

Standards and Guidelines

RTG-01 Rigging Training Guidelines



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The Association of Crane & Rigging Professionals encourages employers to incorporate the subjects on the following pages into training programs designed for employees who perform crane and rigging activities as a part of their daily tasks. The level and content of this training should be suitable and appropriate for the type of work being performed.

The ACRP places emphasis on providing training programs which meet the organizations published 10 points of "Excellence in Training". Quality training starts with identifying the needs of the participants, having well established goals for the program, providing thorough instruction, giving suitable question and answer time, implementing knowledge checks, conducting hands-on activities whenever possible and finishing with a summary of the training event. For more information about the ACRP and its special workshops and publication visit www.acrp.net

- 1) **SLINGS:** Employees should be trained in the care, use and inspection of all types of slings used within the workplace. Sling types may include wire rope slings, synthetic web slings, synthetic roundslings, alloy steel chain slings, metal mesh slings and synthetic rope slings.
- 2) **RIGGING HARDWARE:** Employees should be trained in the proper use and inspection of rigging hardware used within the workplace. Types of rigging hardware may include hooks, shackles, hoist rings, turnbuckles, rigging blocks, eyebolts, links, rings, swivels, wedge sockets, and wire rope clips.
- 3) **BELOW-THE-HOOK LIFTING DEVICES:** Employees should be trained in the use and inspection of below-the-hook lifting devices used within the workplace. Below-the-hook devices may include spreader bars, lifting beams, magnetic lifters, vacuum lifters, beam and plate clamps, tongs, coil and plate lifters, and custom designed lifting devices developed by a qualified person.
- 4) **AUXILIARY RIGGING EQUIPMENT:** Employees should be trained in the use and inspection of auxiliary rigging equipment used within the workplace. Auxiliary equipment may include items such as chain lever hoists, portable winches, industrial rollers, jacks, chain falls, beam clamps, and similar equipment.
- 5) **HITCH TYPES:** Employees using rigging should be trained in the various hitches suitable for a variety of sling types, and the effect of each hitch and connection method on the rated load. Hitches may include the vertical, choker and basket types used in single or multiple leg applications.
- 6) **LOAD WEIGHT ESTIMATION:** Employees should be trained in load weight estimation. Methods for estimating the weights of loads may include the use of volume, area, gallons and density.
- 7) **DETERMINING CENTER-OF-GRAVITY:** Employees should be trained in methods for finding a load's CG (center-of-gravity). The effect of the CG in relation to the rigging connection points should be fully understood.
- 8) **RIGGING TECHNIQUES:** Employees should be trained in rigging methods which promotes acceptable control of the load while during its transfer process. Proven rigging techniques should enable the user to avoid loss of load control due to sling slippage, sliding, load rotation or load flipping.
- 9) **SLING ANGLES & TENSIONS:** Employees should be trained in the effects of sling angles and "angle of loading". The correlation between sling angle, sling length, height off the load and sling leg tensions must be understood.

- 10) SLING PROTECTION:** Employees should be trained to properly select and use suitable materials which will prevent or minimize damage to slings and rigging equipment from its contact with the load.
- 11) TRAVEL PATH, LOAD HANDLING & TAGLINES:** Employees should be trained in the selection of a suitable path for moving the rigged load. Whether by overhead crane, mobile crane or other hoist mechanism, the route from take-off to landing including power line safety should be reviewed along with proper crane or hoist usage. Training should include a short session, which identifies the purpose and proper usage of taglines.
- 12) SIGNALS:** Employees should be trained in applicable hand signals for the cranes used within the workplace. If the situation dictates, the employees should be exposed to the correct audible and voice commands for horn or radio communication.
- 13) PERSONNEL PROTECTION:** Employees should be trained to recognize and respond to hazards associated with rigging activities such as pinch points, load swing, loads overhead, crush points while jacking or lifting, and potential bodily injury while tightening or adjusting rigging. Training should also address personal protective equipment appropriate to the work environment as recognized by industry standards.
- 14) RIGGER'S CHECKLIST:** Employees should be trained to identify the proper steps and sequence needed to conduct a successful rigging operation. These lift specific items should be covered in a pre-lift tailgate meeting. A simple checklist should be covered which addresses the elements listed in this Guideline.
- 15) RIGGING STORAGE:** Employees should be trained in proper sling and rigging equipment storage to avoid damage and make ready for its next use.
- 16) RIGGER VERIFICATION OF KNOWLEDGE AND SKILL:** All employees should be trained, and tested in writing and during hands-on performance in crane hand signals, and the inspection and safe use of rigging as applicable to their facility.