

Safety Alert

MMS

**U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region**

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Traveling Block Assembly Strikes Crown Block

On 4 August 2008, after pulling approximately 30 stands in high/high gear and with a 150,000 pound drill string weight, a barge rig's Traveling Block Assembly (TBA) struck the Crown Block. The Crown-O-Matic (COM) was activated, but due to the speed and momentum of the TBA the activation of the COM was not enough to stop the TBA from striking the Crown Block. All rig operations were shut down due to the damage (\$56,500) of the TBA and Crown Block, with no report of injury or pollution.

A MMS investigation into this accident indicated that the failure was caused by multiple management oversight issues and improper use of the rig's top drive gear usage as follows:

- There was a sense of urgency by all parties to pull out of the hole (POOH) and trip back in the hole due to an approaching tropical storm;
- A break down in communication between the Operator and Rig Contractor personnel led to the Driller not following the Rig Contractor's standard policy for this rig of not POOH in high/high gear;
- Due to the speed and momentum of the TBA while POOH, the COM was unable to prevent the TBA from striking the crown sills;
- A pre-job rig safety meeting conducted prior to POOH required pinging of the 3rd joint to alert the Driller of joint count and spacing as it came through the rotary table (the pinging procedure is conducted by the rig floor hands as they are counting each tool joint as it passes through the rotary table). Due to a break down in communication between the Driller and rig floor hands, no one person was designated to perform the pinging operation;
- Although the Driller had seven (7) years of drilling experience, three (3) months of that with the Rig Contractor, the Driller had never POOH in high/high gear on this rig.

Therefore, MMS recommends the following:

- Prior to deviating from any standard operating procedure, the Operator and Rig Contractor should conduct a hazard analysis to identify and evaluate potential hazards;

- Drilling Rigs originally installed with a Power Swivel/Kelly drilling system that have been upgraded to a Top Drive drilling system should ensure that the distance from the top of the TBA, once the COM is activated, is sufficient to allow for the TBA to stop before striking the Crown Block;
- Rig Contractors should research and consider installing a secondary Crown Block detection system;
- To encourage safety awareness, the distance from the top of the TBA, once the COM is activated, to the Crown Block should be posted in the Driller's shack;
- Driller's should be cautioned about pulling pipe in high/high gear;
- The Driller is ultimately responsible for counting tool joints, and should not rely solely on pinging of the pipe to be alerted that a certain joint has cleared the rotary. Should the Driller utilize the pinging method, the Driller should explain to the rig floor hands the importance and reason for counting tool joints and pinging as necessary. In addition, when one floor hand is designated to ping the pipe, a designee should always be present on the rig floor.

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