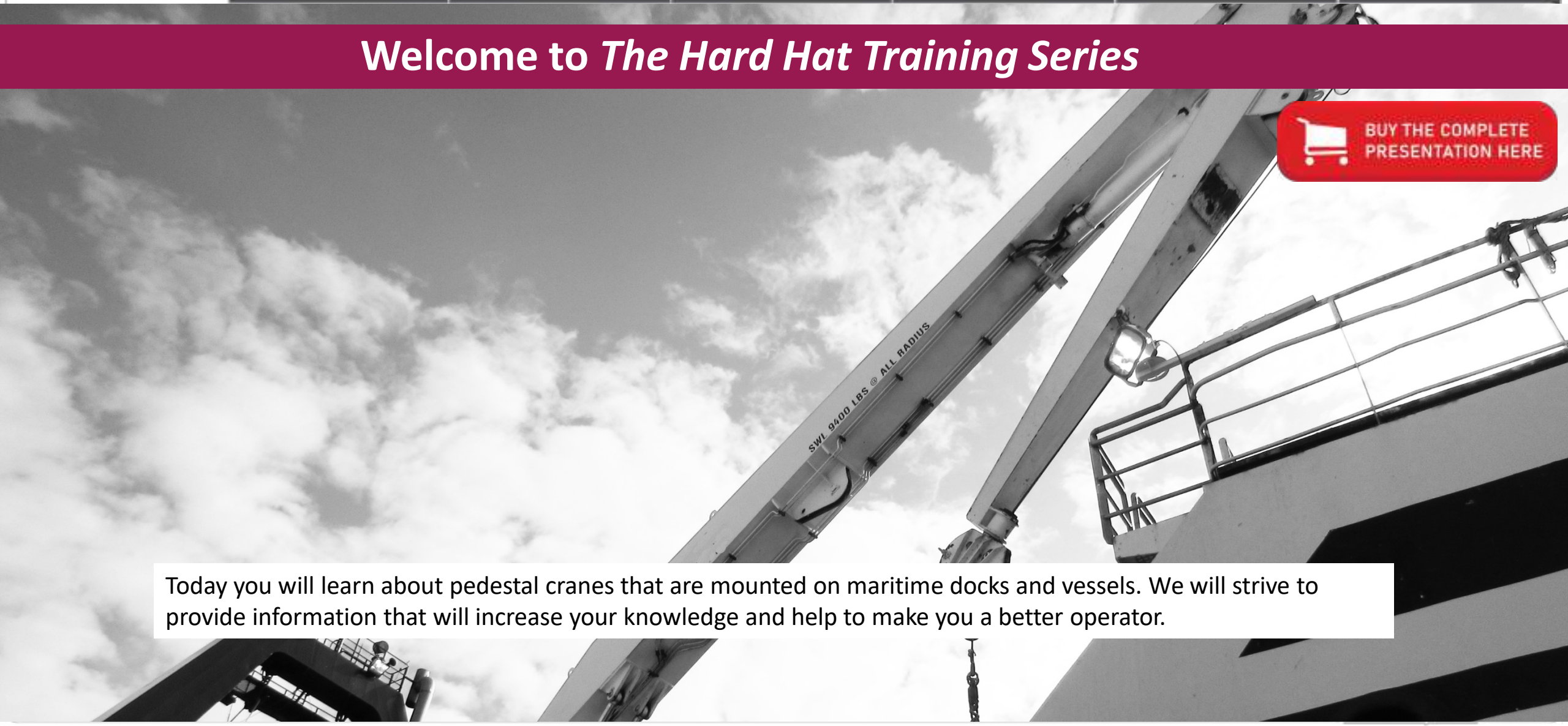
Welcome to *The Hard Hat Training Series*



Today you will learn about pedestal cranes that are mounted on maritime docks and vessels. We will strive to provide information that will increase your knowledge and help to make you a better operator.

In our highly mechanized world, cranes are the workhorses that have increased the economic growth and productivity in construction, mining, logging, maritime, production and service facilities. It is not uncommon while driving in urban areas to see mobile cranes, tower cranes and maritime cranes all in a short period of time, performing a wide variety of jobs.

Maritime cranes are essential in the on and off load of products and machinery. They also aid in the manufacture and repair of ships and boats. From large gantry cranes used to lift containers on and off ships to small swinging jibs used for lifting smaller loads, training is needed to ensure safe operation and productivity.

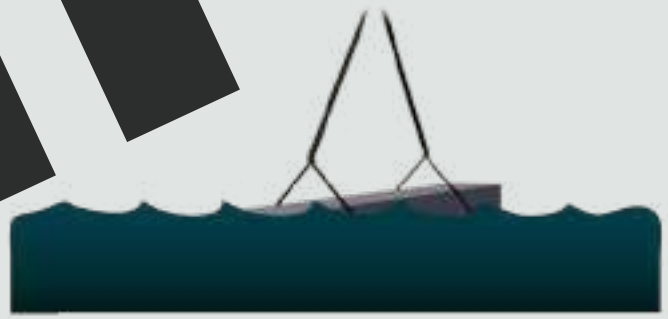
During this training we will discuss pedestal cranes, starting with the anatomy and stress the importance of inspecting them each day before it is put into service.

Wind Gusts Exceeding 20 MPH

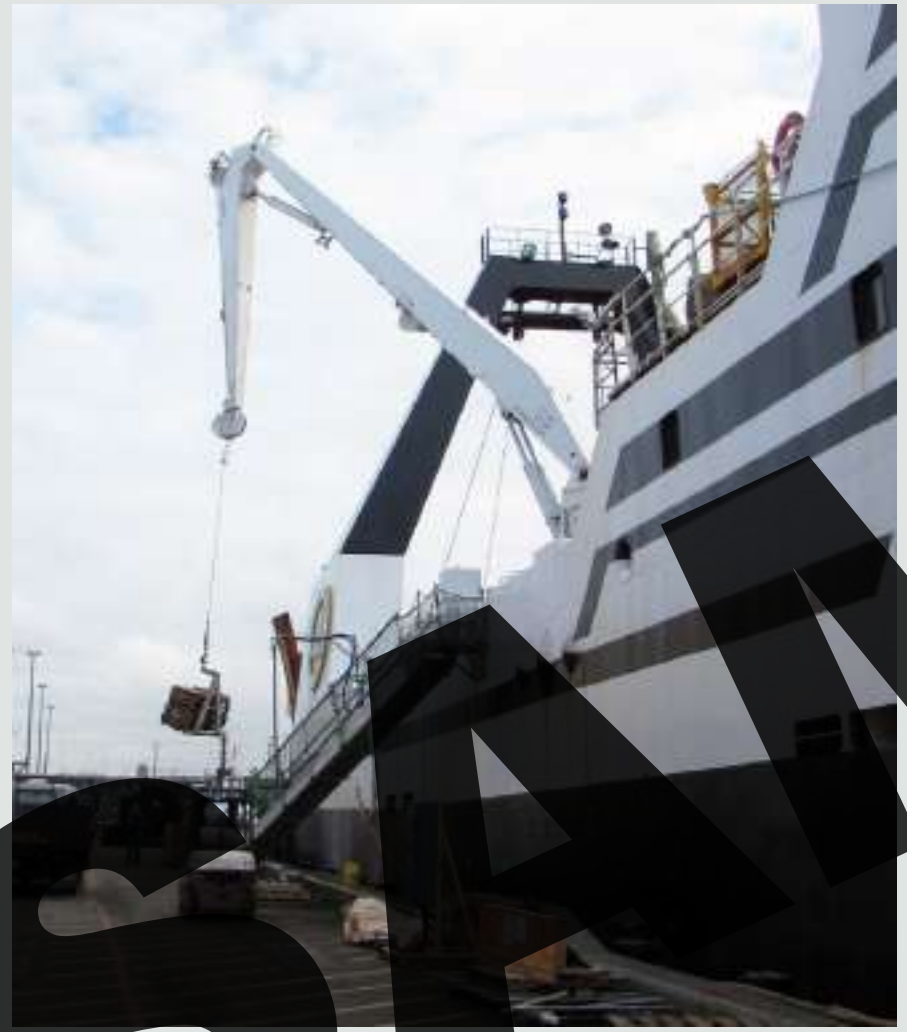
Below-Freezing Temperatures

Wet, Dark, Foggy Conditions

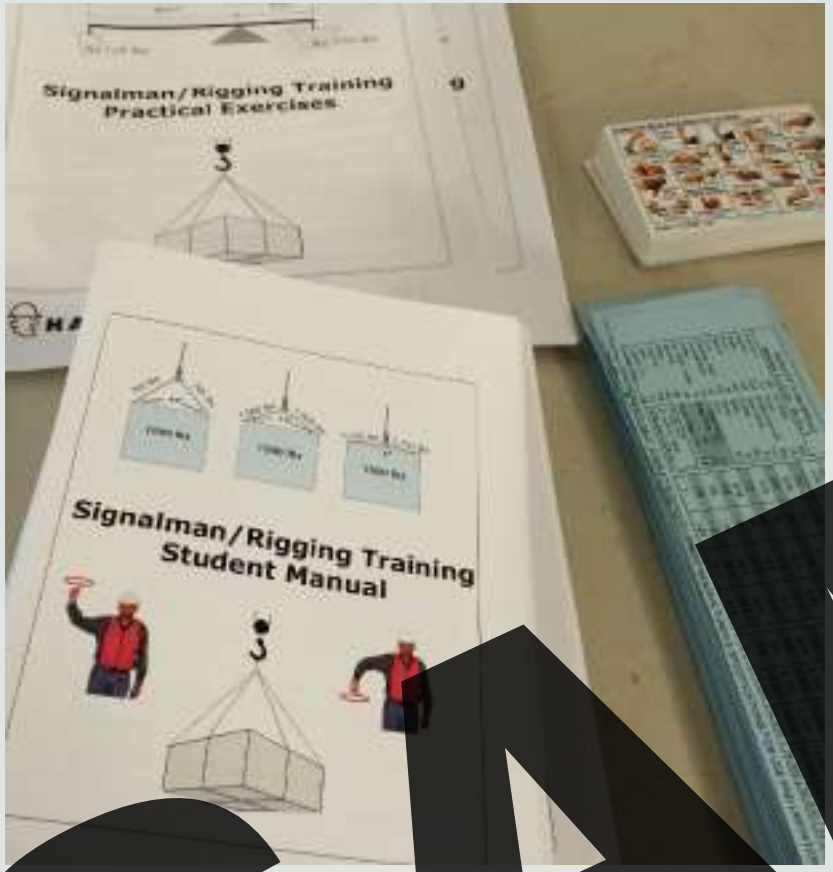
Lifting Something Out of the Water



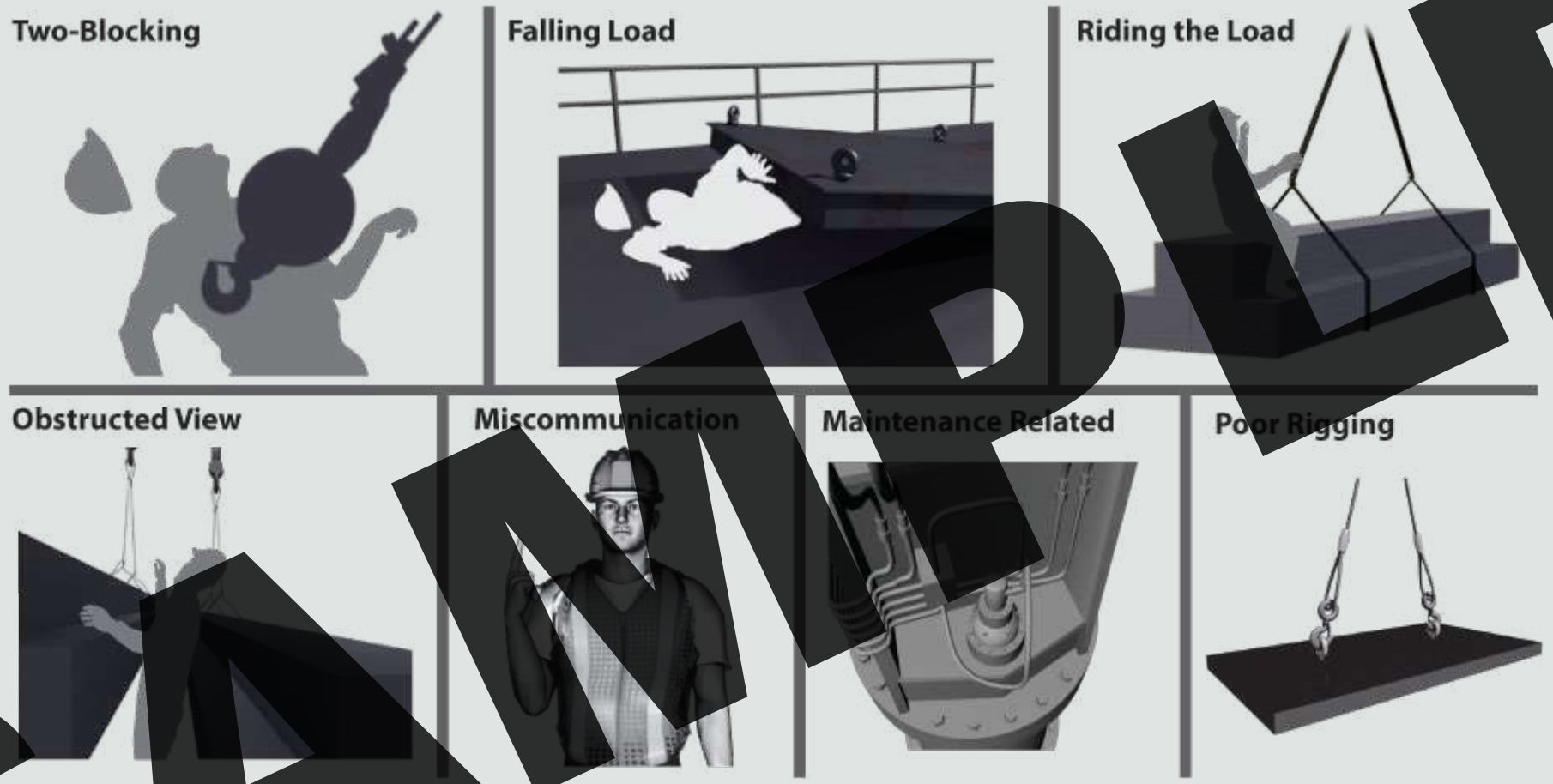
We will talk about lifts that are “critical lifts” and the additional planning that is required.



We will discuss some basic rigging principles and how to safely inspect and use lifting slings and other common lifting hardware.



We will discuss the safety considerations of making a lift and the importance of good communication and proper hand signals.



Lastly, we will introduce some of the most common hazards associated with cranes in the maritime industry and show you how to recognize, avoid or minimize them.

Upon completion of this training, you should be familiar with the types of cranes 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.

Maritime Crane Types

Strictly defined, a maritime crane is any type of crane that works around or is mounted on a dock, vessel or in a shipyard and is used for on and off-loads of marine vessels or the repair and construction of ships.

Pedestal mounted cranes are perhaps the most common found on board vessels and docks. They can either come equipped with a straight, stiff boom or an articulating boom.

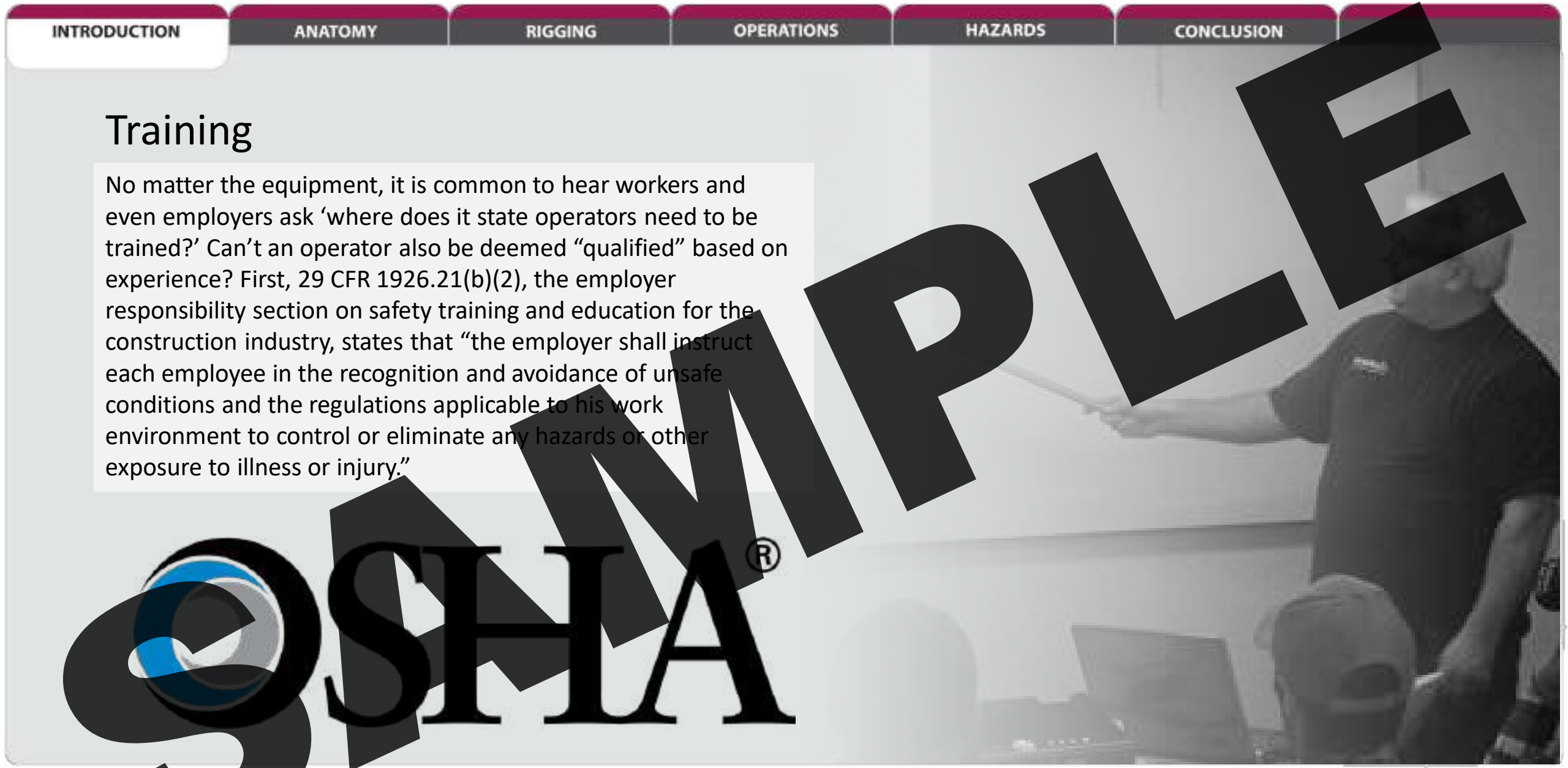
Swinging jib cranes are the simplest dock crane that often consist of just a fixed boom, manual swing and electric winch for the hoist line.

Some larger ships and many derrick barges have lattice boom friction cranes that have capacities from 25 tons to over 250 tons.

Portal cranes (sometimes called whirleys) and container cranes are perhaps the most visible, sticking out against the horizon like huge mechanical dinosaurs.

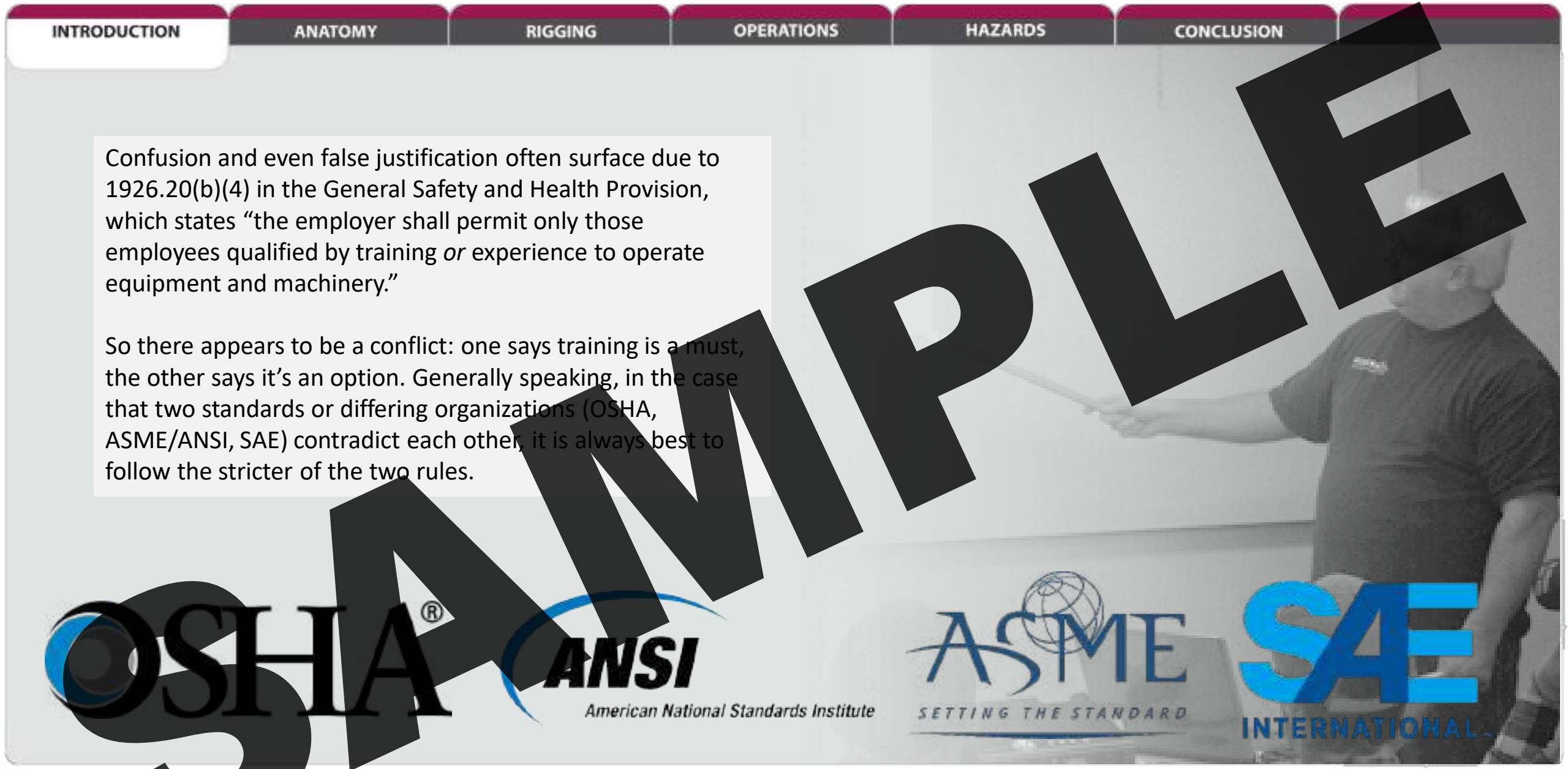
Training

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.



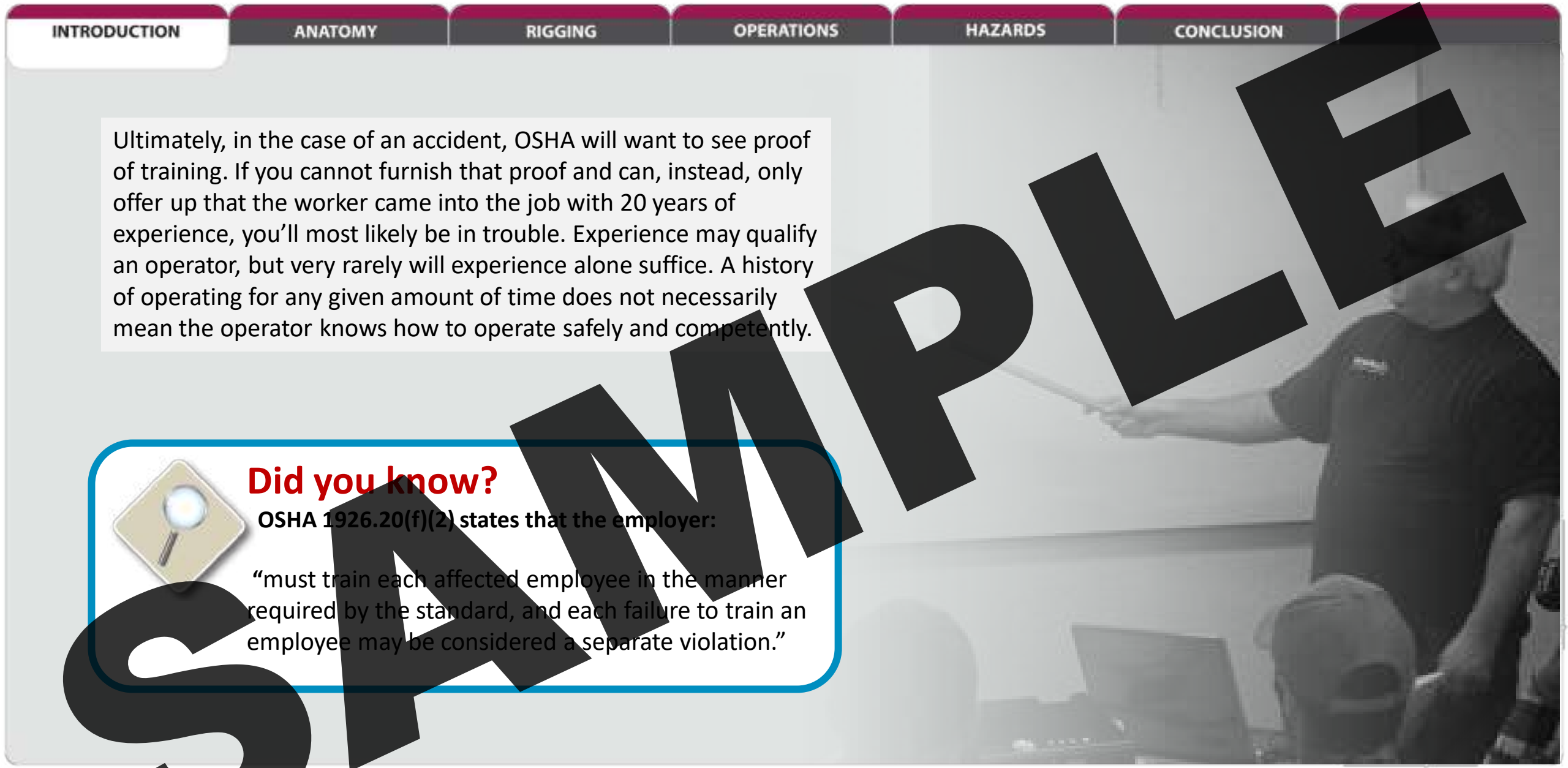
OSHA®

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 straight boom versus knuckle boom, vessel mounted versus dock mounted, etc; they do not necessarily mean size, although size can play a factor.

Can you think of any differences that might make a pedestal crane a different type, thus requiring additional training?

In the end, if the crane type, brand or size vary enough from the crane you were trained on, you will need to receive additional training to cover any differences.

The same goes for attachments and changes in work site conditions. You will need to be instructed on safe use and potential hazards when it comes to using attachments like man baskets, Billy Pugh's, forks, lifting tongs or other means of rigging to hoist loads.

Additionally, if you've always operated on a construction site but are asked to operate in a warehouse or on a dock over water, these changes will also require some 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.)

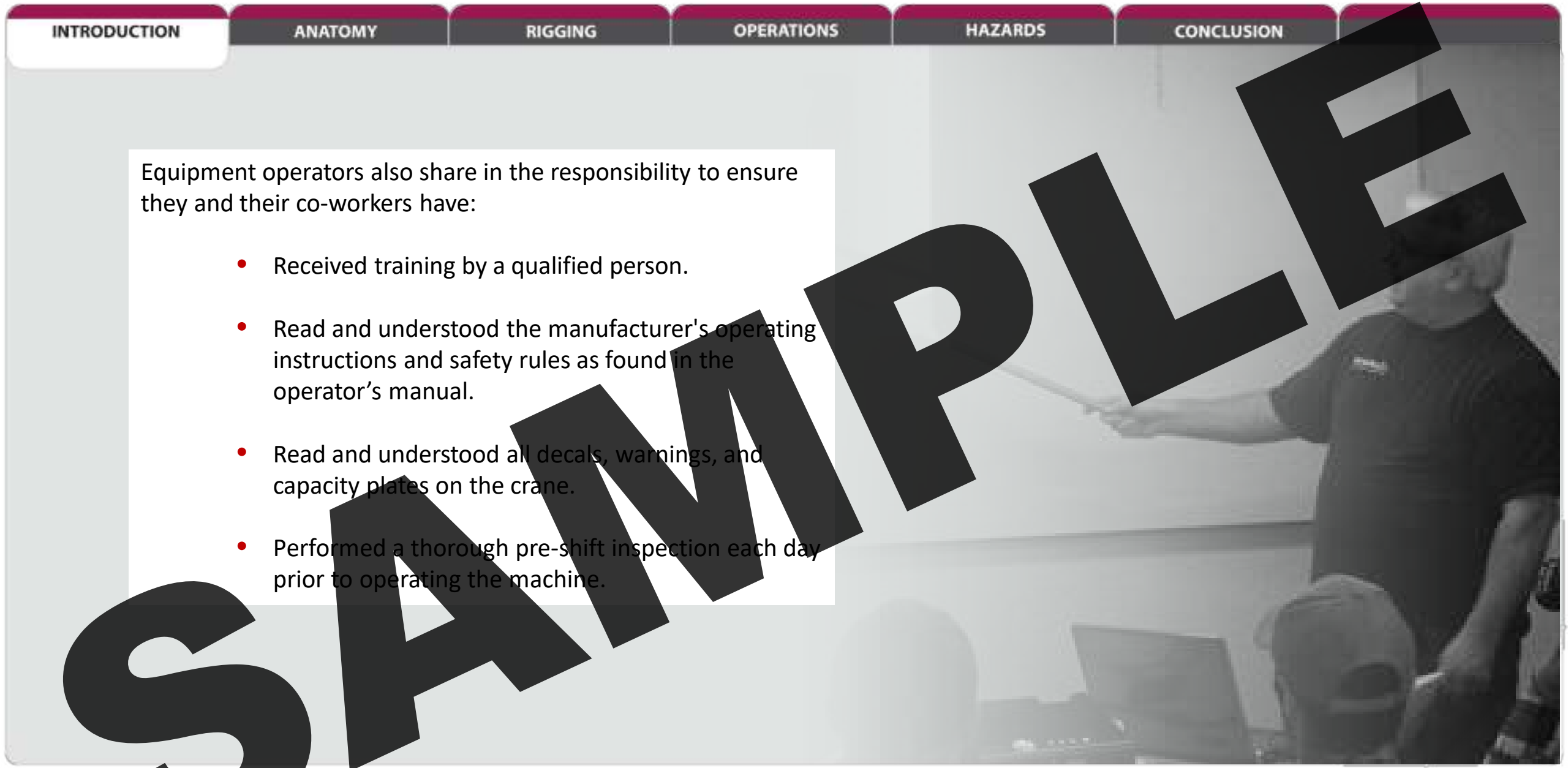
Standards

These are some of the main standards concerning cranes and material hoists. Of course, states and cities have additional standards, as do some industries such as maritime, mining and offshore oil platforms.

We have provided these as a guide, but it's your responsibility to know all federal, state, local and company rules that apply to your machine and job site.

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 crane.
- Performed a thorough pre-shift inspection each day prior to operating the machine.



ANATOMY & COMPONENTS