

BSEE: Unsafe crane working practices result in injury

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The United States Bureau of Safety and Environmental Enforcement (BSEE) has published [Safety Alert #446](#) relating to an injury caused by unsafe crane working practices.

What happened?

A lead mechanic suffered a severe leg injury while performing a boom tip changeout on an offshore pedestal crane. He and his assistant deviated from the planned scope of work, failed to rig up the mid-section to the bridle (Figure 1) prior to removing the mid-section to boom tip connector pins (Figure 2), and failed to use boom connector safety pins (Figure 3). After removing the bottom right pin, both employees assumed the bottom left pin would be difficult to remove since it was bearing the weight of the boom section. When the lead mechanic struck the remaining connector pin, it unexpectedly ejected, causing the boom to drop and pinning his leg against a sledgehammer and grating (Figure 4), fracturing his tibia.

Facility personnel used a pallet jack, a piece of two-inch pipe, and a two-by-four piece of wood to lift the boom tip and pull the lead mechanic from under the boom tip and then administered appropriate first aid.

What went right

The response of the facility personnel was critical in providing lifesaving interventions until treatment could be provided at the hospital on shore.

What went wrong?

The company's incident investigation found that the root causes were:

- The Job Safety Analysis (JSA) was only completed by one employee and did not include rigging up the mid-section to the bridle prior to removing pins or the use of safety boom connector pins. In addition, the lead mechanic signed off on the JSA without actually reviewing it.
- There was no requirement for onshore management or the crew to review the JSA before starting work.

IOGP Life Saving Rules:



Bypassing safety controls



Line of fire



Safe mechanical lifting

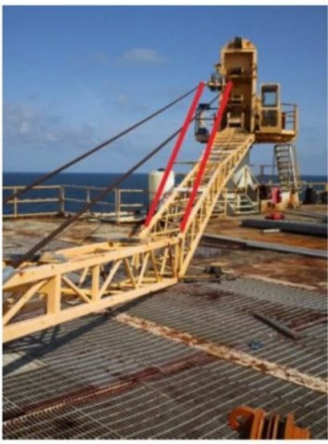


Figure 1 – Example of how mid-section should have been rigged



Figure 2 – Boom connector pin



Figure 3 – Boom connector safety pin



Figure 4 – Boom section on injured person's (IP) leg

Recommendations

- Review of policies and procedures, ensuring compliance with the JSA requirements.
- Reinforcing the use of **Stop Work Authority** particularly when the scope of work changes.
- Understanding the importance of staying out of the line of fire when working near heavy equipment and considering all possible pinch points when walking down the job.
- Verifying all safety equipment is available and in place before the job starts.
- Providing specific written procedures to individuals disassembling cranes.
- Ensure that you do actually review the paperwork, risk assessment, JSA etc **before you sign off on it** and before you start the job!!
- Ensuring specialized contractors create and maintain written procedures and checklists for common jobs.
- Conducting drills based on realistic injury and first-aid scenarios and inspect medical supplies and kits at the facility level.

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