

IMPROVEMENTS TO LIFTING AND SLINGING PRACTICES BY OUR PETROLEUM DRILLING TEAM



In June 2003, a tragic incident occurred at our Rhourde Oulad Djemma (ROD) oil and gas development site in Algeria, resulting in one fatality and two injuries. The incident occurred during the assembly of an onshore drilling rig. A large section of the rig was being lifted when a lifting chain failed. The BHP Billiton team investigating the incident subsequently made a number of recommendations to improve lifting and slinging practices in our petroleum drilling operations and Company-wide.

The basic cause of the incident was the use of an underrated chain sling combined with incorrect slinging and lifting techniques. The crane hook was positioned off-centre, resulting in the load path being out of alignment. Combined with a hinged load, this prevented the sling from equalising on all chain legs when raised. Consequently, the entire load of 23.1 tonnes was placed on one chain leg that had a breaking load of 18.9 tonnes, resulting in failure of the chain.

Investigation team recommendations

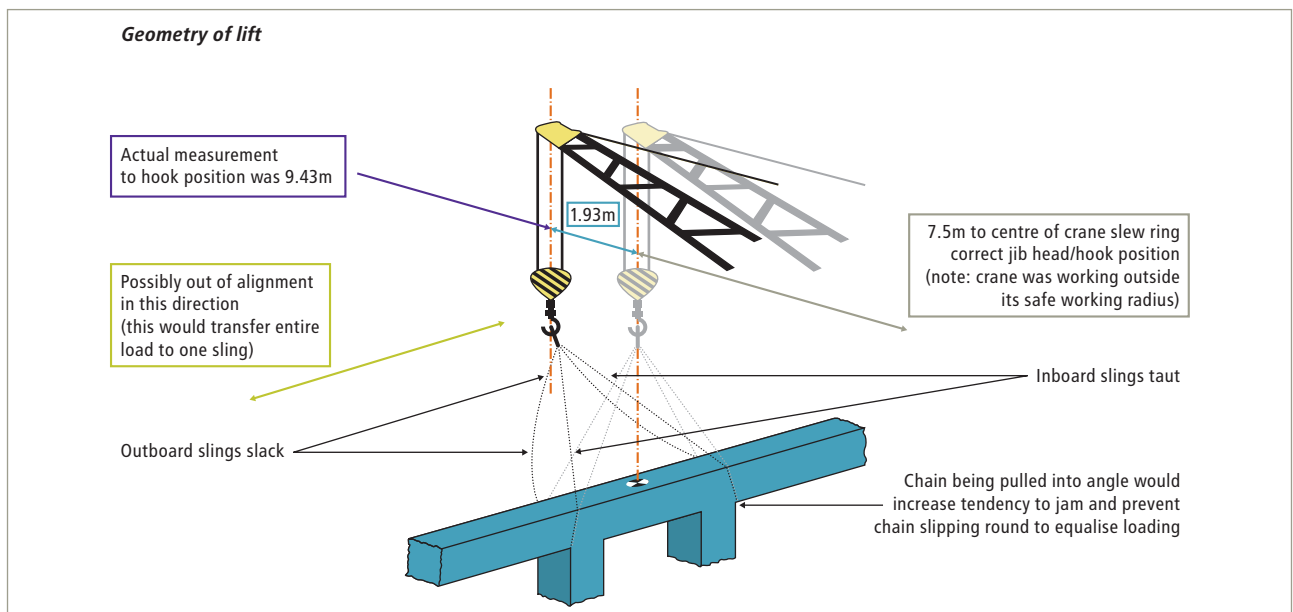
Following the investigation, the team made the following recommendations specific to the ROD Site, BHP Billiton Petroleum and the Company generally.

Improvements at the ROD site

As part of the improvements at the ROD site, the drilling contractor identified the following measures, which have improved the safety and efficiency of the site and removed a number of hazards. These initiatives are referred to as 'positive' and 'negative' lifting techniques.

Positive lifting:

- improves the time for lifting operations
- simplifies lifting pad eyes access for inspection
- increases safety during installation of lifting gear
- minimises risk of objects falling
- increases productivity and safety of drilling-associated operations.



► Sketch of out-of-alignment load path during lift, resulting in lifting chain failure

(Continued over)

IMPROVEMENTS TO LIFTING AND SLINGING PRACTICES continued

Negative lifting:

- increases the associated hazards and risks of working at heights
- increases the downtime for rig move operations
- increases the risk of personnel and objects falling
- increases the risk of failure of lifting gear material.

Improvements Petroleum-wide

The Petroleum drilling team appointed a specialist contractor, North Sea Lifting (NSL) to undertake a review of its lifting and slinging practices worldwide. NSL's scope of work was aimed at achieving improvements in lifting and slinging practices by drilling contractors, including:

- contracted drilling rig activities both onshore and offshore
- supply chain activities on land operations and on supply vessels in the offshore environment
- activities at the supply and logistics bases.

Examples of improvements identified by NSL included raising the awareness of supply-base crew through training in lifting and slinging practices.

Another area addressed concerned the competency and training of supply-boat crews. The measures taken here included:

- adoption of the United Kingdom Lifting Operations and Lifting Equipment Regulations (LOLER) as best practice for all lifting operations
- use of dedicated rigging and slinging crews on the supply boats
- training of deck crews in loading of cargo to improve safety of handling offshore
- development of a bridging document between our worldwide drilling team and the supply vessel operators
- adoption of the International Maritime Organisation (IMO) rules for the handling, storage and transportation of any dangerous goods offshore (IMO rules are seen as best practice worldwide and are accepted by all signatories to the UN Charter)
- adoption of the Australian requirements for containers throughout the world, which are also seen as best practice.

Improvements Company-wide

A new Fatal Risk Control Protocol for lifting activities and dropped objects has been developed for implementation throughout the Company.

These initiatives have already resulted in a number of positive comments from contractors and have heightened the awareness of the hazards and risks associated with lifting and slinging operations.

Pasquale Calcagne is Operations Manager with drilling contractor Saipem in Algeria. He says, 'Raising the standard of HSE in the work place has been a high priority with both Saipem and BHP Billiton. By working together, improvements have been achieved across many areas of the operation. The serious incident that occurred at the drill site reminded us all that we must always be improving. The improvement in the safety standards associated with lifting and slinging have also resulted in improvements in our operational performance, in particular a reduction in the time it now takes us to move a drilling rig. This is an excellent example of improvements in safety resulting in increased efficiency'.