting, and anticipated some preventive measures. A snapshot of his findings is illustrated in the following quote:

"Various and manifold is the harvest of disease reaped by certain workers from the crafts and trades that they pursue; all the profit that they get is fatal injury to their health. That crop germinates mostly, I think from two causes. The first and most potent is the harmful character of the materials they handle, for these emit noxious vapours and very fine particles inimical to human beings and induce particular diseases; the second cause I ascribe to certain violent and irregular motions and unnatural postures of the body by reason of which the natural structure of the vital machine is so impaired that serious diseases gradually develop therefrom."

Bernardino Ramazzini, *De Morbis Artificum Diatriba* (Diseases of Workers), 1713

It is interesting that the two causes identified by Ramazzini years ago are still valid causes of injury and illness today. What has significantly changed are the ways we approach and manage exposure to hazardous tasks and dangerous work environments. Job Hazard Assessments, Pre-Task Plans, Best Known Methods and Construction Incident Prevention Plans are all tools, used on our construction sites today, that parallel the approach taken by Ramazzini to identify root causes for worker injuries or illnesses and predict potential workplace hazards.

Once identified, steps are then taken to eliminate or control these hazards, which can include the use of personal protective equipment. While PPE may not always be the best solution, it is often the most practical for the constantly changing construction industry. Today, employees are exposed to a much wider variety of occupational hazards than ever before. Vendors are prepared to provide new products and control methods to handle these exposures. One must not lose sight that eliminating hazards through engineering and administrative controls is the best form of worker protection available.

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Using an energized electrical work permit as a tool

By Barry Moreland

Paperwork is a necessity on every jobsite whether it is used for ordering materials, tracking change orders and RFIs or as a means to create a safer work environment. Most people view more paperwork as negative aspect to construction but many times it is these same documents that can be used as tools to increase productivity and safety at the same time. Take for instance an **energized electrical work permit**.

Have you seen one? Do you know how to fill it out and why it is so important to use one every time energized work is performed? Are you using it to increase hazard awareness to your workers and facility owners? If not, you should be.

Five ways to use an energized electrical work permit as a tool

1. The permit requires that you define your work tasks and assess the hazards associated with the work involved.
2. Justification for energized work. Why is it that the work cannot be performed de-energized as required by OSHA? Are there increased hazards introduced by de-energizing? The permit can be used in a job briefing to communicate to your workers the rationale behind working energized.
3. Once a hazard assessment has been performed, the permit also aids in the selection of proper personal protective equipment necessary for protection from shock and arc flash hazards.
4. The permit requires that boundaries be defined to keep unqualified workers out of harm's way and that electrical workers be properly qualified for the specific energized work task.
5. Probably the most important reason for using the permit is for the approval to perform the work energized. This is a powerful way to reinforce the primary requirement to work de-energized. The permit contains a spot for the signature of the facility owner or general contractor to authorize that the specified work be performed energized. Many times this leads to a review of the work schedule and a time slot being created to de-energize the electrical equipment, thereby increasing productivity and the level of safety at the same time.

It is obvious that energized work will always be included in the electrician's job description. It is

the frequency of these work tasks and the understanding that it take proper planning, tools and equipment, communication and training to safely perform this work. If it just has to be worked energized, using this permit will help you prepare to face the work hazards ahead with a level of professionalism, productivity and safety.

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The ABCs of construction site safety

Oregon OSHA's **Craig Hamelund** gave a workshop on Construction Site Safety at the 7th Annual Mid-Oregon Construction Safety Summit last January. What? You missed it?

You can still check out the *ABCs of Construction Site Safety*, which he wrote just for the workshop. The guide describes common construction-related topics and the Oregon OSHA requirements that apply. He also put together a nice PowerPoint summary of the material.

- **ABCs of Construction Site Safety guide (Word document)**
- **ABCs of Construction Site Safety PowerPoint summary**

Workers' Memorial Day is April 28

Workers' Memorial Day recognizes U.S. workers who die or are are injured on the job. Oregon OSHA administrator **Michael Wood** offers a remembrance.

Not all families get to experience the safe return of their loved one from work. Thousands of workers in the United States die each year from work-related incidents.

That's why on Worker's Memorial Day, April 28, I want to encourage employers and workers throughout Oregon to remember those whose lives were cut short. It's a time to think about what government, employers and workers have done to make Oregon workplaces safer over the past two decades — and a time to remember that the fight is not over. During this year's event, we will read the names of 64 workers who lost their lives on the job.

Over the years, certain worker fatalities that crossed my desk have particularly touched me.

I remember the young mother, getting her life put back together after beating a drug habit, killed when she got caught in a cardboard recycling machine. The job was part of her rehabilitation program.

I remember the high school boy overcome and killed, along with his best friend, in a hay silo when working on his father's farm.

I remember another young worker who died in a tractor rollover that could have prevented by the rollover protection device sitting in the barn, where it had been since being removed nine years before.

I remember the 43-year-old father of three, killed in an automobile accident, whose death jolted me because we were about the same age — and shared the same name.

And I remember the worker killed in the morning without seeing the note from his wife in his lunchbox — in which she congratulated him on his last day before retirement.

As the head of Oregon OSHA, I know plenty of statistics. Statistics can help us understand whether we make a difference. But it is the stories of lives ended before their time that stick with me. Those stories remind me that each of the "numbers" we talk about has a name, has a story, has people who care about him or her. And these stories prompt me to ask, "When is the right time to die on the job?"

The answer, of course, is never. That is why I come to work each day; it provides me the opportunity to work with those in government, in business and in labor who are writing a different story for the lives we touch. Each of those stories will still have an ending, of course. But the ending need not be a life cut short in the workplace.

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Ask an expert

Is it acceptable to work from a folded stepladder leaned against a wall?

Using a standard (foldable) stepladder in a closed position is not a safe practice because it's more likely to slip on surfaces such as concrete and wood than a straight ladder. Standard stepladders are designed for use only when the spreader arms are open and locked. If a standard stepladder doesn't meet your needs, choose an appropriate straight ladder or a combination ladder. (A combination ladder is designed for use as a stepladder, extension ladder, single ladder, or trestle ladder.)

Wondering what Oregon OSHA rule applies for the construction industry? Subdivision 3/X, (*Stairways and Ladders*) 1926.1053(a)(8) says, "A metal spreader or locking device shall be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.