

Catastrophic failure of vessel main crane wire

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A Member has reported a serious incident onboard a vessel where the main hoist wire rope of the main crane parted whilst deployed subsea.

What happened?

The vessel crane was involved in operations in which a 20 tonne clump weight was suspended from the crane main hoist wire. The water depth at the location was approximately 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 was a pedestal crane articulated box jib with active heave compensation and had been in operation for approximately two years.

The investigation revealed the following:

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, and the resultant wear on the wire rope is potentially the cause of the rope failing.

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

Recommendations

It is recommended that members operating vessel's with cranes of this type carry out regular inspection of crane sheaves to identify any signs of wear that would indicate a potential failure of the sheaves to operate as designed. Members operating cranes with active heave compensation are recommended to check sheave integrity and visibly check rotation of all sheaves.



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

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