



SECTION 10

CRANES, DERRICKS, HOISTS



Health & Safety Policy and Procedures Manual

1. **CRANES, DERRICKS AND HOISTS:** These rules apply to all Maul Electric, Inc. employees and subcontractors. Additional specific information can be obtained from the referenced OSHA Standard.
 - A. **OSHA Reference:** 29 CFR 1926.550
 - B. **Cranes And Derricks:**
 1. Only qualified individuals may operate cranes and derricks. Part of the qualification to include medical certification per the API 2D physical requirements.
 - a) Vision of at least 20/30 Snellen in one eye and 20/50 in the other eye with or without glasses, and have depth perception.
 - b) Be able to determine between red, yellow and green.
 - c) Hearing, with or without a hearing aid, adequate for the specific operation.
 - d) And no history of disabling medical condition which may be sufficient reason for disqualification.

Note: Follow-up evaluations to be performed at least every four years.

 2. All windows, windshields, mirrors, and other devices provided for visibility will be clean, free from cracks, and unobstructed.
 3. All cranes shall be equipped with at least 1 ABC rated fire extinguisher or in the immediate vicinity of the crane.
 4. The manufacturer's name and specifications applicable to the operation of the specific equipment will be attached to the equipment.
 5. Rated load capacities, the most recent load test and recommended rules for safe operation will be conspicuously posted on all equipment at the operator's station.
 6. A competent person shall inspect all machinery and equipment prior to each use and during use to ensure that it is in safe operating condition. An initial inspection and weekly inspections are required to be completed and documented. The inspections are to be turned into the Site Supervisor or designated Site Safety Representative no later than 12 hrs. after the inspection period.



Health & Safety Policy and Procedures Manual

7. All crawler, truck, or locomotive cranes shall meet the requirements of ANSI Standard B30.5-1968, Safety Code for Crawler, Locomotive, and Truck Cranes.
8. Passengers will not be transported on cranes.
9. Cranes and Derricks will not operate booms, loads, or rigging within 10 feet of overhead electrical lines rated at 50kV or below, 0.4 inches will be added to 10 feet for each 1kV over 50kV.
10. A competent person must be assigned to observe and take prompt action in situations where the operator does not have clear visibility.
11. Accessible areas within the swing radius of the rear of rotating superstructure will be properly barricaded to prevent employees from being struck or crushed by the crane.
12. The operator and the individual providing hand signals to the crane or derrick operator must know and use the proper hand signals for the equipment. The signals must be posted at the site.
13. Tag lines should be used on all loads that may spin or swing.
14. Do not pull the crane load-block to one side to attach the load. It must be positioned over the load in accordance with safe rigging procedures.
15. Crane outriggers must be in place at all times, except when traveling. Outriggers may need to be extended, however, when traveling with a load.
16. Cranes must be operated on firm, level ground. Mats, plating, etc. acceptable for the weight of the equipment and the lift, must be used when the ground is soft or recently excavated or when the load is near lift capacity.






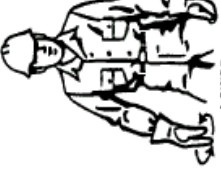
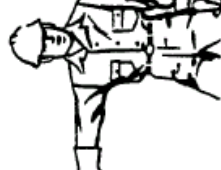






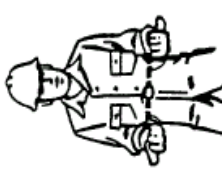
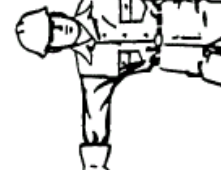

C. Hoists:

1. The employees shall comply with the manufacturer's specifications and limitations.
2. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions will be posted on cars and platforms.



Health & Safety Policy and Procedures Manual

3. Hoist way entrances of material hoists shall be protected by substantial full width gates or bars.
 4. Hoist way doors or gates of personnel hoists shall not be less than 6 feet 6 inches high and protected with mechanical locks, which cannot be operated from the landing side and are accessible only to persons on the car.
 5. Overhead protective coverings shall be provided on the top of the hoist cage or platform.
 6. All material hoists shall conform to the requirements of ANSI A 10.5-1969 (Safety Requirements for Material Hoists)
 7. The supporting structure, to which a hoist is attached, must have a safe working load equal to or greater than that of the hoist.
 8. Loose tools or materials will not "ride" on the load.
 9. Do not ride the load.
 10. Do not walk under or position yourself (or anyone else) under a load.
 11. Tag lines should be used on all loads that may spin or swing.
- D. **Wire Ropes:** Wire ropes must be taken out of service when one of the following conditions occurs. **Please refer to Section 25 Rigging and Hoisting, for specific inspection and use criteria.**
1. Running ropes are found to have 6 randomly distributed broken wires in one lay, or 3 broken wires in one stand or one lay.
 2. Wear has reduced the diameter or outside individual wires to 2/3 of its original diameter.
 3. Kinking, crushing, bird caging, heat damage, or any other damage resulting in distortion of the rope structure has been found.
 4. In standing ropes, more than two broken wires in one lay in sections beyond end connections, or more than one broken wire at end connections.

<p>CRANE SIGNALS</p> <p>Extracted from the American National Standard B30.5-1968, <i>Cranes, Derricks and Hoists</i>, with the permission of the publisher and copyright holder, The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th St., New York 10017.</p>	 <p>USE WHIPLINE (Auxiliary Hoist)</p> <p>Tap elbow with one hand, then use regular signals.</p>	 <p>MOVE SLOWLY</p> <p>Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal (Hoist slowly shown as example).</p>	 <p>HOIST</p> <p>With forearm vertical, forefinger pointing up, move hand in small horizontal circle.</p>	 <p>RAISE BOOM</p> <p>Arm extended, fingers closed, thumb pointing upward.</p>	 <p>STOP</p> <p>Arm extended, palm down, hold position rigidly.</p>	 <p>LOWER</p> <p>With arm extended downward, forefinger pointing down, move hand in small horizontal circle.</p>	 <p>LOWER BOOM</p> <p>Arm extended, fingers closed, thumb pointing downward.</p>	 <p>EMERGENCY STOP</p> <p>Arm extended, palm down, move hand rapidly right and left.</p>	 <p>TRAVEL (One Track)</p> <p>Lock the track on side indicated by raised fist. Travel in direction of other fist, rotated in front of body. (For crawler cranes only.)</p>	 <p>TRAVEL</p> <p>Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.</p>	 <p>TRAVEL (Both Tracks)</p> <p>Use both fists in front of body, making a circular motion about each other, indicating direction of travel; forward or backward. (For crawler cranes only.)</p>	 <p>RAISE THE BOOM & LOWER THE LOAD</p> <p>With arm extended, thumb pointing up, flex fingers in and out as long as movement is desired.</p>	 <p>DOG EVERYTHING</p> <p>Clasp hands in front of body.</p>	 <p>EXTEND BOOM (Telescoping Boom)</p> <p>Both fists in front of body, with thumbs pointing outward.</p>	 <p>LOWER THE BOOM & RAISE THE LOAD</p> <p>With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.</p>	 <p>RETRACT BOOM (Telescoping Boom)</p> <p>Both fists in front of body with thumbs pointing toward each other.</p>
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