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OSHA Cranes and Derricks in Construction - Operation

Highlights_GREEN

Employer Obligations

* Verify operators are qualified to operate affected equipment.
* Determine whether the ground can support equipment and loads.
* Assess work zone hazards that would affect the safe operation of hoisting equipment.
* Conduct safety inspections of affected equipment.
* Provide hazard recognition training for employees.

IMPORTANT Dates

* Nov. 8, 2010 – Cranes and derricks standard (CDS) went into effect
* May 23, 2013 – CDS went into effect for demolition and underground construction
* Nov. 10, 2018 – Deadline for crane operators to be certified.

OSHA’s cranes and derricks standard (CDS) establishes processes to prevent the most common hazards that lead to injuries and fatalities in the assembly, disassembly and operation of cranes and derricks.

The standard was issued on Aug. 9, 2010, and was extended to crane and derrick operations in underground construction and demolition work in 2013. The deadline for [crane operator certification](https://www.federalregister.gov/documents/2017/11/09/2017-24349/cranes-and-derricks-in-construction-operator-certification-extension?utm_campaign=subscription%20mailing%20list&utm_source=federalregister.gov&utm_medium=email) became effective on Nov. 10, 2018.

Employers that use cranes and derricks in construction must comply with this standard. Employers should also become familiar with this standard if their employees work in areas or sites where cranes and derricks are in use. Finally, crane lessors that provide operators or maintenance personnel with the equipment they lease also have duties under the standard.

This Compliance Overview presents some general principles that apply to the operation of equipment affected by OSHA’s cranes and derricks in construction standard.

Links and Resources

OSHA’s cranes and derricks in construction [website](https://www.osha.gov/cranes-derricks/)

OSHA’s cranes and derricks [FAQs](https://www.osha.gov/cranes-derricks/faq.html)

OSHA’s small entity [Compliance Guide](https://www.osha.gov/cranes-derricks/small_entity.html#introduction) for cranes and derricks in construction standard

# General Operating Procedures

Employers must follow all manufacturer procedures while operating the equipment, including the use of attachments. If the manufacturer’s procedures are not available, the employer must develop and ensure compliance with the procedures necessary to operate the equipment and attachments safely. These procedures must be developed by a qualified person. If the procedures are related to the capacity of the equipment, they must be developed and signed by a registered professional engineer who is familiar with the equipment.

The procedures for operating the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and operator’s manual, must be readily available in the cab at all times for the operator’s use. If the load charts are only available in electronic form and a failure occurs that makes them inaccessible, the operator must immediately cease operations or follow safe shutdown procedures until the load charts are available again.

Before starting the engine, the operator must verify that all controls are in the proper starting position and that all personnel are in the clear.

The operator must not engage in any practice or activity that diverts his or her attention while actively operating the equipment, such as using a cellphone (unless it is being used for signal communications). Also, the operator must not leave the controls while the load is suspended, unless:

* The operator remains adjacent to the equipment and is not engaged in any other duties;
* The load is to be held suspended for a period of time exceeding normal lifting operations;
* A competent person determines that it is safe to do so and implements measures necessary to restrain the boom hoist and telescoping, load, swing and outrigger or stabilizer functions; and
* Barricades or caution lines and notices are erected to prevent all employees from entering the fall zone.

The requirements for leaving the controls when a load is suspended do not apply to working gear (such as slings, spreader bars, ladders and welding machines) where the weight of the working gear is negligible relative to the lifting capacity of the equipment as positioned, and the working gear is suspended over area other than an entrance or exit.

Whenever there is a safety concern, the operator must have the authority to stop all necessary operations and refuse to handle any loads until a qualified person has determined that safety has been assured. The operator must obey a stop (or emergency stop) signal regardless of who gives it.

If equipment adjustments or repairs are necessary, the operator must promptly inform the person designated to receive the information in writing, and if there are successive shifts, inform the next operator as well. The employer must notify all affected employees at the beginning of each shift of the necessary adjustments or repairs and all alternative measures.

# TagOut Requirements

If the employer has taken any equipment out of service, a tag must be placed in the cab stating that the equipment is out of service and is not to be used. If a function is out of service, a tag must be placed in a conspicuous position stating that the function is out of service and is not to be used.

If there is a tagout sign on the equipment or any switch or control, including the starting control, the operator must not activate the switch or control or start the equipment until the sign has been removed by a person authorized to remove it or until the operator has verified that:

* No one is servicing, working or otherwise in a dangerous position on or near the equipment; and
* The equipment has been repaired and is working properly.

# Weather Safety

A competent person must adjust the equipment and its operations when wind, ice and snow affect the equipment’s stability and rated capacity.

If a local storm warning has been issued, a competent person must determine whether it is necessary to implement the manufacturer recommendations for securing the equipment.

# Handling Loads

The equipment must not be operated, and the operator must not be required to operate the equipment, in excess of its rated capacity. The operator has an obligation to verify that the load is within the rated capacity of the equipment by using either an industry-recognized source for determining the weight of the load or by using a load weighing device or other similar device.

In addition, when handling loads:

* The boom or other parts of the equipment must not contact any obstruction;
* The equipment must not be used to drag or pull loads sideways;
* On wheel-mounted equipment, no loads must be lifted over the front area, except as permitted by the manufacturer;
* The operator must test the brakes each time that a load that is 90 percent or more of the maximum line pull is handled by lifting the load a few inches and applying the brakes. However, in duty cycles and repetitive lifts where each lift is 90 percent or more of the line pull, this requirement applies only to the first lift.
* Neither the load nor the boom may be lowered below the point where less than two full wraps of rope remain on their respective drums.
* Rotational speed of the equipment must be such that the load does not swing out beyond the radius at which it can be controlled.
* A tag or restraint line must be used when necessary to prevent rotation of the load that would be hazardous.

# Traveling with a load

Traveling with a load is not allowed if the practice is prohibited by the manufacturer. Where traveling with a load, the employer must ensure that:

* A competent person supervises the operation, determines if it is necessary to reduce rated capacity, and makes determinations regarding load position, boom location, ground support, travel route, overhead obstructions and speed of movement necessary to ensure safety;
* The determinations of the competent person are implemented; and
* Tire pressure maintains the manufacturer’s recommendation when applicable.