



SAFETY SERVICES
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WHITEPAPER



Understanding Material Handling and Rigging Regulations



Complete Rigging Safety Solutions

Rigging safety is a critical part of shipyard and construction employment, used to lift heavy materials to heights with cranes and other devices. Riggers also act as signalmen. Improper rigging of a load or a rigging failure can expose riggers and other workers nearby to a variety of potential hazards.

Annually, about 50 riggers are killed when loads have slipped from the rigging, or when the rigging has failed. To protect workers, OSHA set a series of strict rigging requirements. These requirements call for you to maintain rigging equipment, properly train employees and more.

By cutting down on accidents through an effective program, your company can not only improve its profitability, but remove the risk for a costly OSHA fine or lawsuit.

Hazards of Rigging in Crane Operations

Rigging involves the use of cranes and other large pieces of equipment to lift steel and other materials. OSHA heavily regulates this practice. With at least 225,000 cranes operating in the U.S., accidents are bound to happen, but the majority of crane accidents resulting in fatalities and injuries are preventable, according to the Occupational Safety and Health Administration (OSHA). More than 50% of all mobile crane accidents are the result of mistakes made when the crane was being set up. All of these accidents are preventable by following the manufacturer's recommendations for assembly and dismantling, by using the correct components, and by observing the necessary precautions.

Other Hazards Associated with Cranes Include Fall Hazards Created By:

- Uneven working surfaces
- Wet and slippery working surfaces
- Working surfaces not cleared of obstructions
- Improper use of portable ladder
- Unprotected sides, bulkhead openings, deck holes more than 5 ft.

Struck-by and Crushing Hazards Created By:

- Gear and equipment not properly inspected
- Defective gear and equipment
- Moving parts and equipment
- Improperly rigged loads
- Improper use of tag line allowing hoisting material to swing out of control
- Loads swung or suspended overhead
- Hazardous locations between a swinging load and fixed object

Electrical Hazards Created By:

- Use of hoisting and hauling equipment near energized lines
- Tools and equipment not properly grounded
- Defective electrical tools
- Worn or frayed electric cables
- Hazardous locations between a swinging load and fixed object

In March 1992 OSHA adopted, CFR 1910.1030, a policy designed to limit exposure to blood and other bodily fluids at the workplace. [3] The policy was initially tailored for hospitals, funeral homes, nursing homes, clinics, law enforcement agencies, emergency responders, and HIV/HBV research laboratories. Compliance with the standard requires employers to meet these criteria with a bloodborne pathogen training.

The Hepatitis B Vaccination- All employers are required to provide employees with potential for exposure access to a Hepatitis B vaccination, unless the employee has previously received the complete Hepatitis B vaccination series. If the employee initially declines Hepatitis B vaccination but later decides to accept the vaccination, the vaccination shall then be made available. All employees who decline the Hepatitis B vaccination offered shall sign the OSHA required waiver indicating their refusal.



Exposure Mitigation Plan- Employers are required to develop an exposure mitigation plan. This plan must identify, in writing, tasks and procedures as well as job classifications where occupational exposure to body fluids may occur. It must also set forth provisions specifying the procedure for evaluating circumstances surrounding exposure incidents. The plan must be accessible to employees and available to OSHA. Employers must review and update the plan annually.

Personal Protection Equipment Program- Employers must provide, at no cost, and require employees to use, appropriate personal protective equipment such as gloves, gowns, masks, mouthpieces and resuscitation bags. In addition to providing this equipment, employers must train employees on the proper use of this equipment.

Training- OSHA requires employers to have annual refresher training in place where employees are at a high risk for exposure. This training must occur before employees are allowed to perform any tasks. Additional training will be provided when changes such as modification of tasks or procedures affect the employee's occupational exposure. Any employee who is exposed to infectious materials shall receive training, even if the employee was allowed to receive the HBV vaccine after exposure.

OSHA Requirements for Rigging

OSHA has established multiple regulations designed to prevent accidents during the use of rigging. These regulations require you to:

- Inspect rigging equipment for material handling prior to use on each shift and as necessary during its use to ensure that it is safe. Remove defective rigging equipment from service.
- Inspect the ground.
- Never load rigging equipment in excess of its recommended safe working load.
- Remove rigging equipment, when not in use, from the immediate work area so as not to present a hazard to employees.
- Make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected, and make such record available for examination.
- Train on rigging materials
- Train on proper usage
- Provide and ensure proper use of proper PPE
- Train on hazards
- Establish and maintain effective signaling procedures

While the blow of a workplace injury cripples many companies, safety training programs are proven to drastically reduce the risk of injury and increase workplace productivity. Through independent studies, OSHA has confirmed employers who have in place a safety and health training program experience a 52 percent lower rate of "injury with days away" than employers without a program. [2]

A second study of private industry employers by OSHA found even more benefits to a safety training program. Here are a few highlights of those programs:

- Average sales rose 7.5 percent
- Manufacturing defects and waste dropped from \$2.7 million in 2001 to \$435,000 in 2005
- Improved decision-making
- Emergency modification rate dropped by 45%

Safety and Health Initiatives Reduce Indirect Costs, Due to:

- Increased productivity
- Higher quality products
- Increased morale
- Better labor/management relations
- Reduced turnover
- Better use of human resources

Workplaces that establish safety and health management systems can reduce their injury and illness costs by 20 to 40 percent, according to OSHA. Studies not only show the impact safety training has in increasing productivity and preventing injury. It shows the value training has to prevent casualties. [4] A study of the California insurance industry determined that every dollar invested in safety training resulted in \$3 or more dollars in savings." Safety training is not a cost, it is an investment.



By requesting and reading this report, you are no doubt aware of the hazards associated with aerial and the long list of regulations your company must abide by. Meeting these regulations is a tedious process requiring you either to develop a training program yourself or to outsource with expensive safety consultants. There is a better solution.

Here at Safety Services we have developed a “Do-It-Yourself” training program that is both simple to administer and fulfills all your OSHA requirements. This innovative kit features an Interactive Training Program, Student’s Handbook, Instructor’s Handbook, OSHA Regulations, Student Tests, Training Logs, Fall Protection Checklist, Certificates, Wallet Cards and More.

Our turnkey kit is a simple three-step solution that brings all your employees into compliance.

1. Classroom/online training

The first step of our program is an intuitive electronic training session. Through the program, employees navigate an electronic training program at a computer and then take an automatically graded test.

2. Field training

The second part of training is in the field. During this portion of the session, your appointed trainer shows the trainee the infield applications of the materials they learned in the classroom session.

3. Evaluation

The third and final step to the training session is evaluation. Through this step, the trainer evaluates the trainee and either signs off on certification or retouches on topics that need more work. All certification through the program meets or exceeds OSHA requirements.

Overview of Materials Handling & Rigging Kit

The rigging safety kit starts by explaining the reasons for training and what makes up an effective training program. The next subject is the proper ergonomic principles of personally lifting heavy loads. Following that is a discussion on the proper way to stage and transport heavy materials by hand, vehicle lifts, reach forklifts and then roll-out truck beds.

Hazards of heavy lifting are explained in detail like: awkward positions, high frequency and long duration lifting, environmental factors, loading and unloading vehicles. Each discussed hazard includes the proper procedures for eliminating it from your workplace. Furthermore, you will be informed of the safe way to move larger material mechanically, avoiding storage hazards and how to stack materials.

Becoming Certified to Operate a Crane

This Material Handling and Rigging Kit covers important information to work with crane operators on how to rig the loads to be lifted, but it will not fulfill the requirements necessary to be a certified crane operator.

According to OSHA, all crane operators must be licensed.

There are 4 ways an equipment operator can be qualified or certified and meet OSHA Requirements:

1. A certificate from an accredited crane operator testing organization.
2. Qualification from the employer through an audited employer program.
3. Qualification by the US Military (only applies to employees of Department of Defense or Armed Forces and does not include private contractors)
4. Licensing by a state or local government.

Certification includes two parts:

1. A written examination that includes the safe operating procedures for the particular type of equipment the applicant will be operating and technical understanding of the subject matter criteria required in 1926.1427(j).
2. A practical exam showing the applicant has the skills needed to safely operate the equipment, including, among other skills, the ability to properly use load chart information and recognize items required in the shift inspection.

To learn how we can solve your company's rigging safety training and compliance needs, check out our products and services here or call us at (866) 329-5407 today. Remember, your one inquiry can save lives.

Citations:

- [1] <http://www.cpwr.com/hazpdfs/hazaeriallifts.pdf>
- [2] <http://www.labor.state.ny.us/workerprotection/safetyhealth/PDFs/WSLP/Cost%20Benefit%20Safety.pdf>
- [3] <http://www.osha.gov/Publications/smallbusiness/small-business.pdf>
- [4] <http://www.osha.gov/Publications/safety-health-addvalue.html>



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