

A CRANE INCIDENT – JAMMED LOAD THE DARK SIDE OF DUAL CONTROLS



Crane Incident - Jammed Load

The incident occurred on a large construction site in the Pilbara – we were one of several contractors doing the mechanical and structural package of works.

The task was to lift, position and attach minor structural steel beams into the main structure of a screen-house using a modern hydraulic telescoping boom type crane.



The crane was controlled through hand operated levers for swing, boom hoist, main winch and boom telescoping and 2 foot control pedals for boom hoist and boom telescoping.

The particular area was inaccessible by EWP and had to be accessed outside the installed handrails with riggers wearing fall arrest harnesses attached to anchor points in the vicinity the structural beam location.

The "In Fill" structural steel beam was lifted by the crane, lowered and manoeuvred into the approximate final position in between two horizontal beams.



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The rigger signalled the crane operator to go up on the hook – lift the beam. As this was being done – the beam caught the top flanges of the horizontal beams and jammed.

The rigger signalled the operator to cease hoisting.

The operator ceased operating the boom hoist hand controls, but the crane kept trying to hoist with the winch rope.

Frantic calls again were made to the operator to cease hoisting.

The operator was totally confused as to what was happening and deliberately removed both his hands from the controls – but the winch was still operating, and the wire was becoming tighter and tighter, and the crane started to be pulled over.

The Riggers realised that a catastrophic accident was about to happened and got away as fast as possible. The crane operator felt the crane start to rotate and got out of his seat to get out of the crane cabin.

As soon as the crane operator left his seat – the winch ceased operating.

There was a simple and scary answer to the cause – it was the hand and foot dual controls.

The operator had lost situational awareness as he had been pressing his foot on the foot pedals as the personal tension/panic was increasing and continued to do so even though he had released the hand controls.

Human Error or Defective Design?

The incident investigation determined that the root cause of the incident was the defective design of the dual crane controls. The design assumed that the crane operator **would always be aware** when he/she was operating either the hand or foot controls and would react appropriately if a load became jammed in place.

Management Response?

There were several options open to solve this issue.

1. Make the operator accountable, have him reassessed / retrained and share the incident with site crane operators (*Done*)

2. Advise the Crane Manufacturer of the event and incident findings and request this be addressed *(Not Done)*

3. Advise the Regulator (DMP) so this could be shared across the WA mining and construction industries. *(Not Done)*

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