

Don't put your finger in the wrong place: Failure to isolate equipment causes serious finger injury

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While carrying out work to fix the hydraulic arm of an ROV manipulator, the person involved was trying to adjust the position of the piston to align holes to receive shear pin.

What happened?

The person used their finger to confirm alignment of the Clevis and Hydraulic shaft holes and when the piston moved, it trapped their left index finger, slicing off approximately 1 cm of their finger.

IOGP Life Saving Rules:



Bypassing safety controls



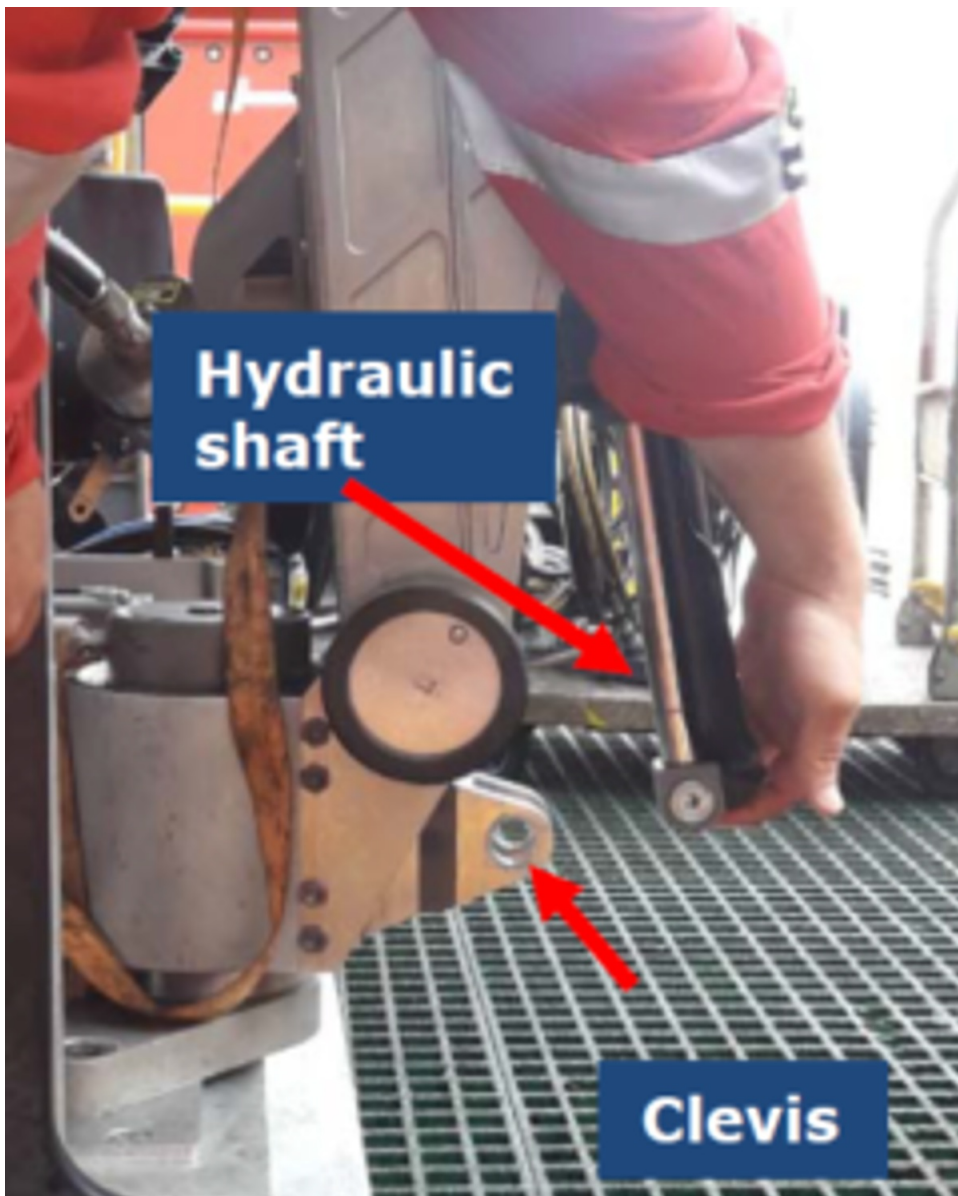
Energy isolation



Line of fire



Work authorisation



What went wrong? What were the causes?

- The task was performed when the system was live:
 - before starting, the team had secured the arm to the ROV using a cargo strap. However, the shoulder function had been enabled on the Master Arm to allow alignment of the clevis with the hydraulic shaft. The hydraulics should have been completely isolated, and alignment of holes completed manually.
- The injured person used his finger to check alignment:
 - he gave the instruction to ROV supervisor to retract/extend the shaft in order for him to align the shaft and the clevis. He failed to put his hand in a safe place before giving the instruction.
- Procedures were not followed, and the task risk assessment (TRA) was not detailed enough:
 - the technical manual was not reviewed before starting work, nor was any manual or procedure referred to when doing the TRA. The TRA lacked detail – there was no reference to isolation.

What actions were taken? What lessons were learned?

- Isolation/lock-out/tag-out of system hydraulics related to work activity should be undertaken before starting work.
- **READ THE MANUAL** – technical manuals are written to provide the necessary guidance and safety processes to be used to avoid injury and ensure equipment is repaired/maintained correctly. They should be referred to and followed.
- TRA should be relevant, suitable and sufficient to the task in hand – in this case, the maintenance and testing of the equipment. It should capture the potential risks related to the inadvertent movement or catastrophic failure of hydraulic equipment.
- When the equipment is being tested ensure that all personnel are at a safe distance from the testing area such that they are not exposed to harm from the sudden movement of any hydraulic attachments, release of pressure from whip hoses, pressurised oil jets or the catastrophic failure of the equipment.

according to IOGP's Life Saving Rules.

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