



Safety Alert No. 459

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## Lack of training with Hydraulic Torque Wrench contributes to fatality aboard the drillship

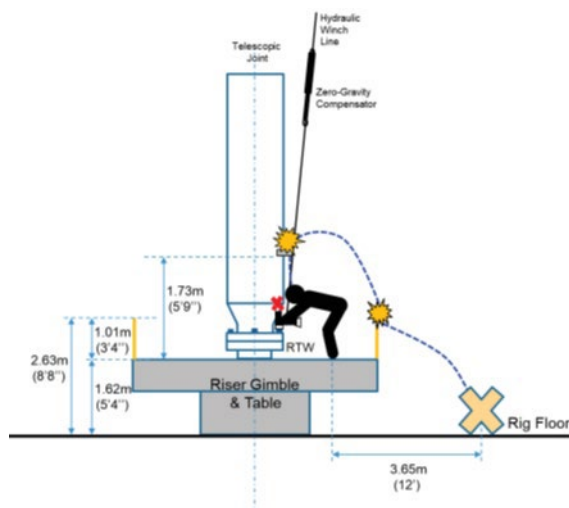


Figure 1. Floorhand Bolt Removal

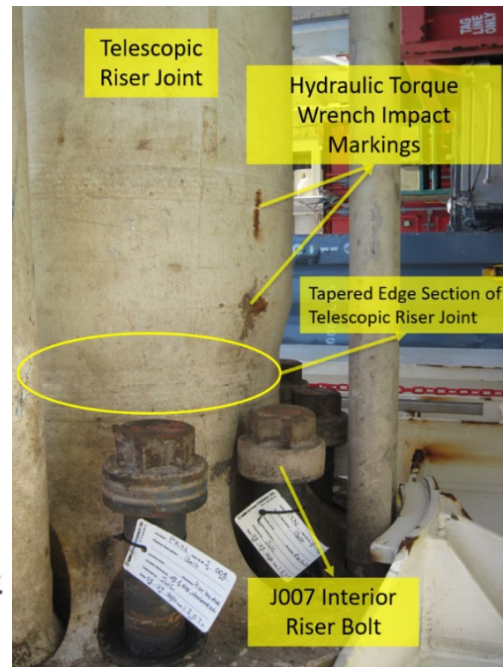


Figure 2. Riser Bolt and Telescopic Riser Joint

During well operations, a fatality occurred on a drillship in the Gulf of Mexico.

While unlatching the lower Marine Riser Package from the Blowout Preventor in preparation for ship relocation, a crewmember was lifted into the air after being struck by a Hydraulic Torque Wrench (HTW), hitting a riser clamp approximately six feet above the elevated work deck before falling to the rig floor. The crewmember was given first aid and transported to the drillship's hospital, where he was later pronounced deceased.

The incident investigation found that the rig crew was using a HTW to extract the bolts from a telescopic riser joint (TJ) flange. During the operation, the HTW socket became stuck between the bolt head and the tapered edge of the TJ. After failing to manually dislodge the HTW using physical exertion, the rig crew utilized a Hydraulic Utility Winch (HUW) to supply upward force and applied tension to free the HTW.

After applying the upward force, the HTW became unstuck under tension and shot upwards leading to the crewmember being struck.

Additional information is included in the [BSEE Panel Investigation Report](#).

**Contributing Factors included the following:**

- Lack of recognizing the stuck-HTW potential on the TJ beveled edge.
- Lack of comprehensive understanding of the Task Risk Assessments associated with the riser pull.
- Failure to effectively communicate all learnings from the previous riser pulls.
- Lack of formalized training for the utilization of the HTW and HUW.
- Adverse designs of the HTW and the HUW.
- Contributing Causes:
  - Failure to initiate Stop Work Authority.
  - Discrepancies with the Drill Floor Observer roles and responsibilities.

**Therefore, BSEE recommends that operators and contractors consider the following:**

- Ensure the Job Safety Analysis captures the limitations of the HTW when in use.
- Verify all employees understand the Job Safety Analysis and have been formally trained on operating both the HTW and HUW.
- Emphasize the initiation of Stop Work Authority if an imminent danger is observed.
- Expand the Drill Floor Observer's responsibilities to monitor all aspects of jobs occurring on the rig floor.
- Consider utilizing a HTW with a compatible design that corresponds with the beveled edge of the TJ.
- Explore options for employing a load indicator or a similar design mechanism onto the HUW package.
- Ensure pre-job reviews, and promote the sharing of feedback from previous experiences.

– 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:** Personnel Safety/Process Safety