



# Safety Alert

From the International Association of Drilling Contractors

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ALERT 10 – 20

## DAMAGE TO STARBOARD FLARE BOOM

### WHAT HAPPENED:

Well testing operations were being conducted which required the installation of flare booms. Eighty-five foot flare booms were fitted to the pre-existing boom turntables of the port and starboard wing decks. The starboard flare boom was fitted first, followed by the port flare boom. Once the flare booms were installed additional heat suppression equipment was installed on both starboard and port flare booms.

The starboard flare boom began rotating slightly on its longitudinal axis and was re-tensioned, which rectified the problem. The starboard flare boom was left extended for approximately 64 hours before hydrocarbons were flared utilizing the starboard burner head for approximately 15 minutes.

After approximately three hours crew members heard a bang from the starboard side of the rig and went to investigate. As a crew member made his way along the starboard side of the rig he noticed that the starboard flare boom burner head was submerged in the water, while the base was still attached to the wing deck with the king post lying almost horizontal above the boom.

### WHAT CAUSED IT:

The original rig flaring installation was altered and relocated from the aft of the rig to the mid-ship wing decks. The relocation of the flare booms required structural engineering of the wing decks and engineering of the king posts.

A detailed incident investigation revealed that the failure of the starboard king post rear stay base plate was a result of two primary failure modes:

- Incorrect engineering.
- Incorrect welding specification.

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

Review the design criteria for attaching base plates to the deck structure with particular focus on the design principles (including welding) with regard to uniform deck loading and the potential for hard points to be created by under deck stiffening and the effect these can have on the deck loading.

Review the calculations and loading on connecting pins associated with king post structures.

Review the design criteria for attaching base plates to the deck structure with particular focus on the weld design in regards to the possible effects of Lamellar Cracking relative to the thickness of the deck plate and base plate.

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**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.**

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices

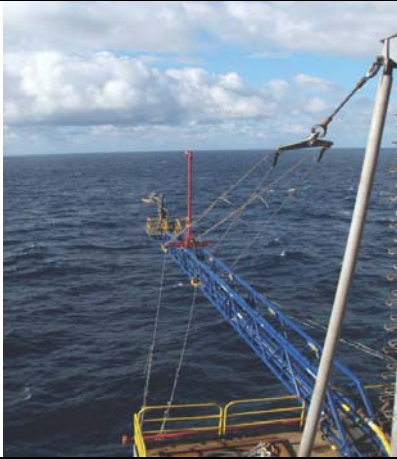
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Issued July 2010



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**Starboard Boom Prior to Failure**



**Starboard Boom After Failure**

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**Issued July 2010**