Crane Safety



What's at Stake

A crane is one of the most versatile and important pieces of equipment usually found on a construction job. It can be used to accomplish a lot of otherwise heavy lifting tasks. It is often one of the largest pieces of equipment on a work site with many different operating functions. This means the operator must be able to concentrate on the tasks and be aware of their surroundings.

What's the Danger?

Few experiences may be as frightening as when a crane becomes unbalanced while a load is being lifted or when the crane collapses under the weight of an excessive load. An unbalanced load or crane collapse can cause death to the operator, other construction workers, can cause damage to property or equipment.

A crane operator's view of the full crane is often limited, putting them at risk of coming too close to people, property or power lines.

Other dangers include the crane's boom, cable, or load contacting power lines and causing electrocution, or arcing if the crane is too close the power lines. Weather and environmental conditions including:

- Extreme heat or cold;
- Heavy rain and lightning; and
- Snowstorms or heavy snow; and windy conditions.

How to Protect Yourself

Power lines

Before assembling or disassembling:

- Notify owner/utility company – and consider it to be energized until utility company confirms power line has been de-energized and visibly grounded at the work-site;
- Ensure that no part of the equipment, load line or load (including rigging and lifting accessories), gets closer than 20 feet to the power line;
- Determine the line voltage and the minimum clearance distance permitted.

Weather

Cold/freezing conditions

Cold/Freezing Conditions can add weight to the boom or load; affect the hydraulic system; and can cause the operator’s hands to become cold – making it harder to operate the controls.

Stay Safe and:

1. Never operate a crane when the boom is covered with ice or snow – this increases the weight and can cause collapse.
2. Keep warm, especially hands, so you can carry out the crane movements accurately.

Wind

Winds speeds increase as you go higher in the air. This increases load movement/swing and instability. Power lines may also swing, so increase the safe working distance from the lines.

1. Check the crane’s manufacturer guide to see the safe wind speed conditions.
2. If no guide is available, consider postponing the lift if the wind speed/gust is in the range of 15-20 mph (7-9 m/s). Above 20 mph (11 m/s), the lift must be canceled.

Rain and Water

1. Heavy rain and water can increase the weight of load and overall weight limits of the crane. Muddy surroundings increase the risk of crane becoming unbalanced and workers have an increased risk of slipping in the mud. And wet weather gear can reduce peripheral vision and hearing.
2. Adjust your load weight because snow and rain increase load weight.
3. Remove mud and water from the load because it can pull it down.
4. Check your base ground is safe because rain, snow and mud can make the support surface unstable.

Poor visibility

1. Double check what your colleagues are doing, because poor visibility makes it hard/impossible to see hand signals.
2. Use radio communications or wait until visibility is better if possible.

General safety

Let’s wrap up with six general rules for crane safety.

1. See and be seen
2. Always be aware of swing radius
3. Never work or walk under a boom or load
4. Never ride the hook
5. Always wear a hard hat and other PPE
6. Stay off and away from the crane

Final word

Cranes are invaluable for moving heavy loads on construction sites. Treat them with respect, stay alert and stay safe.