

Safety Alert

Number: 23-07

Published: 17/07/2023

Subject: Breakaway Coupling becomes a Dropped Object

What Happened / Narrative

Vessel personnel on a semi-submersible accommodation vessel noticed a breakaway coupling on the deck, at the time it was assumed this was work in progress. After discussing with the crew, they returned to the location of the coupling and upon further inspection noticed damage to the handrail and to the coupling itself, at which point they were able to identify that the coupling had fallen from above. No one witnessed the dropped object.

The site was barriered off to prevent anyone going near the potential drop zone as a further 3 breakaway couplings of the same design in place at height were identified.

The damage to the handrail and coupling was minor however had the coupling not fallen to the adjacent walkway it could have continued to drop further and caused considerable damage to the anchor winch hydraulic pipework.

A rope access team mobilised to the vessel to remove the three remaining breakaway couplings to make the site safe but also to allow the investigation team to review the condition of the other three couplings.

One of the other couplings had early signs of failure, with one of the breakaway studs found loose and able to be moved around freely. The other two breakaway studs were tight however the safety washers could move freely. According to the manufacturers maintenance recommendations if the safety washers have any movement at all, the breakaway studs are to be replaced as this indicated the breakaway studs had been stretched.

The three failed breakaway studs plus the three breakaway studs from the second coupling were sent to a specialist lab for a metallurgy report which concluded that failure of the breakaway studs to be by tensile overload fracture, stating that a high load or high load event must have occurred for the failure to occur. However, with the coupling falling at night, no other evidence was available to support this or identify an impact immediately prior to the failure.

Why Did it Happen / Cause

Upon investigation it was found that planned maintenance tasks were not aligned with OEM guidelines. The workorder in relation to the maintenance & inspection of the coupling required only a visual inspection every 2 months, however the OEM recommendation is to perform a visual inspection of the breakaway studs & physical inspection of the safety washer before each use. It was also found that the breakaway studs had been in place for longer than OEM recommendations, where the OEM recommends replacing the studs & service the coupling every 12 months.

Finally, the vessel was in lay-up and there was no reason for the couplings to be in place during layup. The couplings should have been removed at end of contract to remove any risk of a dropped object.

Corrective Actions Taken / Recommendations

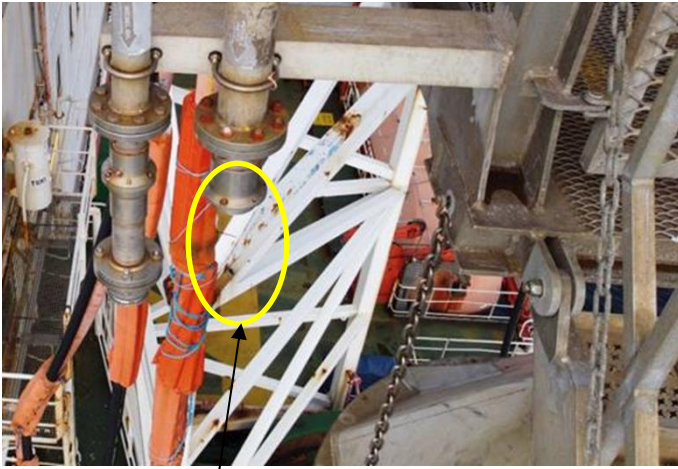
The following actions were identified and implemented by the vessel owner.

- Planned maintenance system was updated to reflect OEM requirements and recommendations.
- Review of Company procedures/scheduled jobs & update to accommodate:
 - Removal of hoses from couplings when not in use
 - Removal of couplings at end of contract
 - Use of drop net / secondary restraint to be reviewed.
- Management Of Change (MOC) / Change process reinforcement – any modifications to couplings to follow MOC

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Photographs / Supporting Information



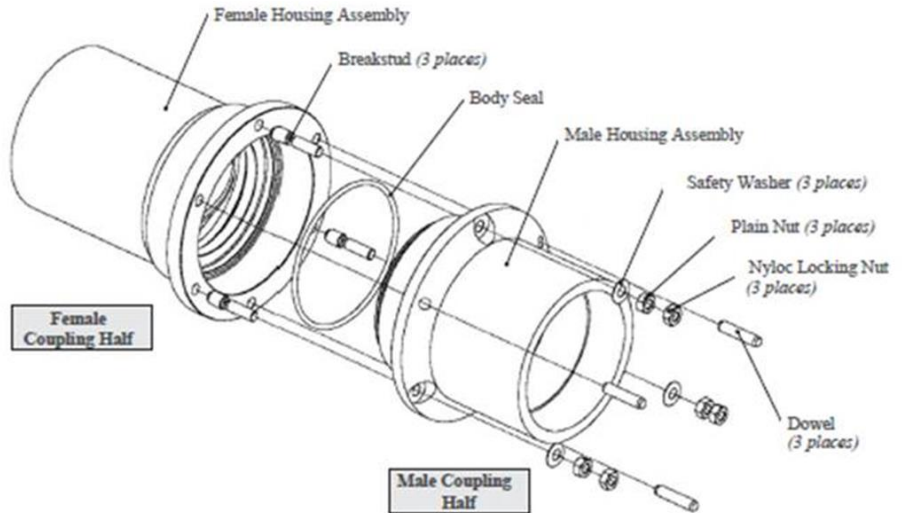
Original position of breakaway coupling



Damaged handrail

As found position of breakaway coupling

Exploded Assembly (Typical)



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