



Safety Alert

From the International Association of Drilling Contractors

ALERT 03 – 34

PREVENTING CROWN COLLISIONS

WHAT HAPPENED:

First Incident: The rig was doing a wiper trip. While working through a tight spot, the Driller lost count of the singles. The top layer of drilling line on the drum passed through under the crown saver device toggle. The blocks collided with the crown bumper block shaking the derrick upon impact. Crown saver device had not been tested on this shift.

Second Incident: During a trip out to change the bit, someone was trying to talk with the driller causing him to be distracted and the blocks hit the crown. The tool joints had been miscounted and even though the crown saver device activated, it did not stop the blocks in time to prevent collision. It was determined the crown saver device was set too high and trip speed was excessive. It had been tested but not with the drilling line.

Third Incident: While pulling out of the hole, the driller miscounted the tool joints.

The crown saver device toggle was contacted and engaged however due to speed, the blocks hit the crown. Sheared bolts and other hardware fell from crown bumper. The crown was undamaged but dropped objects posed a hazard to derrickman and crew.

Note damage to the crown beam.



WHAT CAUSED IT:

Common threads to all the above accidents: Due to distraction and/or loss of focus and concentration, the driller lost count of tool joints. Losing count resulted in the driller's failure to reduce traveling block speed in time. Additionally, the improperly set and/or untested crown saver device. In most of the above cases, damage was mitigated by a crown saver bumper block system. It is a common practice to envelop wooden blocks in wire mesh to prevent fragments from falling upon collision.

CORRECTIVE ACTIONS: To address this incident, this company took the following corrective actions to prevent recurrence:

1. The driller should stop and secure the blocks if someone needs to speak with him either by phone or in person. Distraction is the primary factor that causes crown collisions.
2. Operate blocks at a controllable speed. Avoid rushing.
3. As a backup to the driller's attention, everyone on the floor should count the tool joints coming through the rotary.
4. Test the crown saver device by slowly pulling into the crown saver device toggle with the top layer of line on the drum and do not use a "broom handle" to activate it. Ensure the derrickman is monitoring distance between blocks and crown and can signal the driller when the crown saver device is being tested or set.
5. The crown saver device should be checked with the drilling line as soon as practicable by each driller coming on tour, before each trip, and after each slip and cut. This check should be noted on the daily drilling report. (IADC APGR 3.17.N, API RP54 9.4.8)
6. For "double masts," remember a kelly length plus a single will be longer than a double. Extra care should be taken.
7. The crown saver device must also be reset and checked after moving it for longer stands during trips.
8. Ensure safety of the person adjusting the crown saver device by immobilizing drawworks, "chaining" brake, and taking necessary measures to prevent anyone from operating the drawworks while the crown saver device is being adjusted.
9. Be sure that the carriage mechanism that carries the crown saver device is secured against drift from vibration.

Note see IADC Safety Alerts 99-03, 00-21, and 02-22

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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