

SAFETY ALERT



Uncontrolled release of Hydraulic Gooseneck Ring

ALERT 6-21

WHAT HAPPENED:

During pulling of the BOP, the gooseneck ring dropped from its storing position on the tension ring and landed on the flex joint. When the BOP entered the splash zone, it experienced less resistance from the air compared to the sea. This, combined with some rig movement, created a pendulum effect when the BOP was almost out of the splash zone, resulting in the riser colliding with the gooseneck ring, and the gooseneck ring dropping onto the flex joint. Immediately after the gooseneck ring dropped, the BOP was raised clear of the splash zone and secured in the under-hull guides. The dropped gooseneck ring affected the integrity of the storage dogs and storage dog locking mechanism and resulted in downtime.

CONTRIBUTING FACTORS:

The gooseneck ring experienced lateral motion from the riser when the BOP went through the splash zone.

Hydraulic pressure to the storage dogs and locking mechanism was not maintained during pulling of the BOP and riser. It is likely that the gooseneck ring would not have dropped if hydraulic pressure had been maintained. The locking ring would have been in the upper position and the blocks would have kept the storage dogs extended. However, a leakage or hose rupture in the hydraulic connection to the gooseneck ring during pulling of the BOP and riser could have led to the same outcome as this event.

The gooseneck locking ring had no mechanical lock or interlock mechanism to keep it in stored place on the tension ring during the BOP pull. The OEM had not identified that this could happen during FMECA (Failure Mode, Effects & Criticality Analysis).

Thorough review of equipment, equipment user manuals and revision of same has been undertaken. The OEM manual for the riser system was not of adequate quality. The manual mentions "that pressure has to be maintained" in 2 of 11 steps in the retrieval sequence. A reduction/release of pressure is not mentioned in the manual.

LESSONS LEARNED:

- OEM to find a permanent solution for securing the gooseneck locking ring, to review and update FMECA, and to review and update the equipment manual for the riser system.
- Design requirements for locking systems for overhead rings within the marine riser system currently do not exist so a task group is being set up to draft specification requirements.



Fig-1: Screenshot from CCTV. Prior to gooseneck ring drop. The riser and BOP can be seen swinging from side to side when BOP is in the splash zone



Fig-2: Screenshot from CCTV. During pulling of the BOP through the splash zone a gap between tension and gooseneck ring emerged, as indicated by yellow circle

A Safety Alert can consist of any type of health, safety & environment (HSE) notification or Near Miss/Near Hit alert. Proactive Alerts on jobs well done are also encouraged.



Fig-3: Photo taken after Gooseneck ring had dropped

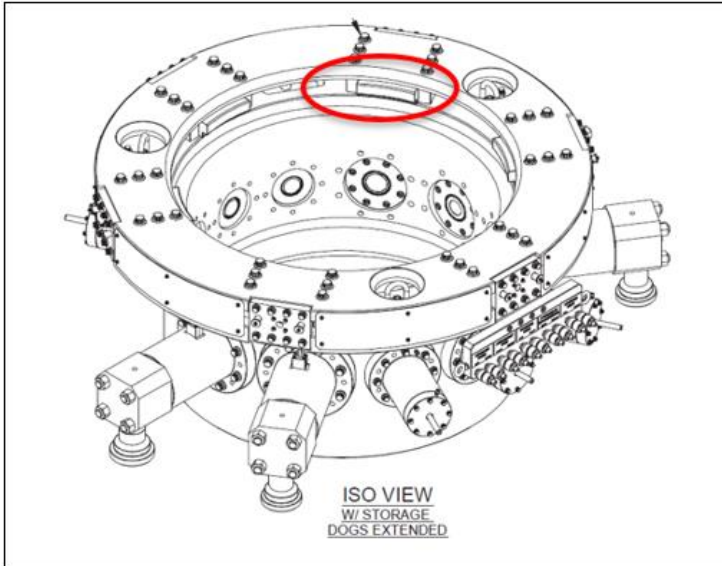


Fig-5: Gooseneck Ring. Red circle shows one of the six extendable storage dogs

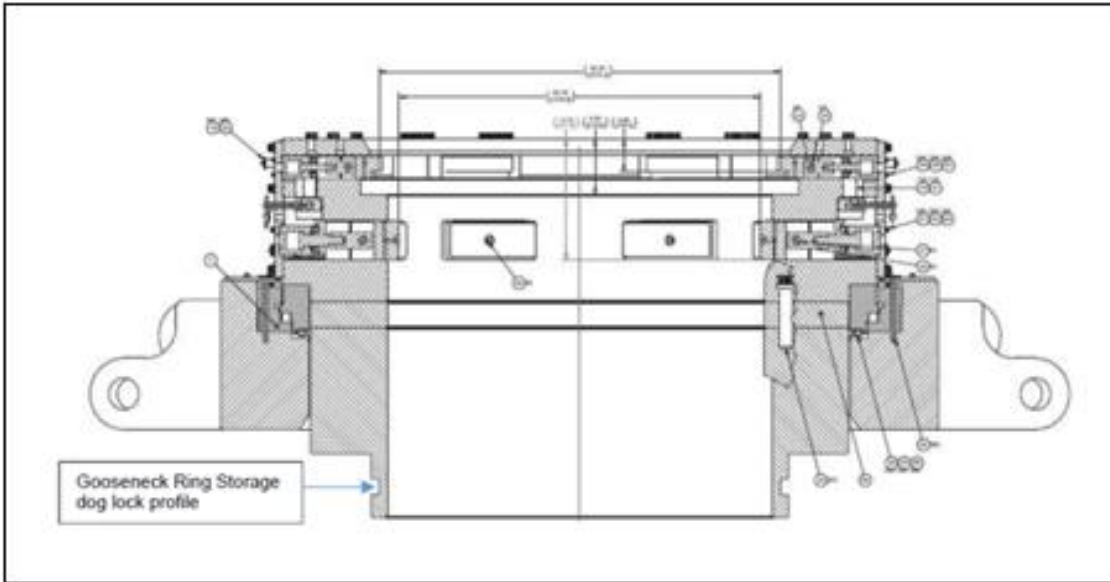


Fig-6: Tension Ring. The gooseneck ring is stored onto the tension ring by extending all storage dogs into a profile on the tension ring.

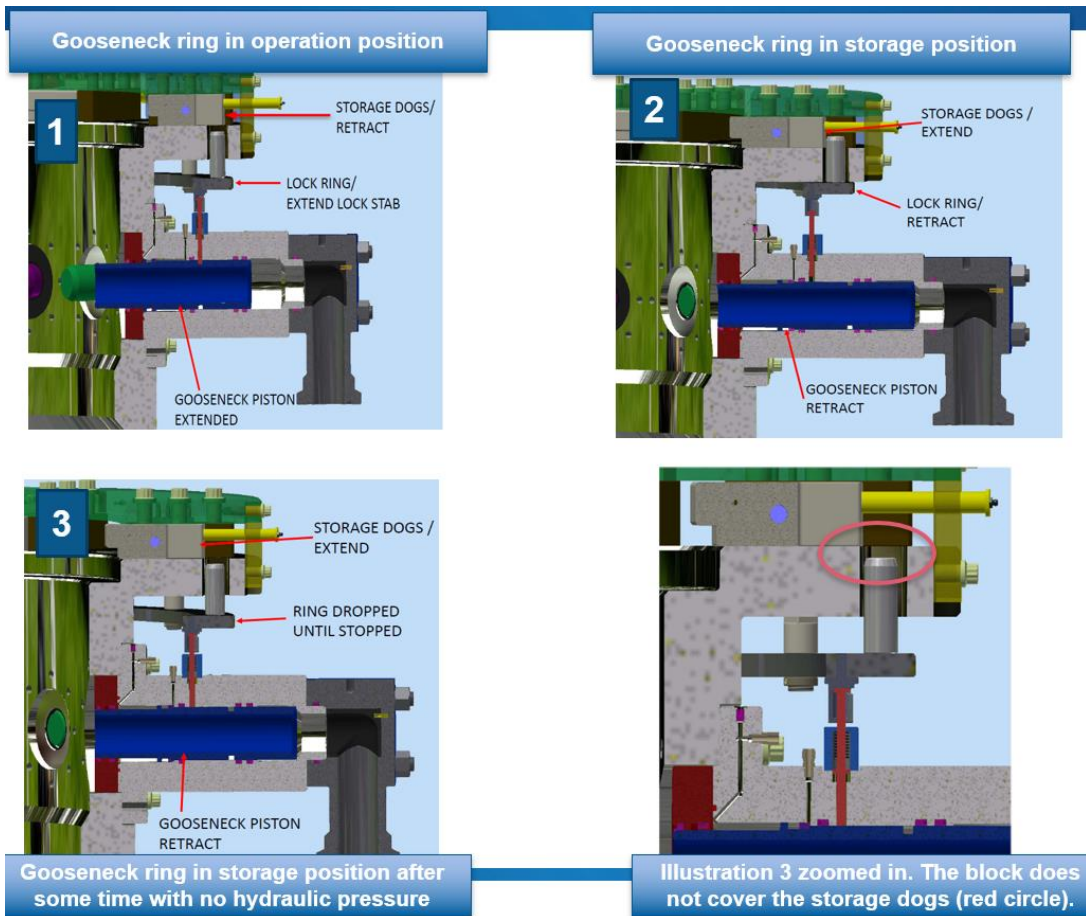


Fig-7: Gooseneck Ring operations