

Worksite: _____ Instructor: _____ Date/Time: _____

Topic C020: Aerial Devices and Cranes

Introduction: Cranes and Aerial Devices are designed to meet a specific need which they alone can accomplish. This task sounds simple, but modern cranes and hoists are complex machines that require a high degree of knowledge and skill to operate safely and effectively.

Aerial Devices and Cranes also require a strict maintenance program, since failure of almost any component on these machines may pose a safety hazard. Crane operators and maintenance personnel should be comprehensively trained, including an apprenticeship under the supervision of a knowledgeable, competent person. The information listed below applies to truck and crawler cranes, hammerhead cranes, derricks, and floating cranes and derricks.

General Crane and Aerial Device safety guidelines include the following:

- The employer must comply with manufacturer's specifications and limits applicable to all cranes and derricks. If specifications are not available, limitations must be based on determination of a qualified engineer.
- Attachments used with cranes must not exceed manufacturer's recommendations for capacity, rating, or scope.
- Rated load capacities, operating speeds, and hazard warnings or instructions, must be posted on all equipment and visible from the operator's station. Hand signals must be those prescribed by ANSI for cranes and derricks.
- The employer must designate a competent person to inspect equipment prior to each shift, and during use, to ensure the equipment is safe. Any defective equipment must be replaced or repaired before continued use.
- A thorough annual inspection of hoisting machinery must be made by a person certified by the U.S. Dept. of Labor. A record of these inspections, their dates, and results must be maintained by the employer (always keep a copy with the equipment).
- Moving parts of equipment must be guarded to prevent employees from coming into contact with them.
- The swing radius of the cranes rear superstructure must be barricaded to prevent employees from being struck or crushed.
- All windows must be made of safety glass and free of cracks, breaks, or distortions that may be hazardous to safe operations.
- If access to the cab roof is necessary for rigging or service, a ladder must be provided.
- Guard rails, handholds, and steps must be provided on cranes for access to the car and cab.
- Platforms and walkways must have an anti-skid surface and be kept free of oil and grease.
- Fuel tank filler caps must be positioned or protected to prevent a spill or overflow from running into the engine compartment, exhaust, or electrical systems. An operable fire extinguisher of at least 5BC rating must be kept at all operators' stations.
- Cranes must operate within regulated clearances when working near electrical transmission lines, unless the lines have been taken out of service and visibly grounded. Insulating barriers, if used, may not be attached to the equipment.
- No modifications or additions affecting crane capacity or safety may be made without the written permission of the manufacturer.
- All employees must be kept clear of loads about to be lifted or already suspended.
- If you are working on horizontal booms of hammerhead cranes you must be protected from falls by guard rails or fall arrest gear.
- Buffers must be in place at both ends of travel, on the trolley of bridge or overhead trolley hoists.
- Cranes mounted on tracks must have limiting switches and buffers at each end of the track.
- Overhead and gantry cranes must have load limits clearly marked on both sides and legible from the ground.
- Floating cranes, derricks, and mobile cranes mounted on barges must have a revised load rating chart if load ratings are reduced by the limits of the vessel. Mobile cranes on barges must be positively secured.
- The employer must comply with the requirements for protection of employees working onboard marine vessels.

Conclusion: All cranes, derricks, and hoists must meet the applicable requirements for design, inspection, construction testing, maintenance, and operation as prescribed by the ANSI safety codes. The employer must maintain a certification record that includes; dates of the items inspected, the signature of the inspector, and serial number of the equipment inspected. This record shall be maintained on file until a new one is prepared (keep a copy with the equipment). Follow these guidelines for safe Crane and Aerial Device operations.

Employee Attendance: (Names or signatures of personnel who are attending this meeting)

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These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.