

Greetings all, today we will discuss stowing a Tower Crane when out-of-service.

Building sites are becoming more and more congested as timelines for projects are compressed to speed up program delivery. Additionally, congestion can be due to nearby buildings, critical infrastructure, or restrictions to air space.

Builders and crane companies have started looking at using anti-collision devices to manage the movement of cranes and other plant when in operation. What is done for cranes when the site is shutdown?

Basic Principles

Each crane type operates differently and how they are prepared for out of service varies, but there are a few common steps to take regardless of the crane type or manufacturer.

1. Know the maximum wind speed for operations. This is usually 20m/s or 72km/h.
2. Raise the hook to the highest position near the boom-tip or trolley.
3. Release the slew brake to engage free slew / weathervaning.
4. Remove rigging from the hook. This allows the dogger to inspect the rigging before the next lift and prevent the rigging from being tangled due to wind.

Operating the crane at wind speeds above the design limit could overload crane components.

Specific Principles - Cranes

It is important to know the specific recommendations of the crane manufacturer that you are operating. This might be unique from other cranes on the same site.

- For luffing cranes, the boom angle to leave a stowed crane will depend on the boom length and the manufacturer. Most manufacturers lower the stowed boom angle when shorter booms are used.
- The manufacturer may require additional sail panels to be added to the boom/jib to assist with weathervaning.
- For hammerhead cranes, bring the trolley back to a minimum radius.

- If you have a crane with a travelling base make sure to lock the base into position using a rail clamp or anchors.

Specific Principles - Tethering

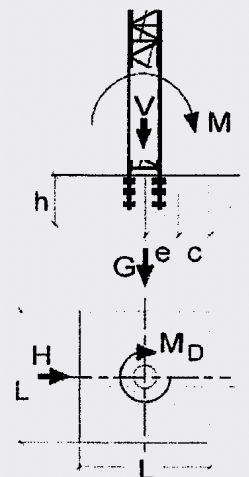
Site restrictions may not allow weathervaning or the stowed boom angle less than the maximum boom angle. *If this is the case, the manufacturers should be consulted to confirm the crane's stowed position.*

Manufacturer's can assess the change in forces if a crane is stowed with slew restrictions or higher jib angles. These forces could include:

- Twist of the towers, M_D
- Twist of the machine deck and crane due to higher wind forces, M
- Horizontal forces on the base, H

If the hook block needs to be tethered manufacturer's should consider:

- Tether location
- Tension on hoist rope
- Type of tether and attachment method
- Inspection criteria and frequency of inspection of the tether.



It is recommended that a minimum clearance distance of 1m is provided between the crane hook and structure.

Recap

If you know a storm front is coming in, orient the crane so that the wind is coming from the rear of the crane towards the boom, park the crane in its out-of-service condition and ensure the crane is in free slew before shutting down.

Stay Safe -CICA