

Doyle Group Crane Operation Safety Guidelines and Standard Operating Procedure

Doyle Group
Harvard University

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1. The Doyle group shall have at least one designated crane officer at all times. Crane officers will be certified via a training course in a manner determined by John Doyle and Harvard Environmental Health & Safety.
2. Initial crane-specific hands-on training with a Doyle group crane officer is required for all new users prior to operating any crane, lift, or hoist. For infrequent users (those who do not operate any of the cranes or hoists at least 1 time per year), crane-specific hands-on refresher training is required once every 2 years.
3. Users may only lift items to which their training applies. Users must seek assistance from the crane officer or a licensed technician for assistance lifting items that require special handling outside of the scope of the initial training.
4. At least 2 authorized users are required to participate in any lifting operation with the potential for personal injury. One person shall be responsible for operating the crane controls. The second person shall assist the crane operator, acting as extra eyes and ears and providing guidance.
5. The operator shall not participate in any activity which will divert his attention while engaged in operating the crane.
6. Each user involved in a lift shall be held directly responsible for the safe operation of his or her equipment. Whenever there is any doubt as to safety, each involved operator shall have the authority to stop and refuse to handle loads until safety has been assured.
7. Hard hats shall be worn when loads are lifted over 5 feet above the ground. Steel-toed shoes shall be worn for all lifts.
8. Know the weight of the load to be lifted, and do not exceed the maximum crane capacity.
9. Visually inspect the crane prior to use, and do not use if in need of maintenance (e.g., leaking oil, hook distorted, chain cracked or links elongated, crossed over or kinked cables, rails bent or dented, warning tag, etc.). Tag a non-functional crane "DO NOT USE," power it down if possible, and report it to a crane officer.
10. For an unfamiliar crane or a crane that hasn't been used for over a year, check all button functions for the crane, move crane in all directions, and check that the braking isn't too tight or too loose: Load

should decelerate gently at the end of each motion. Move the empty train hook to the limit of its vertical travel to make sure that the vertical limit switch is functional.

11. Select an appropriate number of slings of the proper length and load rating, and never use a wire rope or a chain as a sling. Note that sling capacity ratings are for straight vertical lifts. Capacity decreases as the cosine of the angle from vertical.
12. Select lifting eyes, hoist rings, and shackles of the proper size for the size of the load and slings.
13. Do not use any rigging equipment that is damaged (e.g., eyes that are bent or have damaged threads; slings that are torn, have broken wires, or are kinked; hooks that are distorted, etc.). Throw away all damaged equipment.
14. Ensure that the load is free to be lifted. Check that all bolts and other restraining fixtures are removed and, where appropriate, check that the load is not held by vacuum.
15. Center crane hook over the center of gravity of the load. (A proper centering of the crane limits the amount of swing produced upon lifting of the load).
16. Attach rigging equipment. Ensure that the sling(s) are all secured on hook beyond safety catch and the safety catch is latched; screw lifting eyes tightly against mating shoulder.
17. Remove or tie down all loose items from load (wrenches, spare bricks, electronic modules, etc.).
18. Slowly raise lifting hook to point where slack is removed from slings, while ensuring there are no kinks in sling(s), slings stretch in a straight line between shackles/eyes and hook without catching on a load component, and shackles are aligned within eyes in a stable configuration. Slings should not be wrapped about any sharp objects.
19. Slowly lift the load about one inch and stop. Slow intermittent moves will allow load to be slowly applied to crane, whereby unexpected shifts in load balance or swinging of load will be damped and the load can safely be lowered and adjustment made. Stopping at this point also safely checks that the lift brakes are working and are capable of holding the load.
20. Movement of all loads should be slow, smooth, and controlled. Move the crane in only one direction at a time. Rapid “snatching” of loads can produce unexpected excessive swinging that can either make the load unstable or swing into something or someone.
21. Never move a load over people or use a crane to lift people. Also avoid moving a load over hazardous equipment. Have the people and/or equipment moved or take the time to move by a less direct path.
22. Never leave the controls with a load suspended unless immediate area is controlled, e.g., to prevent someone from walking under load.
23. Listen to and watch the crane. If you notice anything that seems odd, wrong, or broken, stop. Tag the equipment out of service and notify a crane officer immediately.
24. If a crane is locked, labeled “out of order,” or red-tagged “off,” don’t attempt to use it.
25. If you have any doubts about lifting anything or about the crane, don’t lift - get aid. Call a crane officer or a more experienced user.

26. Approach all limits slowly.
27. Leave crane hooks high overhead after use.
28. Park cranes in a position away from sensitive and hazardous equipment and heavily trafficked areas.
29. Return all rigging to storage areas when finished.
30. Return crane control boxes to their storage areas so the next person doesn't have to look for them.