



Significant Incident Summary No. 6

Offshore platform decommissioning near miss

Background

In 2021, two workers were involved in a near miss incident beneath a swinging suspended load while decommissioning part of a monopod offshore platform in the northern waters of Western Australia. The workers were cutting through the monopod's main leg (caisson) when the topside, which was rigged to a crane on a vessel, unexpectedly moved and detached from the supporting monopod and swung over the workers. The crane operator quickly manoeuvred the topside away from the workers, lowering it into the water to control its motion. The workers disembarked from the main leg to the designated crew safety vessel without incurring any injuries. The topside platform was safely retrieved onto the crane vessel.

Contributory factors

Factors assessed as having contributed to the incident include:

- dynamic forces that could be applied to a rigged load while a crane was in auto-tensioning mode were inadequately understood and considered when developing the lift plan
- the requirement for pre-load tension was not subject to adequate technical assessment
- the platform rotated on separation; the engineering assessment did not identify the turning motion induced by pre-load tension
- an over reliance of previously successful methodologies rather than the analysis of their suitability to the specific tasks of this activity.

Actions required

Measures to minimise the risk of a similar incident while conducting decommissioning activities include:

- a technical assessment of lift plans to identify and consider all forces acting on a load, including forces which may be unintentionally applied due to automatic settings and crane modes
- use castellated cut designs where a possibility of rotation (turning moment) of the load exists
- consider and assess the whole of life design, including commissioning and decommissioning procedures
- ensure workers are not under suspended loads.

Depictions of the incident

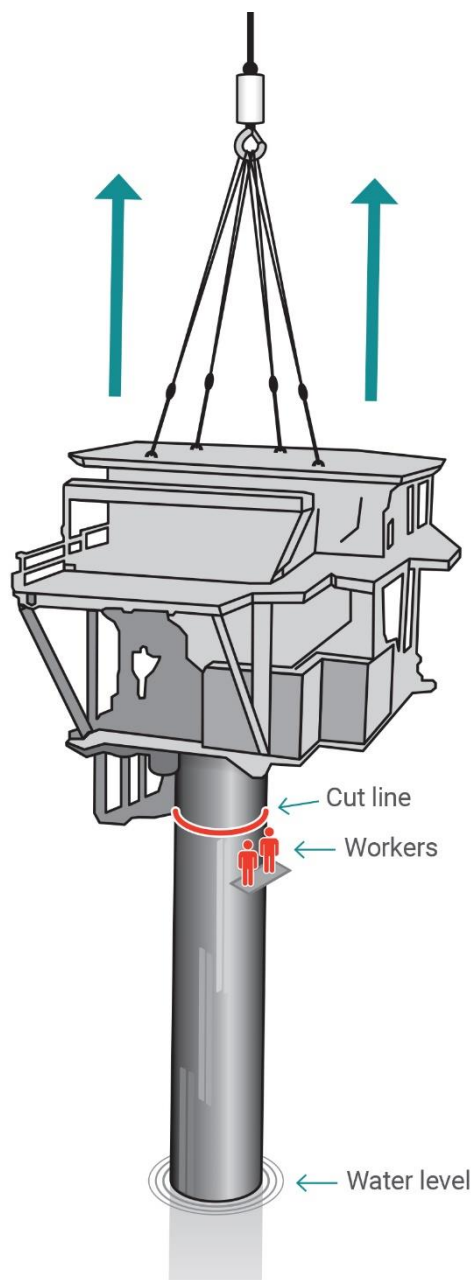


Figure 1: Pre-load tension is applied to the load. The force is insufficient to lift load under stationary conditions but is greater than required to lift the rigging.

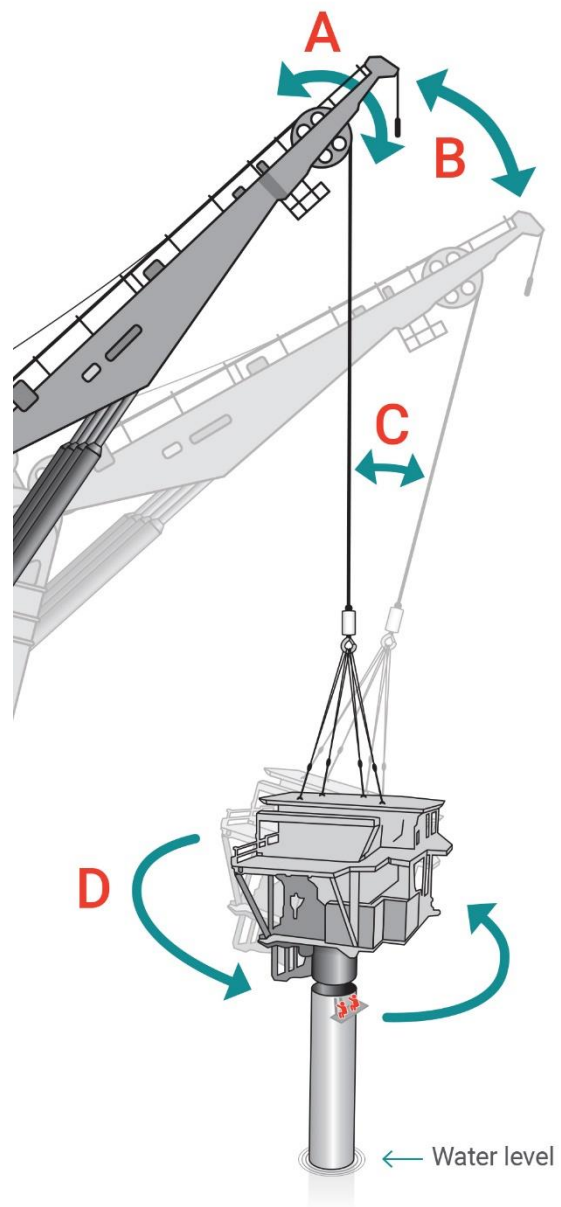


Figure 2: Unanticipated forces act on the load during the cutting of the caisson. The crane's autotension mode functions (A) in response to these forces and the crane head moves (B). The hoist rope shifts out of plumb (C) with the load's centre of gravity and the platform begins to lift and rotate (D). Alternating forces act on the load and the crane autotension mode compensates by re-adjusting the tension. The crane head returns to its original position and the cycle repeats as the autotension mode adjusts again.

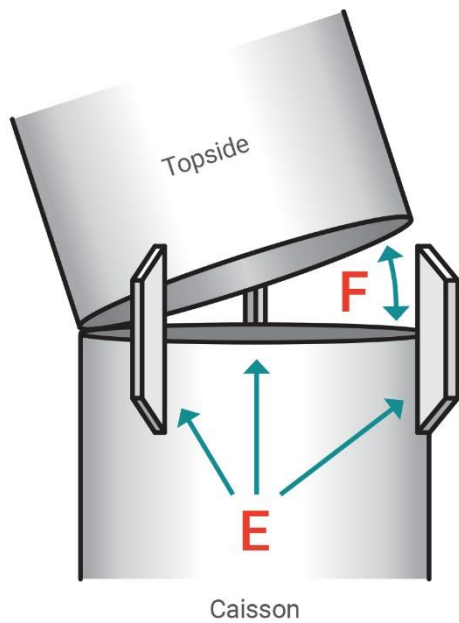


Figure 3: Temporary supports (E) on the caisson were insufficient to prevent lateral displacement and rotation of the topside when it was lifted at small angles (F).

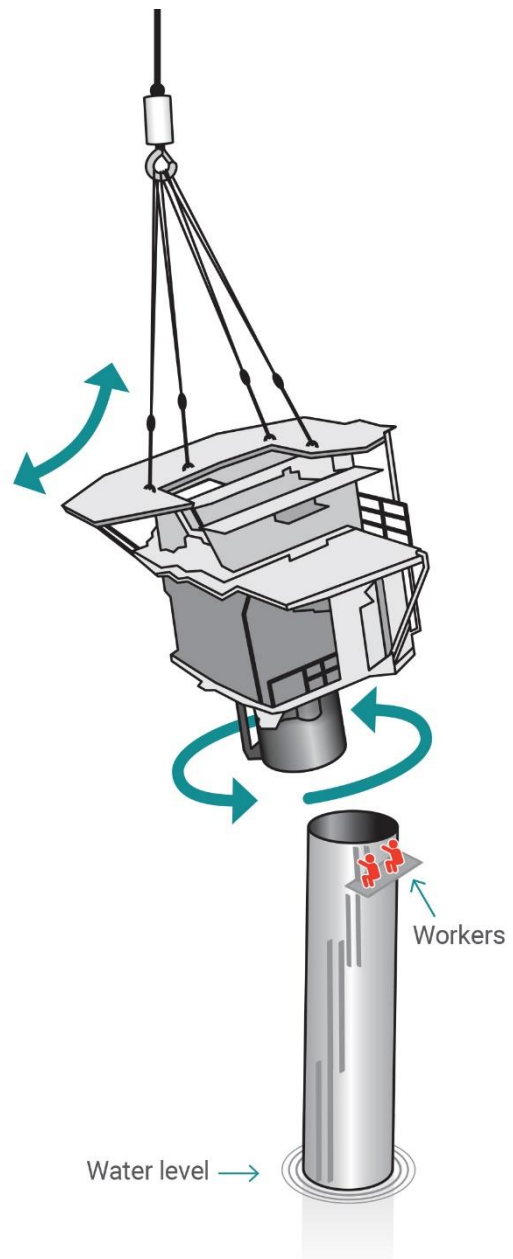


Figure 4: The load detaches from the caisson and begins to swing and rotate. The crane operator takes action to raise the load and then stabilise it in the water.

References and further information

Department of Energy, Mines, Industry Regulation and Safety

- [*Decommissioning and management of ageing assets: Guide*](#)
- [*Decommissioning of petroleum and geothermal energy property, equipment and infrastructure in Western Australian onshore areas and State coastal waters: Policy*](#)
- [*Decommissioning of petroleum and geothermal energy property, equipment and infrastructure in Western Australian onshore areas and State coastal waters: Guideline*](#)

National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

- [*Decommissioning compliance strategy 2024-2029*](#)
- [*Planning for proactive decommissioning*](#)
- [*Ageing assets and life extension*](#)
- [*Complying with your decommissioning obligations*](#)

National Offshore Petroleum Administrator (NOPTA)

- [*Guideline: Offshore petroleum decommissioning: In relation to the Offshore Petroleum and Greenhouse Gas Storage Act 2006*](#)