

Impact of Sea-State on Lifting Operations

What happened?

Two recent incidents have highlighted hazards associated with unexpected worsening in sea-state during lifting operations.

Case 1 – The first incident (in Australian waters) occurred during lifting operations on a construction support vessel. While lowering a crane block to the deck, a large swell hit the vessel inducing a rolling motion and causing the block to swing. Despite efforts of the crane operator to control the swing, the block collided with an empty product reel (dislodging its sea fastenings), an air-conditioning unit and the walkway of another crane before it could be recovered to a safe height. Personnel in the vicinity of the lifting operation had earlier moved clear of the lifting area and nobody was injured, however the incident resulted in minor damage to the equipment struck by the block.



Damage to crane walkway and light caused by impact of swinging block.

Case 2 – The second incident (outside Australian waters) occurred during personnel transfer operations between a recently installed platform jacket and a vessel. Three people, who were involved in the commissioning activities for the recently installed jacket, were preparing to transfer back to the vessel and entered the personnel lifting device. Prior to the actual lift, a swing developed in the crane's headache ball due to a worsening sea swell. Despite efforts of the crane operator to control the swing, the swing gathered momentum until it eventually hit one of the platform legs and ricocheted into the frame of the personnel lifting device, striking one of the occupants. The injured person was taken to hospital but released later that day.

Platform jacket showing personnel lifting device and crane wire.



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What went wrong?

Both of these incidents resulted from a combination of poor planning of lifting operations and lack of suitable risk assessment to identify potential hazards and implement appropriate risk control measures. In particular, both lifting operations were conducted in congested areas where there was potential for vessel movement to result in lifted equipment impacting with surrounding structures, and while safer options had been identified, they had not been used.

Key Lessons:

Lifting operations are one of the most hazardous operations conducted on offshore facilities and require careful planning, identification of the hazards, assessment of risks and implementation of appropriate controls. It is important that any changes in circumstances, such as congested lifting areas and potential changes in sea-state which could lead to unpredicted movement of a suspended load, are given appropriate consideration in the task safety analysis.

Contact

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