

## Description of incident:

The crane involved is a StahlProdukt offshore pedestal-mounted rope luffing crane.

The installation deck crew were conducting routine deck operations with the Crane.

Work was being conducted under routine crane operations permit. The deck crew were in the process of transferring work baskets at the forward end of the vessel.

An empty small work basket (weighing 200kg) was lifted from the main deck bunker station on the starboard side and transferred to a landing location forward of lifeboat 1 on D deck. The basket was safely landed on D Deck and left on the hook with bridles raised whilst the load handlers loaded the basket with scaffolding equipment.

The banksman noted the hoist and boom had lowered – he assumed the crane operator had given some slack to account for any vessel motion. The Banksman turned to view load handlers briefly, and on looking back at the crane, he observed that the boom and hoist had lowered and that the bridles had folded into the basket, and the headache ball was just above the basket.

Banksman informed the crane operator, who stated the joystick had been deactivated and observed that a PLC (Programmable logic controller) failure light had illuminated on the crane cab panel. The boom was raised using the joystick, the load disconnected, and the crane returned to the rest without issue.

## 7<sup>CS</sup> OF SAFETY

### CHANGE MANAGEMENT

Review your work team and highlight any changes to your supervisor.

Acknowledge that some of your work team may be distracted and may not see the change.

Ensure sufficient time has been taken to discuss what the impact of these changes may cause, and the responding actions agreed.

Ensure that the change has been understood by the work team, reinforce the practice of STOP work authority.

## Safe Mechanical Lifting

### Plan lifting operations and control the area



- I confirm that the equipment and load have been inspected and are fit for purpose
- I only operate equipment that I am qualified to use
- I establish and obey barriers and exclusion zones
- I never walk under a suspended load

## Findings:

- PLC failure led to an unsafe condition whereby the crane boom and hoist wires were paying out un-commanded.
- The failsafe brake solenoid valves were energised, causing the brakes to be released.
- A spurious current signal would have to be received by the hoist & and luffing lower proportional control solenoid valves, which results in the crane boom and hoist being 'driven down'.
- The PLC did not fail safe - A PLC watchdog function was available but had no 'executive action' on PLC fault condition.

## Good Practice:

- Ensure PLCs are designed to fail safe and that critical functions are available and tested.