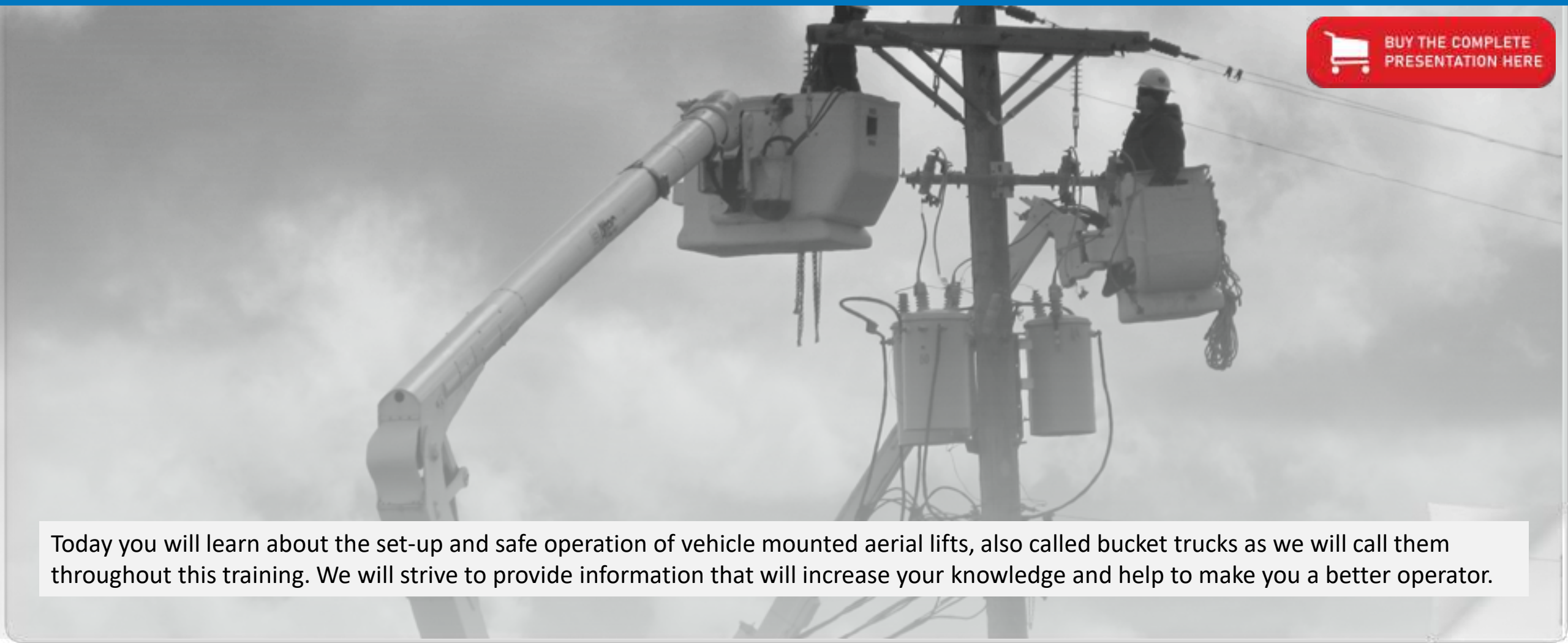
Welcome to *The Hard Hat Training Series*



Today you will learn about the set-up and safe operation of vehicle mounted aerial lifts, also called bucket trucks as we will call them throughout this training. We will strive to provide information that will increase your knowledge and help to make you a better operator.

Overview

Aerial lift platforms are great tools to conduct work at heights and increase production efficiency. These machines lift personnel, along with tools and materials, from 10-12 feet in the air to as high as 100 feet.

During this training we'll discuss the anatomy of bucket trucks and stress the importance of inspecting it each day before it is put into service.

We will look at bucket truck stability and the importance of knowing the machine's capacity. We will also discuss safe operating principles and briefly cover refueling.

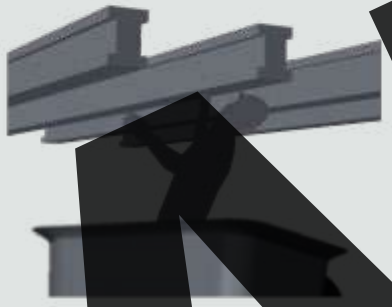
We will emphasize the importance of planning each lift and setting up the machine properly so as to avoid hazards and obstacles around the work site, providing the maximum amount of safety possible.

Powerline Contact

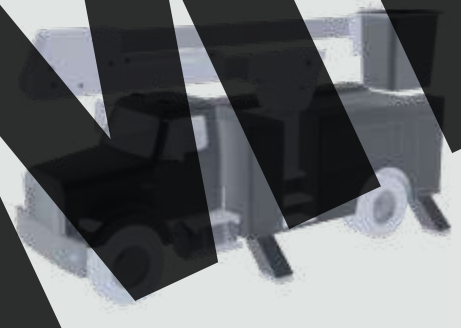
Tipovers

Falls from Platforms

Struck or Crushed by Lift



Maintenance Related



Other

Lastly, we will introduce the six most common hazards associated with bucket truck operation and show you how to recognize, avoid, or minimize them.

Upon completion of this training, you should be familiar with the types of vehicle mounted aerial lifts used by your company, have an increased knowledge of how to inspect and safely operate them, and be able to recognize the common hazards that surround their use. However, before you can operate other types of aerial lifts, you will need to receive training specific to those types of lifts and the manner in which they'll be used.

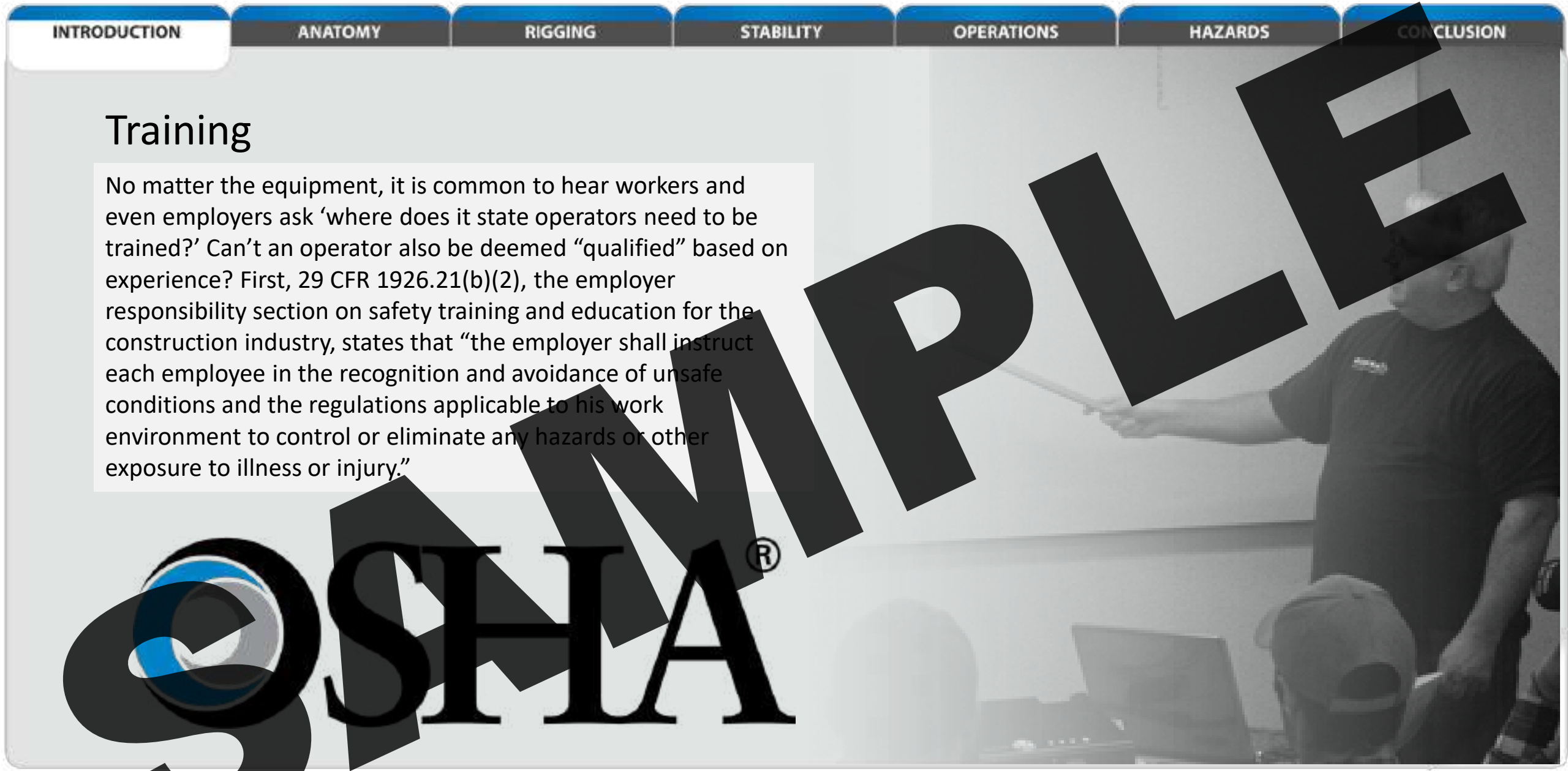
Bucket trucks have made it safer and easier to lift personnel and their tools to great heights. If used correctly, this equipment provides quick and safe access to work in areas, that at one time, could only be reached from scaffolding or a crane's man-basket, which wasn't the safest option.

Bucket trucks have a turret and boom that are mounted on trucks or vans and are often referred to as cherry pickers or boom trucks, but for this training we will call them bucket trucks. They are used along public roads and highways, by public works and road maintenance crews, or utility companies.

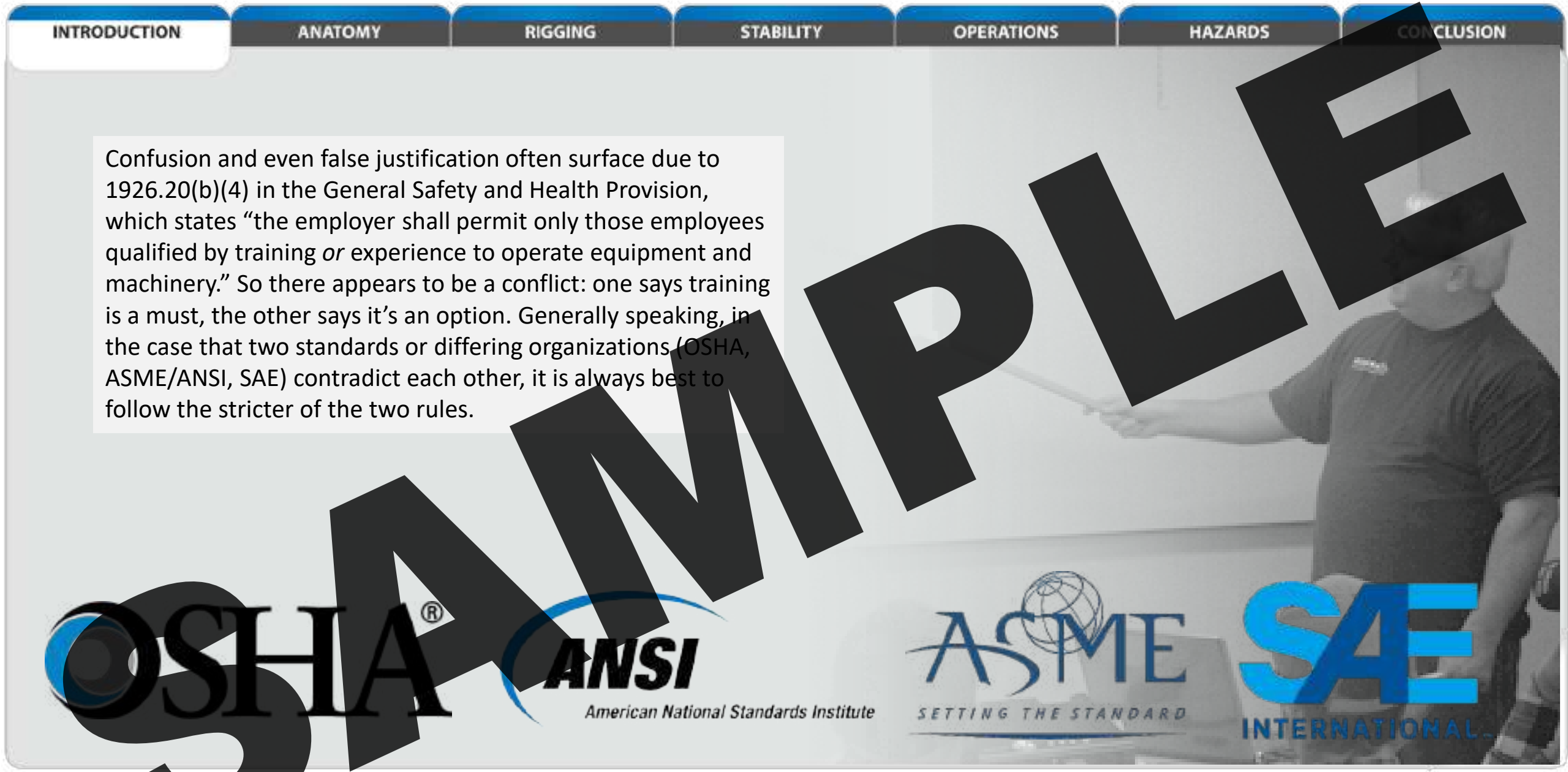
They can also come in the form of ladder trucks with platforms or hoisting capabilities. These types of lifts are most often seen in the sign industry. Where safety principles differ between these and other bucket trucks, we will discuss them periodically throughout this presentation.

Training

No matter the equipment, it is common to hear workers and even employers ask ‘where does it state operators need to be trained?’ Can’t an operator also be deemed “qualified” based on experience? First, 29 CFR 1926.21(b)(2), the employer responsibility section on safety training and education for the construction industry, states that “the employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.”



Confusion and even false justification often surface due to 1926.20(b)(4) in the General Safety and Health Provision, which states “the employer shall permit only those employees qualified by training *or* experience to operate equipment and machinery.” So there appears to be a conflict: one says training is a must, the other says it’s an option. Generally speaking, in the case that two standards or differing organizations (OSHA, ASME/ANSI, SAE) contradict each other, it is always best to follow the stricter of the two rules.



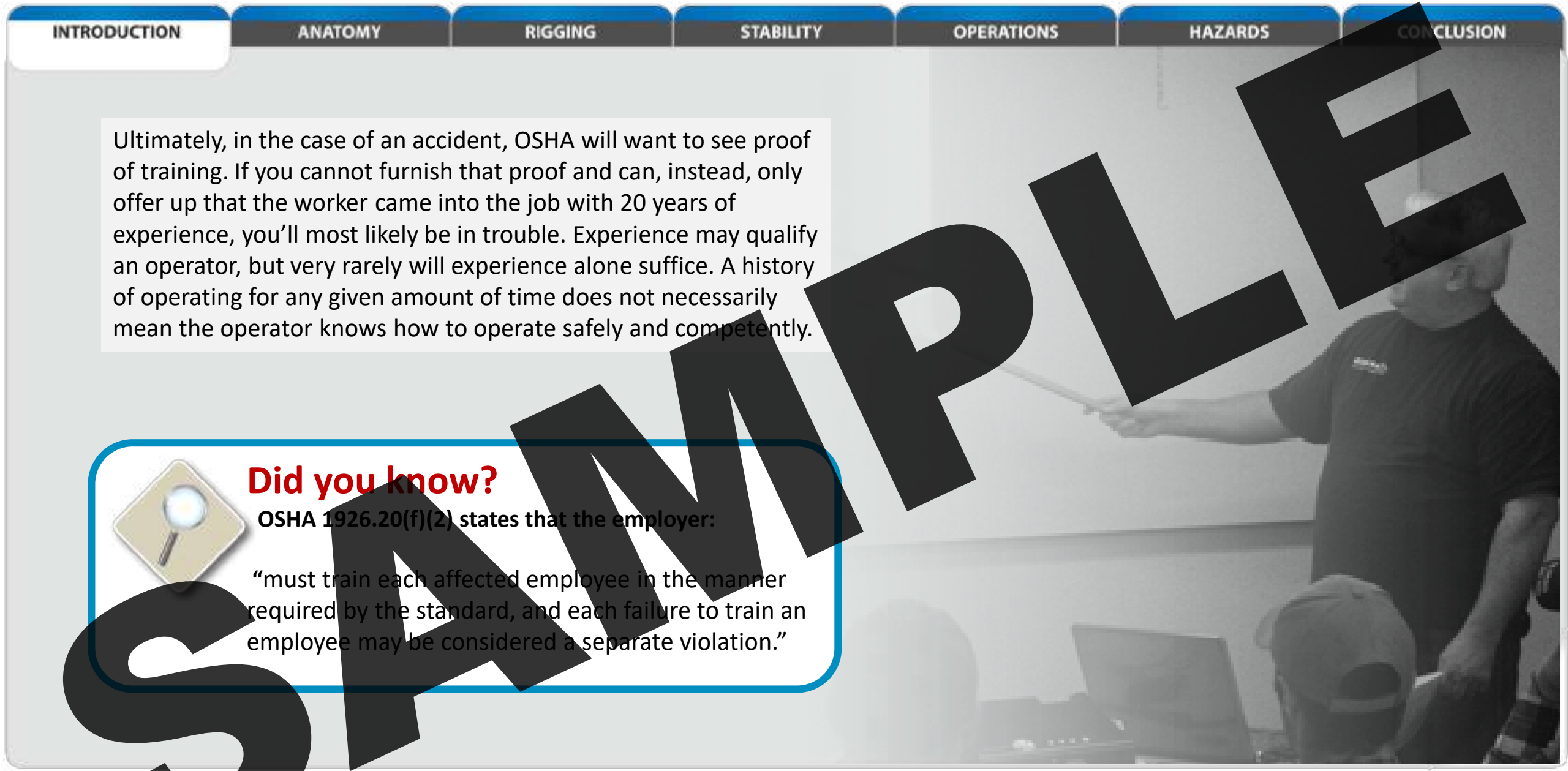
OSHA®

ANSI
American National Standards Institute

ASME
SETTING THE STANDARD

SAE
INTERNATIONAL

Ultimately, in the case of an accident, OSHA will want to see proof of training. If you cannot furnish that proof and can, instead, only offer up that the worker came into the job with 20 years of experience, you'll most likely be in trouble. Experience may qualify an operator, but very rarely will experience alone suffice. A history of operating for any given amount of time does not necessarily mean the operator knows how to operate safely and competently.



Did you know?

OSHA 1926.20(f)(2) states that the employer:

"must train each affected employee in the manner required by the standard, and each failure to train an employee may be considered a separate violation."

Bad habits are easily passed from one worker and one site to another, all in the name of “experience.” Can you think of a particular time—in or outside of construction—where you did something a certain way for years only to discover that you had been doing it wrong the whole time? In this case, as in all cases, in our experience, training will only help. It can reinforce and enhance the good experience while addressing and correcting the bad habits from misguided experience.

Have you heard?

The story of the woman who got in a fight with her husband because she believed “you” were supposed to cut the ends of the ham off before cooking it. Her mom had done it that way for years. Her husband argued it was a waste. Turns out her mom cut the ends off only so it would fit into their smaller pan.

Did you know?

OSHA Regulations specify that an operator *must* take a refresher course if any of the following apply:

- The operator is observed operating the equipment in an **unsafe** manner (e.g., no seat belt, reckless driving, etc.)
- The operator is involved in an **accident *or*** a **near miss**
- The operator received a **poor evaluation** for performance
- The operator is required to **use a different type of machine *or* attachment**
- Workplace conditions have changed

Additionally, 1926.64(g)(2) states that "The employer…shall determine the appropriate frequency of refresher training."

In line with OSHA requirements, anyone who operates heavy equipment must receive training prior to operating the machine on their own. As noted above, OSHA requirements for refresher training are also very specific.

Did you know?

29 CFR 1910.178 specifies that an operator *must* take a refresher course if any of the following apply:

- The operator is observed operating the equipment in an **unsafe** manner (e.g., no seat belt, reckless driving, etc.)
- The operator is involved in an **accident *or*** a **near miss**
- The operator received a **poor evaluation** for performance
- The operator is required to **use a different type of machine *or* attachment**
- Workplace conditions have changed

Additionally, outside of that, 1926.64(g)(2) states that "The employer shall determine the appropriate frequency of refresher training."

It's important to note the last two conditions for refresher training. This term "type" also caused a lot of confusion. Generally speaking, by "type" OSHA means bucket truck vs. aerial lift vs. straight boom vs. scissor lift, etc.; they do not necessarily mean size, although size can play a factor. Can you think of any differences that might make a bucket truck a different type, thus requiring additional training?

OSHA®

When it comes to refresher training, OSHA's standard in some instances (like forklifts) are very specific: operators must be re-evaluated every three years to see if they are still competent to operate the equipment. Best practices say to apply this same rule to all types of equipment. A so-called "free-pass" cannot be awarded based on experience, age, or time on the job. The extent of the evaluation is to be determined by the employer, but should include a written and practical examination that prove continued competency.

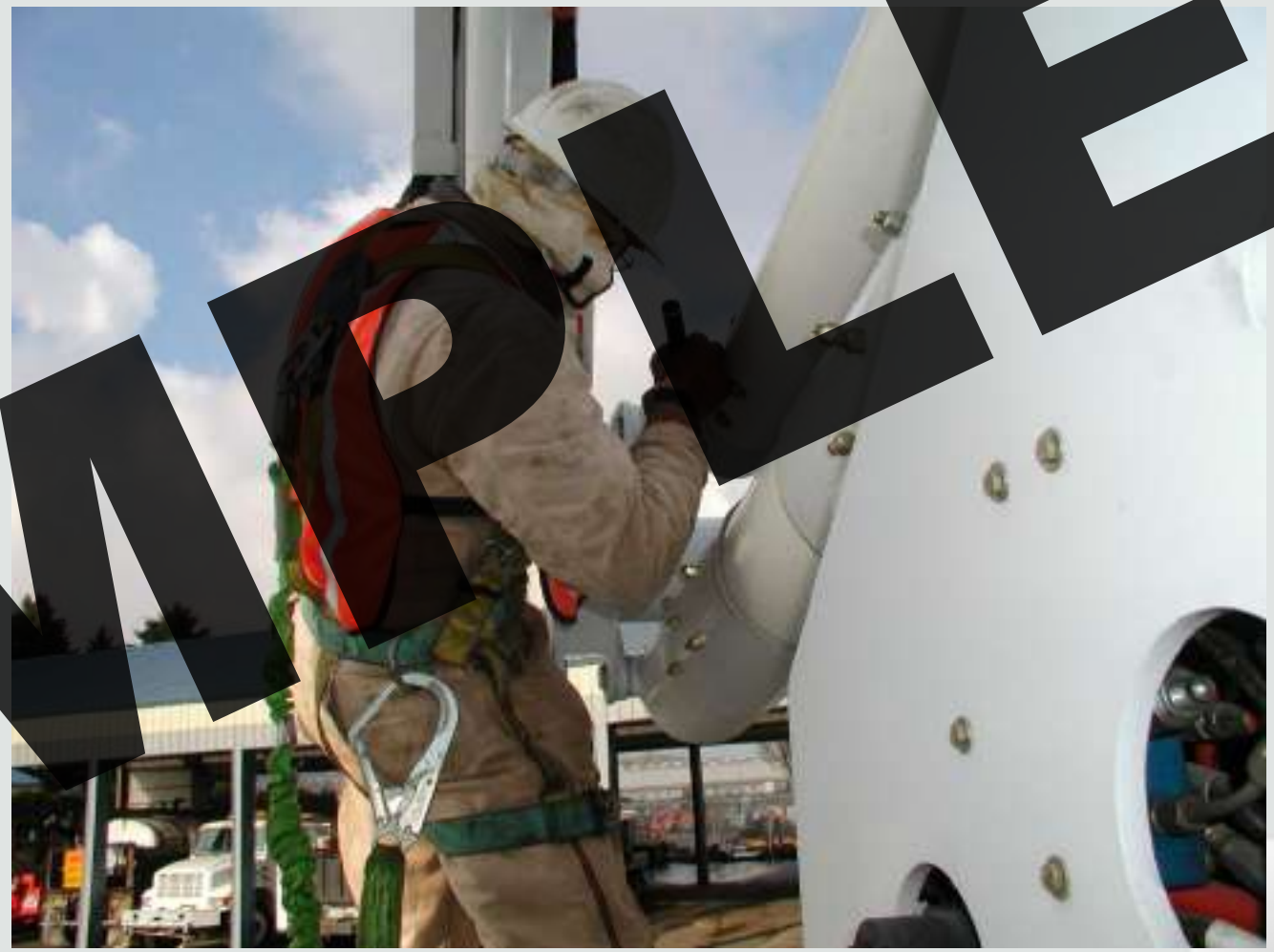
Initial training, as well as any evaluations or refresher courses must be documented with the name of the person or persons who taught the class or conducted the evaluation. Although OSHA doesn't require wallet cards as proof of training, many companies and worksites do require onsite proof that you have been trained. At the very least, in the case of an investigation, OSHA will want to see proof of proper and consistent training (in the way of training outlines, class lists, training goals, tests, certificates, etc.).

These are the main OSHA and ASME standards concerning aerial lifts. Many states have additional standards as do some industries such as Maritime, Mining and Offshore oil platforms. It's your responsibility to know all federal, state, and local rules that apply to your machine and job site. If you are not sure, ask your supervisor or safety coordinator.

Inspections

Monthly or yearly inspections, referred to as periodic inspections, should be thorough and performed by a competent person. A record should be kept of these inspections along with any repairs or maintenance that are made.

Each day before the lift is used, the operator, or a designated person, should inspect it. Using a checklist usually found in the operator's manual will keep you from overlooking something important.



Load tests of bucket trucks should be performed on a regular basis, especially if there have been any structural repairs. Load tests will determine whether the lift can handle its capacity through all of its functions. For boom supported lifts, these will test its stability and show the condition of the hydraulic components including the lift cylinders and extension cylinders.

*(Pictured: a load test using buckets of sand)

At the conclusion of the inspection, report any damage or malfunction to your supervisor. Never use a machine in need of repair.

Only trained and authorized personnel are permitted to operate a bucket truck. Equipment operators also share in the responsibility to ensure 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.
- Performed a thorough pre-shift inspection each day prior to operating the machine.

Anatomy & Components