

SAFETY ALERT



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Serious Incidents Associated with Pipe Racking Systems

Multiple safety incidents have occurred with rig automatic pipe racking systems. These incidents involved failures of fingerboard latches and guide head claws to open or close properly. The failures allowed unsecured pipe stands to become potentially lethal hazards.



- 6 May 2012: While spinning out during a trip, a failure of communication between the driller and assistant driller led the driller to unlatch and retract the block, unaware that the rollers on the guide head claws were not closed. This allowed the pipe stand to fall across the derrick.
- 20 Oct 2015: While tripping casing, a spotter verified the fingerboard latches were open and gave verbal instructions to the assistant driller to retract the landing string from the fingerboard. Due to a pressure leak in the pipe racking system, a fingerboard latch closed before the pipe was retracted, causing the pipe to bend until the lower guide head claw broke. The pipe then recoiled, fatally striking the spotter.
- 20 Mar 2016: While transferring stands between fingerboards, an assistant driller loaded a 4½-inch pipe into the 6 5/8-inch finger. The pipe failed to fully land causing the display to indicate that the slot was not populated by a stand. The assistant driller failed to notice the anomaly, and selected the same slot for the next stand. When the latches opened the first stand fell from the fingerboard.
- 9 Oct 2016: During a trip, drill pipe was racked and the fingerboard latches were visually confirmed to be closed. As the assistant driller retracted the racker arms, the upper guide head claws failed to release from the drill pipe causing the stand to pull against the upper

fingerboard latch, shearing it from the fingerboard. This caused the fingerboard latch to break, fall, and strike the drill floor in the red zone.

Therefore, BSEE recommends that operators perform a full inspection of their automatic pipe racking system before using the equipment on their next well. BSEE encourages the operators to:

- contact the manufacturers of their automatic pipe racking systems to check for product bulletins or safety alerts issued by the manufacturer to assure that their systems are being operated and maintained as required.
- review their training program and work instructions for their pipe racking system to assure that all rig floor personnel have received up to date instructions on how to operate this equipment safely and remain alert to possible mechanical malfunctions.

Operators should also consider the following options:

- Installing sensors on guide head claws with a type of interactive software that allows operators to verify claw position at a control panel and automatically prevents movement of the guide head when guide head claws are not in the correct position.
- Installing sensors on the fingerboard latches with a type of interactive software that allows operators to verify latch position at a control panel and automatically prevent movement of the guide head when fingerboard latches are not in the correct position.
- Installing low pressure sensors that provide notification of an out of range condition or that automatically prevents movement of the guide head when low pneumatic pressure is detected at the fingerboard latch pistons.
- Installing strategically placed cameras near the pipe racking system for operator verification of the connection from multiple angles.

A **Safety Alert** is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding an accident or near miss. It also contains recommendations that should help prevent the recurrence of such an incident on the Outer Continental Shelf.