

### Before you begin

It's important for the entire team to understand the specific responsibilities of crane operators, riggers, and signal persons. All operators must review standard hand signals and determine whether a dedicated signal person is involved in the lift or not.



### Introduction

Pre-shift crane inspections and thoroughly pre-planned lifts are essential for job-site safety. Neglecting to thoroughly inspect a crane before a shift can result in failure of the equipment. This may cause damage to the machinery, injury to workers on the scene, or even death. Failing to pre-plan properly for a lift may also result in damage to the equipment and/or serious injury or death to the operator or ground crew.

### Definitions

**Competent Person** means one who can identify existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

**Qualified Person** means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

**Ground Conditions** are the conditions around the equipment affecting support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions.

## Discussion

Pre-shift inspections prior to crane use should include a review of structures, wire rope, hydraulic systems, and electrical systems. Use a check list for this inspection. Two kinds of inspections are required for safe operation: frequent and periodic inspections are dependent on the frequency and severity of use. Frequent inspections include pre-shift inspections and monthly inspections for the crane, wire rope, and hook. Periodic inspections are also known as annual inspections. Inspect wire ropes daily, and follow load charts precisely. The crane operator is responsible for the pre-shift inspection, and a competent person within the organization is responsible for the monthly inspection. A qualified person must do the annual (or periodic) inspection.

During the inspections, you are looking for cracks in structures, as well as leaks in hoses, cylinders, and control valves. Check wire rope for broken or frayed areas, crushed portions, general wear, and proper end connections. Also, check operator aids and safety devices that may be malfunctioning. If you find something wrong during the inspection, document the deficiency and give it to your supervisor. If the deficiency is in a safety device of any kind or is a structural issue, you must tag-out the crane and remove it from service. This holds true for wire rope and hooks. If the deficiency is an operator aid, the crane can be used if the alternate measures are used per OSHA regulations and the crane is then repaired.

Pre-planning a lift means proper site preparation, which involves ground prep, identifying the work zone, and locating aboveground utilities. Know your surroundings and apply safe clearance measures to power lines. Ensure there are no unauthorized personnel in the work zone. You must determine whether the crane can make that specific lift and whether the lift is within the capacity of the crane.

There must be a greater level of awareness with all aspects of crane operation. The operator must have knowledge of site prep, power line safety, standard hand signals, basic rigging, and be aware of the responsibilities of each person involved in the lift or work zone areas. Any deviation from this can result in catastrophic consequences.

## Conclusion

Pre-shift inspections are critical for protecting the equipment, and most importantly, the people on the job site. Putting careful thought and consideration into pre-planning every lift can make certain you don't push the crane beyond its capacity. It will also ensure the safety of the operator and the ground crew. When done correctly, crane operations can be completely safe, without incident.

## Group activity

Take out your phones, tablets, or computers and locate the [OSHA E-tool](#). Once you find it, review the "Site Preparation" tab in Blue, as well as each of the drop downs on that page. Discuss the key points made by the E-tool.

## Resources

[National Commission for the Certification of Crane Operators](#)

[Cranes and Derricks in Construction - Small Entity Compliance Guide for the Final Rule](#)