

ROV main lift umbilical failure

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A member has reported an incident in which an ROV main lift umbilical parted causing the ROV to drop to the seabed (1360m water depth).

What happened?

The incident occurred while recovering a ROV to deck. With the use of the vessel crane and the assistance of a second ROV, the fallen ROV was recovered to deck and inspected; there was no damage. There were no injuries.

Our member's investigation noted the following:

- The main lift umbilical had recently undergone third-party destructive testing and load testing and had been certified as fit for purpose.
- The scheduled maintenance and inspection was found to be in accordance with the manufacturer's original requirements.
- An umbilical lubrication system was in place and operational.
- The current lubrication system had been installed a year earlier as a systems upgrade to the originally fitted system.
- At the time of the incident, the vessel was located in a safe recovery zone away from subsea assets.
- During inspection, internal strands of the main lift umbilical were found to have damage consistent with previous water ingress (rust), and there was no evidence of lubricant present in the inner core.

Our member determined that the cause of the failure was internal (hidden) damage of the main umbilical, following from lack of lubricant penetration.

The following lessons were learnt:

- All rope parts should be thoroughly examined and tested to determine if wire damage has occurred in locations that are not visually accessible.
- Conducting ROV launch and recovery operations clear of subsea assets was a mitigation; this prevented further equipment damage that could potentially have occurred.

Recommendations and corrective action:

- Ensure that close visual inspections are carried out on each strand of all layers of the umbilical during the annual cut back and re-termination.
- Ensure the condition of the strands was reported on the umbilical destruction test report (Umbilical destruction test procedures now reflect this).
- Recommend further research into the use of UT scanning and cleaning equipment on ROV umbilicals after 10 years of service.

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