

Marine Safety Forum – Safety Flash 08-24

Issued: 4 June 2008

Subject: Catastrophic Failure of Vessel Main Crane Winch

Background

A serious material damage incident occurred 22 May 2008 onboard a vessel where the main hoist wire rope of the Main Crane parted whilst deployed Subsea.

Summary

The vessel crane was involved in operations where a 20t clump weight was suspended from the crane main hoist wire. The seabed depth of the field was in the region of 1600m. It is not known to what depth the crane was deployed at the time of failure though it is believed there could have been in excess of 1400m of wire rope deployed.

The crane in operation was a Hydralift Offshore Pedestal Crane Articulated Box Job Active Heave Compensated. Model OC3432KSCE-(40-150)-(30-11)(21)(10-32).

Immediate investigation identified the failure point of the wire rope to have been at the second sheave of the knuckle boom.

Subsequent inspection of the sheave has identified significant damage that would be consistent with the sheave failing to rotate during the operation of the crane. The resultant wear on the wire rope is potentially the cause of the rope failing.



Photograph shows the wear in the crane sheave that has potentially caused the wire rope to fail.

The crane was operating with the heave compensation engaged at the time of the failure.

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Conclusion

- A more detailed Internal Safety Notice will be issued once the full investigation findings have become available for release.
- The crane was installed in 2006 and has been in operation for no more than 2 years.

Actions

- All vessels that are operating cranes of the same model or similar should carry out as soon as possible an inspection of crane sheaves to identify any signs of wear that would indicate a potential failure of the sheaves to operate as designed. This inspection should be carried out by the vessel Chief Engineer or other competent person.
- These checks should be daily until the cause of the failure has been established by the crane manufacturer. Any defect found should be reported to the crane manufacturers.
- All vessels with cranes that regularly operate Subsea should check sheave integrity and visibly check rotation of all sheaves and should be aware of how quickly a failure of this nature could occur particularly when operating with heave compensated systems.