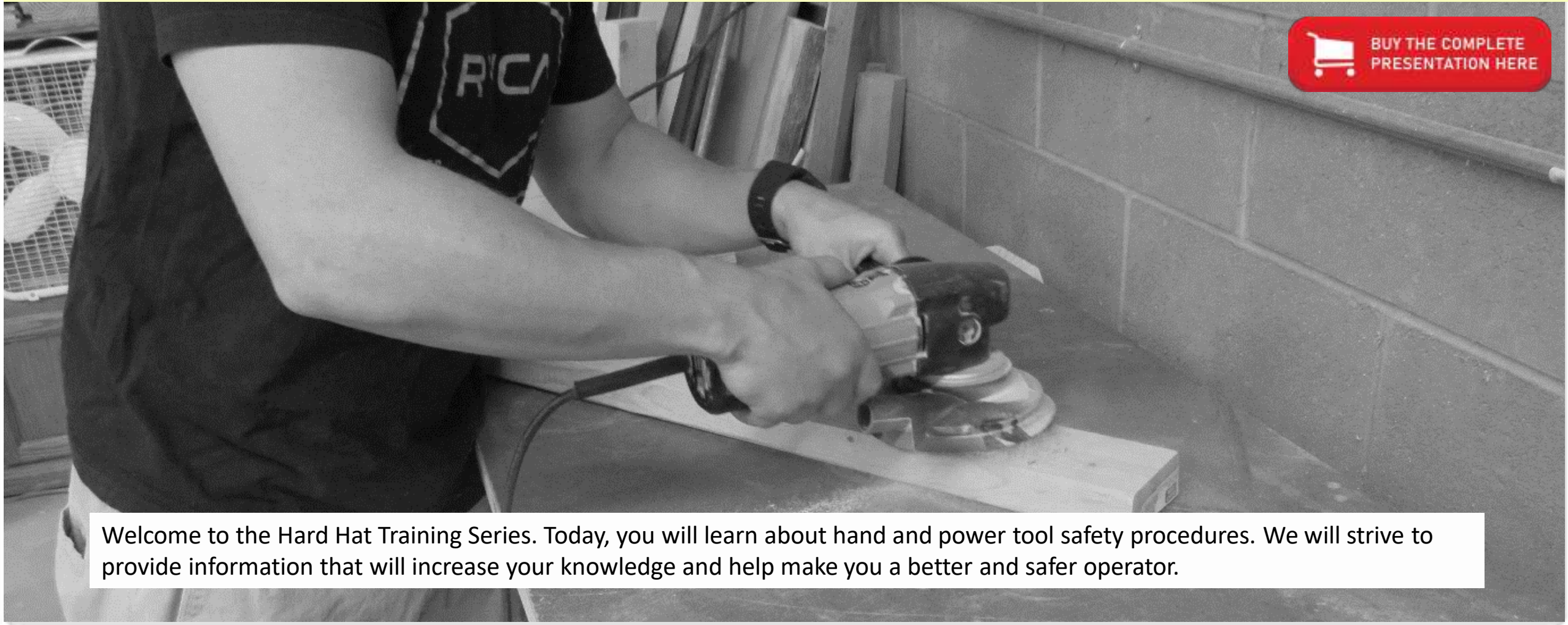
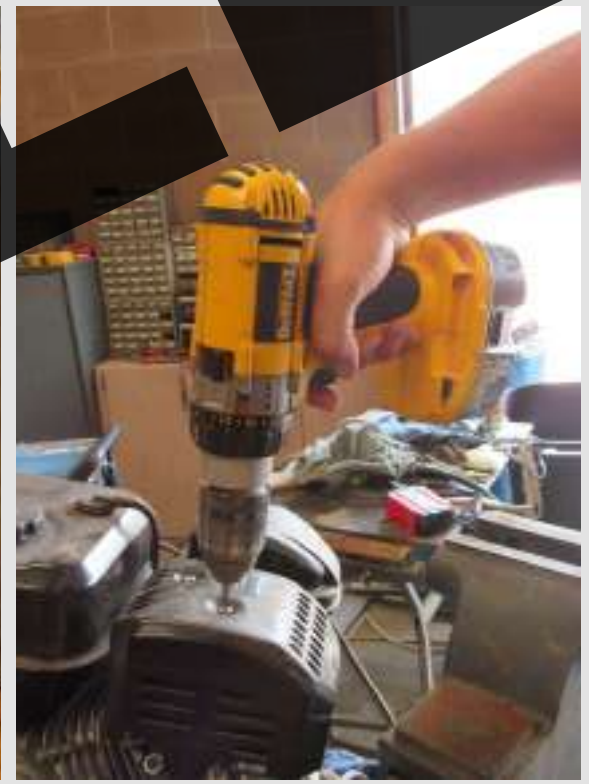
Welcome to the Hard Hat Training Series!



Welcome to the Hard Hat Training Series. Today, you will learn about hand and power tool safety procedures. We will strive to provide information that will increase your knowledge and help make you a better and safer operator.

Humans and hand tools have had a long history. Some of the earliest known hand tools were sharpened rocks used as axes that dated back nearly 2.6 million years. While the designs of such tools have varied greatly according to culture, location, and time period, all have been created with the same purpose in mind: to simplify our most backbreaking tasks and make life easier.

Fortunately, we have since advanced from humble rock tools to a wide selection of drills, hammers, and saws, but just because hand tools are lighter and more convenient than other machines does not mean they don't have their own set of hazards.

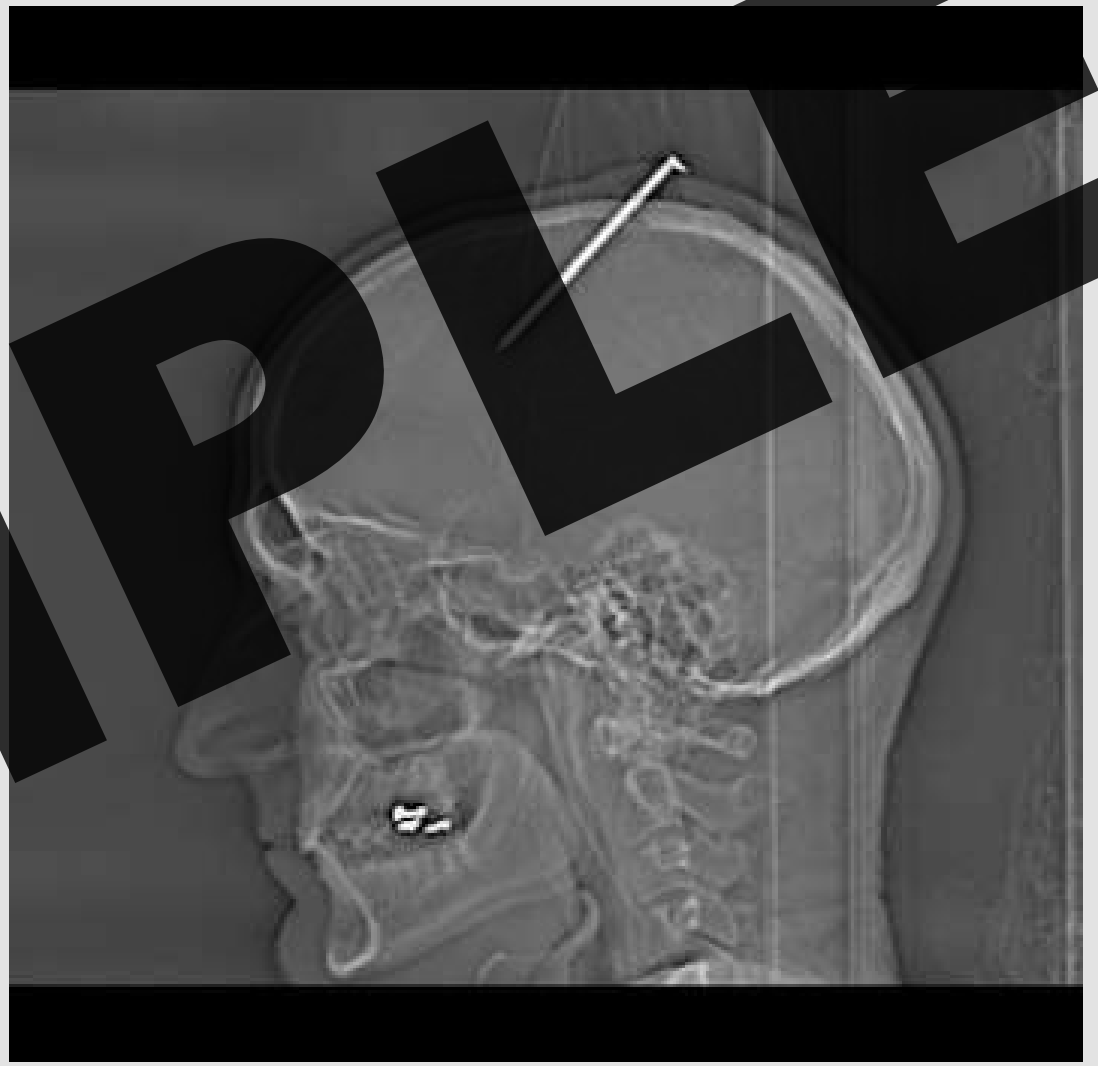


Listed below are some statistics collected in the U.S. that put the hazards of power tools in perspective:

- There are an average of 124,000 injuries each year from the misuse of hand tools.
- In 2016, there were 2,000 amputations because of hand tools.
- An average of 37,000 people are sent to the emergency room each year because of power nailers.
- Table saws account for 29,000 emergency room visits a year.
- Circular saws send 10,600 patients to the ER a year.
- Air compressors alone account for approximately 2,400 injuries a year.

As you can guess, hand and power tool safety is an important aspect of even the smallest job, not only for the operator of the tool, but for anyone around them. Sometimes, neglect by one employee can cause injury to another.

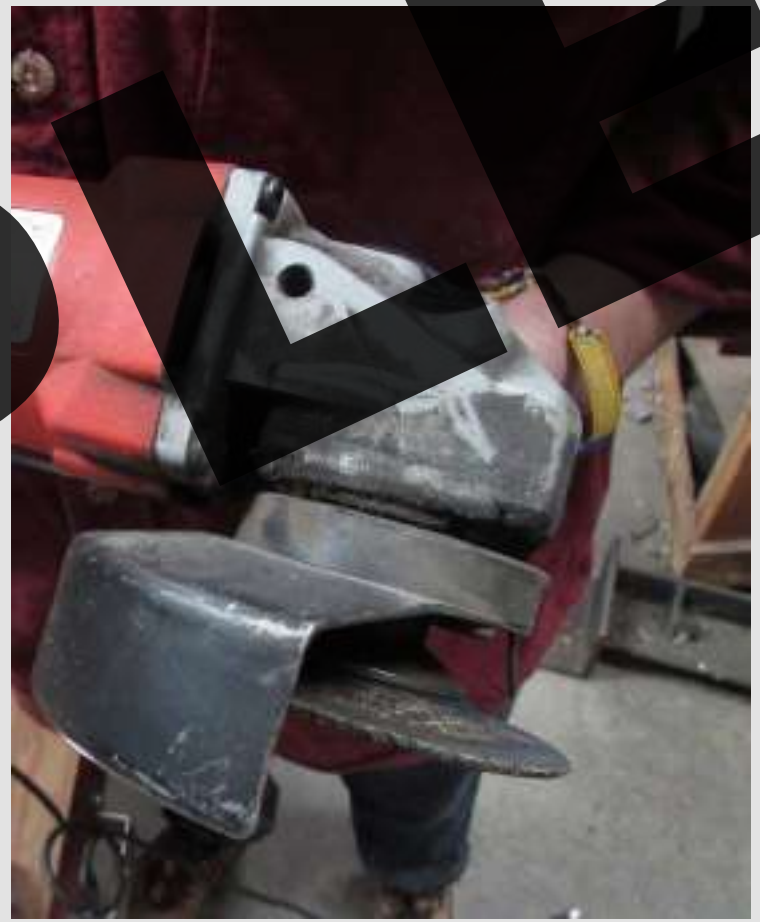
In a very real incident reported to OSHA, two employees were using powder-actuated tools to anchor some plywood forms to a concrete wall. A third employee was cutting the forms about thirty feet away. None of the three workers were wearing appropriate head or face protection. One of the first two employees unknowingly fired a nail into a hollow section of concrete, causing it to project through the wall. The nail then struck the third worker in the head, killing him.

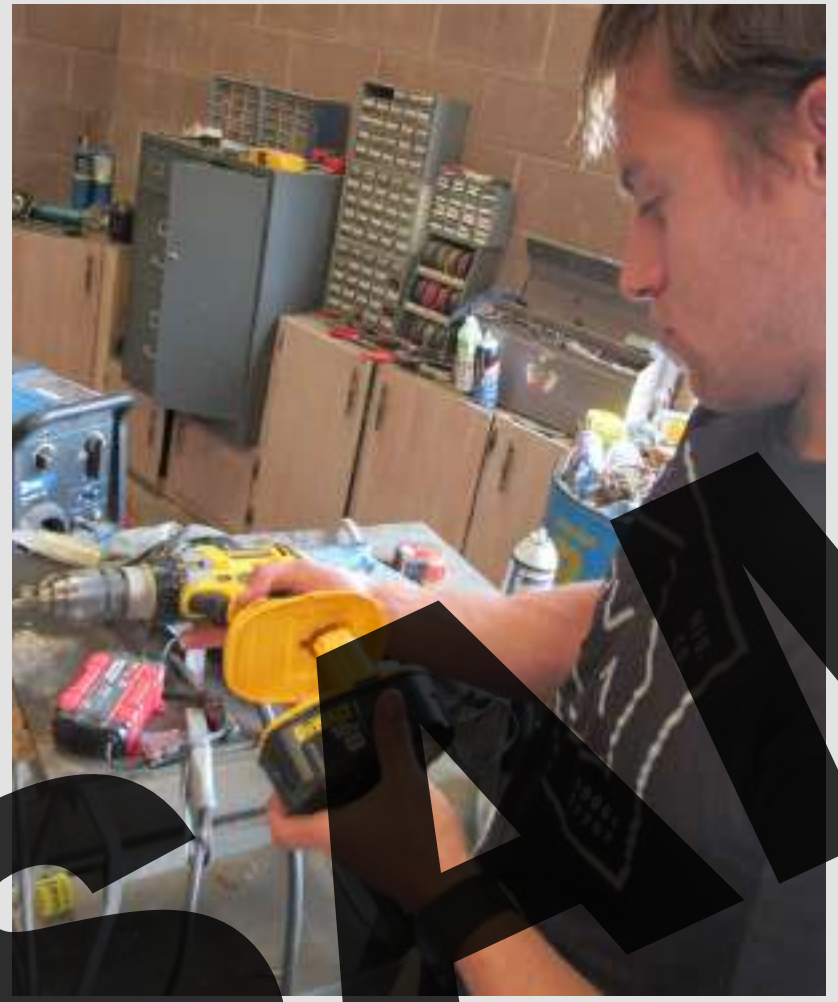


Accidents involving power tools occur frequently. As stated, the U.S. sees an average of 124,000 injuries a year from the misuse of tools, many of which could be avoided by simply reading owner's manuals, wearing PPE, and paying attention to surroundings.

The goal today is to focus on general safety principles and provide information that will increase your recognition of potential hazards, improve your knowledge of safe operations, and keep you and those around you safe.

We will cover three different types of guards and equipment, as well as strategies needed to prevent bodily injury.



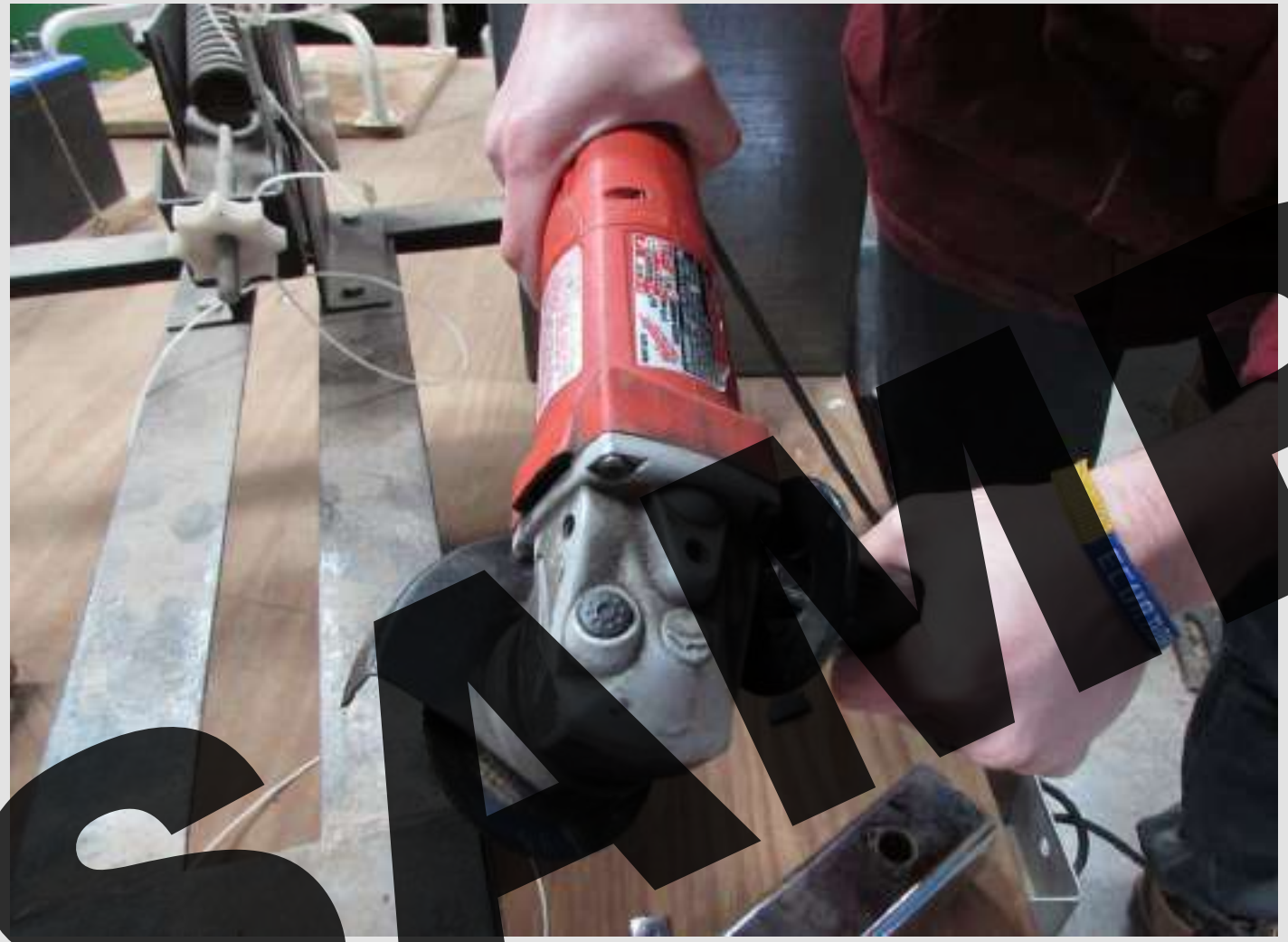


We will discuss different handles and switches, emphasizing key safety features to be aware of.

We will also discuss the general dangers involved with cutting tools, how to select the correct cutting attachment for the job, and what to look for during the pre-shift inspection of any instrument.

We will talk about general safety procedures for fastening tools, focusing on powder-actuated tools, pneumatic nail tools, and hand drills.

We will cover the dangers of using faulty equipment and what to do when faulty equipment is found.



And finally, we will discuss common hazards associated with hand tools.

At the completion of this training, you will be able to operate hand and power tools in a safe and efficient manner. Your employer, coworkers, and those you work for will be highly satisfied with your abilities and competence, and you will rarely, if ever, find yourself in a position of danger or helplessness.

STANDARDS

OSHA

ANSI ASME

1910 Subpart P, Hand and Portable Powered Tools and Other Hand-Held Equipment

- 1910.242 - Hand and portable powered tools and equipment, general
- 1910.243 - Guarding of portable powered tools

1926 Subpart I - Tools - Hand and Power

- 1926.300 - General requirements
- 1926.302 - Power-operated hand tools
- 1926.303 - Abrasive wheels and tools
- 1926.304 - Woodworking tools

These are some of the main standards concerning hand and power tools. Many states have additional standards, as do some industries. It is your responsibility to know all federal, state, local, and company rules that apply to your machine and jobsite.

STANDARDS

OSHA

ANSI

ASME

29 CFR 1926.21, Training and Education

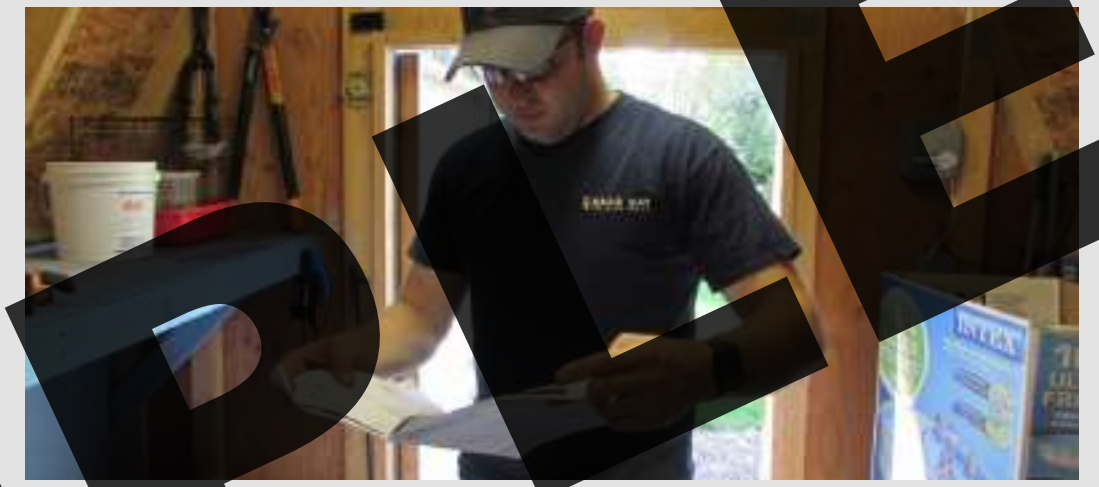
OSHA Act of 1970, 5(a)(1): *"each employer shall furnish to each of his employees... a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."*

29 CFR 1926.300, Tools – Hand and Power, (a): *"Condition of tools. All hand and power tools and similar equipment, whether furnished by the employer or the employee, shall be maintained in a safe condition."*

As stated in the graphic above, each employer is responsible for the safe condition of all tools and equipment used by employees.

Equipment operators also share in the responsibility to ensure that they and their co-workers have:

- Received training by a qualified person
- Read and understood the manufacturer's operating instructions and safety rules as found in the operator's manual
- Read and understood all decals, warnings, and capacity plates on the machine and attachments
- Performed a thorough pre-shift inspection each day prior to operating the machine



Guards