



Safety Alert No. 480

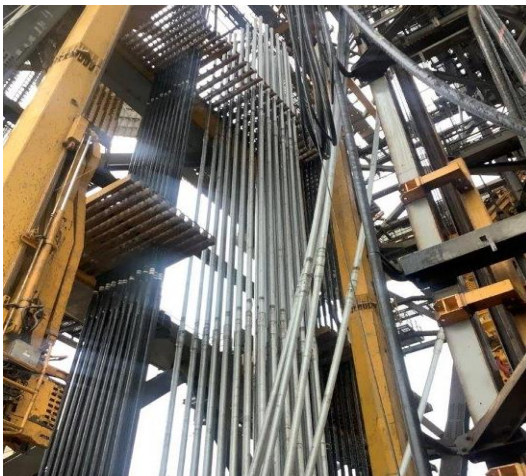
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## Fingerboard Locking Bolt Failure Leads to Near Miss Incident

The Bureau of Safety and Environmental Enforcement (BSEE) recently investigated a high potential near miss incident that took place on a drilling rig during cement line pressure testing. Six stands of 6 5/8-inch pipe fell from the finger row and landed on the starboard side deck of the derrick (pictures below). Weather conditions at the time of the incident were 40 knot winds, heavy rain, and 8-10-foot seas. There were no personnel on the rig floor at the time of the incident.



Frontal view of stands of 6 5/8-inch pipe dislodged from finger row.



Side view of dislodged stands of 6 5/8-inch pipe.

BSEE investigators determined the adverse weather conditions and the poor design of the casing fingerboard system to be main causes of the incident. The flip over beam locking bolt was not secure, and loosened during the adverse weather (see Figure 1 below). With new locking bolt arrangements with improved functionality, operators can adjust the width of the row by flip-over beams that consist of a hinged square hollow steel profile, or a steel plate. The adjustments can be made remotely or manually.

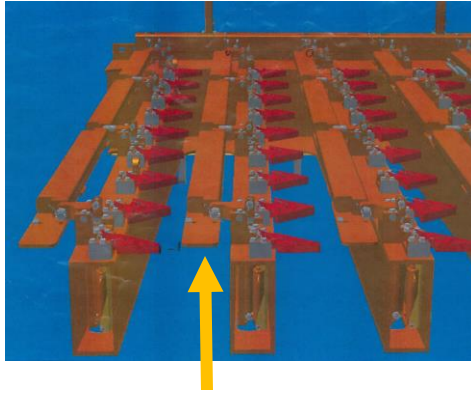


Figure 1 – Typical adjustable fingerboard with flip over locking bolt.

In October 2023, a manufacturer product improvement notification was distributed to inform offshore personnel about the availability of new locking bolt arrangements with improved functionality. The previous locking bolt design shown in Figure 2 underwent a redesign and enhancement to ensure improved and effective bolt locking. The enhanced locking bolt arrangement displayed in Figure 3 consists of a bolt, locking clip, and safety pin, which, when installed, prevents the bolt from unscrewing.

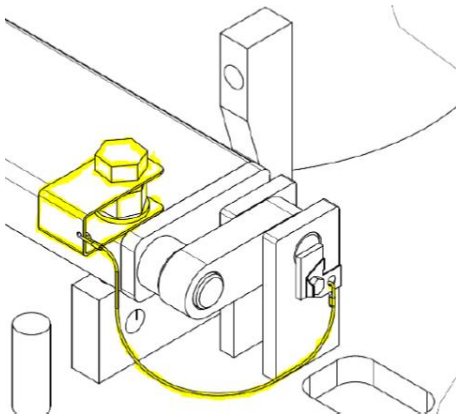


Figure 2 – Current locking bolt design.

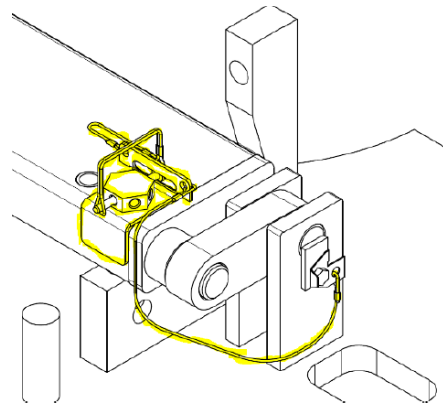


Figure 3 – Enhanced locking bolt design.

**BSEE recommends that operators and their contractors, where appropriate, consider doing the following:**

- Inspecting the condition of all casing fingerboard beam locking bolts.
- Reviewing fingerboard design and ensuring the best available locking mechanism is implemented. Contact vendor and/or manufacturer to confirm.
- Inspecting and checking the pressure applied by air cylinders to ensure proper pressure is being applied to the flip over beam.
- Ensuring all racked casing and pipe are properly secured and cannot fall out of the fingerboard during adverse weather.

- Subscribing to and reviewing all original equipment manufacturer product bulletins and alerts.
- Adhering to Red Zone<sup>1</sup> Management when required.
- Reviewing the following BSEE publications related to pipe handling and racking systems for additional information and recommendations:
  - [Safety Alert 324](#) – regarding four pipe racking system incidents
  - [Safety Bulletin 2](#) and [Panel Report 2017-001](#) – regarding a fatality following a fingerboard latch malfunction during pipe handling

– BSEE –

A **Safety Alert** is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding a potential safety issue. It also contains recommendations that could assist avoiding potential incidents on the Outer Continental Shelf.

**Category:** Pipe Handling, Personnel Safety, Lifting

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<sup>1</sup> A Red Zone is a designated high-risk area, where personnel must secure permission to enter. It is to minimize the impact of drops incidents or moving equipment on personnel.