



Safety Alert

From the International Association of Drilling Contractors

ALERT 09 – 06

DROPPED OBJECT – RIGGING SCREW JAW END

WHAT HAPPENED:

Two workers were assigned with the task of fitting rigging screws between the top drive torque tube track and the mast on both the driller's and off-driller's side. Prior to climbing, both workers donned their safety harnesses and attached a safety lanyard from one end of the rigging screw to the D ring at the front of their harness. This meant that, when climbing, the rigging screw would have been vertical with the tied off jaw end at the top and unsecured-end running down the right hand side of the person's body, ending around his thigh. When the second worker climbed the derrick ladder to a height of approximately 40 feet above the floor the unsecured jaw end at the bottom dislodged and fell to the ground (approx 60 feet). The jaw alone weighed 2.3 kg and landed 9 meters out from well-center on the driller's side in line with where the V door meets the catwalk and only 10 feet away from a tag-line operator assisting a crane lift. The floor was clear of all personnel prior to the job commencing except the Assistant Driller, who was supervising the job.

It is important that the terminology used throughout in relation to rigging screws / turnbuckles is understood. The picture to the right shows the two different types. The construction of the rigging screw is such that the thread is enclosed inside a tubular section of steel. The rigging screw is the one at the top and is the type which was carried up the derrick. The turnbuckle pictured at the bottom is the recommended type and has replaced the rigging screw type. Note the turnbuckle used on site is a jaw-jaw type



Improper rigging screw



Dropped Jaw End



Safety pin fitted to inside thread end

WHAT CAUSED IT:

- Both rigging screws and turnbuckles are normally referred to as “turnbuckles”. Original equipment manufacturer (OEM) drawings call for turnbuckles to be fitted.
- The design of the rigging screw is such makes it hard to determine how far the jaw threads are screwed in.
- Jaw ends of the rigging screws are not fitted with any secondary securing device (i.e. locking nut) to prevent them from backing out. Turnbuckles are fitted with locking nuts.
- Before sending the workers up the derrick the Assistant Driller screwed in both ends of the rigging screw a few turns. Given that one end screws “clockwise” and the other “counter-clockwise” it is possible that he may have actually backed one end out some turns instead of in. This would not be noticeable within the tubular section.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

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- Rigging screws were new and easy to screw in and out. Given the position of the rigging screw during climbing it is considered possible that with every ladder rung climbed the person's right thigh may have been knocking the bottom jaw causing it to turn and back out.
- Even though this was a non-routine job, no Permit-to-Work or Job Safety Analysis was in place for the task.
- The second person to climb said that he had performed this task before and knew they were not using the correct turnbuckle type. He did not stop the job or question his supervisor because quote "he is the expert and he must know" unquote.
- Failure to **STOP THE JOB**. The employee, who had done the job before and realized that the incorrect turnbuckle was being used, did not intervene.

CORRECTIVE ACTIONS: To address this incident, this company did the following:

- Onsite Supervisor is to reinforce "Stopping the Job" is a right and an expected practice.
- Rigging screws have been taken out of service and replaced with OEM recommended turnbuckles.
- The end of the turnbuckle jaw thread has been drilled to allow a safety pin to be fitted. This will act as an extra safety device in addition to already fitted locking nuts.
- Permit-to-Work and Job Safety Analysis awareness sessions were held with all onsite crews.

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