

IMCA Safety Flashes summarise key safety matters and incidents, allowing lessons to be more easily learnt for the benefit of all. The effectiveness of the IMCA Safety Flash system depends on members sharing information and so avoiding repeat incidents. Please consider adding safetyreports@imca-int.com to your internal distribution list for safety alerts or manually submitting information on incidents you consider may be relevant. All information is anonymised or sanitised, as appropriate.

1 Crew member in small boat slipped and dislocated shoulder

What happened

A person was kneeling down in a workboat and was injured when the boat moved suddenly as a result of the sea state. The boat (a small workboat used in diving operations) pitched forward and hit a Catenary Anchor Leg Mooring Buoy. The injured person automatically braced himself by placing a hand on the internal structure of the boat, however the impact on his arm resulted in him getting a dislocated shoulder.

What went right

- Weather conditions were determined as favourable for operations and dive punt operations were being undertaken in accordance with company requirements;
- The injured person had re-positioned himself into the lower section of the vessel to minimise the risk of falling overboard whilst going about his work;
- After the incident, emergency response procedures were implemented, and the injured crew person was subsequently transferred to the main vessel for medical treatment.



What went wrong

The crew member, whilst he had earlier used some situational awareness to safely re-position himself, had not foreseen the new risks of sudden movement of the boat associated with where he was now working. Work was now being carried out in a location not covered in the risk assessment. He thought he would be safer, but he wasn't.

What was the cause

- Immediate cause was an unexpected movement of the working environment causing human instinctual behaviour leading to injury;
- Our member found the root causes to be:
 - Risk assessments did not include operational activities being performed in the boat;
 - The requirement for additional equipment being supplied to operational areas and how this was to be undertaken was not adequately addressed within project planning procedures.

Lessons

- Plan and consider human instinctual behaviour within risk assessments.

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- An example would be when you call someone's name when they're in a space with low headroom, and they automatically look up – and bang their head;
- Look closely at the adequacy of toolbox talks and prestart meetings for small boat work.

Members may wish to refer to

- [LTI: step into open deck hatch causes fall](#)
- [Lost time injury – person slipped on the stairs and broke his arm](#)

2 Small boat crew exposed to FPSO process water discharge (fumes and aerosol)

What happened?

During diving operations on a live FPSO, the deck crew on the Light Dive Craft (LDC) and Fast Rescue Craft (FRC) were exposed to fumes and aerosols from the FPSO process water discharge. The exposed personnel showed symptoms i.e., nausea, headache, a metallic taste in the mouth, and sore throat.

During the operation, environmental conditions changed, which meant that natural dispersal of fumes and aerosols did not occur as anticipated where the dive craft was moored. Also there was an increased volume of discharge, due to process shifting activities.

When the situation was realised the operation was immediately stopped, the craft was brought back to the mother vessel and the personnel involved were medically examined by the hyperbaric nurse.

What went right?

- Stop the job - When the situation was realised the operation was immediately suspended, and actions taken;
- Onsite emergency response actions - Exposed personnel were medically examined, and investigation of the event and the content of the discharged process water was immediately started;
- Shore-side support response actions – shoreside response teams from all involved parties worked in cooperation to give the best support;
- Communication between client, contractor and involved personnel (both on site and onshore);
- Long term follow-up of exposed personnel including correct reporting to authorities.

What went wrong

- The prevailing risk assessment was based on previous experience at the same work site, which was that the process discharge had an unpleasant smell, contained a small amount of oil and that known chemicals may be added;
- There was inefficient communication between the installation and the dive crew and within the dive crew. On this particular occasion it was concluded afterwards that the discharge, due to process shifting activities, had an increased volume. This was not communicated to the dive crew – they were unaware of this;
- The deck crew on the LDC/FRC did not discuss their observations and symptoms between themselves which led to a delay in notification and consequently a longer exposure time;
- The environmental conditions were shifting, it was a change in wind direction that caused a lee along the FPSO hull resulting in the blow off of fumes and aerosols not dispersing. This was not noted and consequently did not result in any change in setup.

Lessons and actions

- Need for improved communication between stakeholders at the worksite, particularly between crews and shifts;
 - Ensure everyone involved in an operation is properly briefed at a toolbox talk;



- Ensure good and thorough communication between vessels working together on an operation.
- Develop a deeper understanding of the risks involved with process water discharge;
 - What are the chemicals involved;
 - How volumes and quantities may change etc.;
 - Ensure this is included in risk assessment and discussed in toolbox talks;
- Watch out for changing environmental conditions or weather conditions that can affect operations;
- Consider a physical barrier to route the produced water away from the dive location, either via the ballast water management system or by another route;
- Perform familiarization meetings for all involved key personnel. Familiarization meetings should be held before the operations, and should be repeated regularly to ensure good handover with new personnel offshore following crew changes;
- Ensure that appropriate information is communicated and understood by both shifts on the crew, and that Hazid/Hazop reports are available in good time offshore to allow for familiarization, safe planning and execution.

Members may wish to refer to:

- [Chemical reaction: person injured during grouting operations](#)
- [Inhalation of toxic fumes during hot work](#)

3 LTI – crew person cracked shin bone

What happened

An engineer suffered a broken shin when he slipped taking a shortcut into the engine room. He went into the engine room down some stairs, in order to access a control panel, and found that access to the control panel was blocked by a plastic bag installed to collect paint chippings from maintenance work on the stairs. He took an alternative route behind the staircase, hit the stairs with his right shoulder, and lost his balance. He fell in such a way as to hit his ankle on a valve on the floor of the engine room, causing a cracked tibia (shin bone).

What went wrong

- No-one stopped to think:
 - Maintenance work created new, additional hazards – the crew conducting the maintenance work had blocked the walkway;
 - There were no barriers or controls in place to stop anyone from using the stairs being maintained, nor was the available alternative route highlighted;
 - The crew doing the maintenance work had not communicated what they were doing to the engineers;
 - The engineer took an unnecessary shortcut when there was an easily accessible walkway to the control panel.
- None of this was identified in any risk assessment or pre-job toolbox talk.

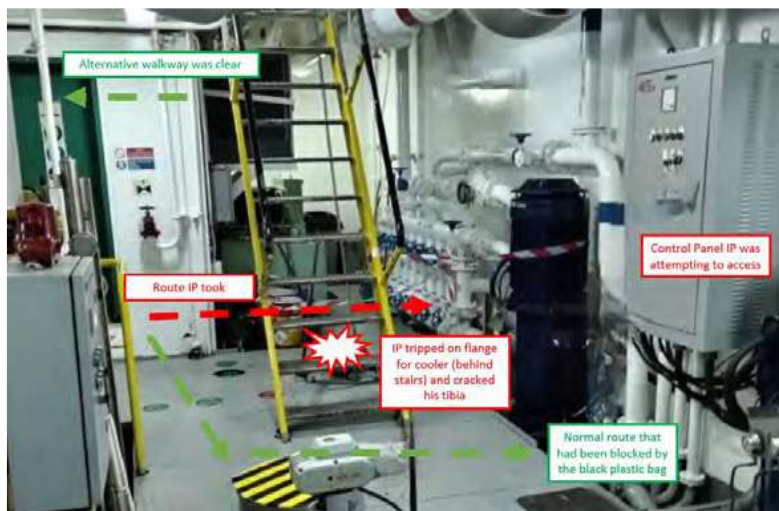
Our member noted the following learnings

- Understand the need for thorough risk assessment that identifies all potential hazard including that which might arise from maintenance work;
- Ensure effective communication is in place between departments, shifts, crews etc especially with regard to blocked access, maintenance, and any simultaneous operations going on;
- Ensure proper signage and physical barriers are in place where required during maintenance work;

Applicable
Life Saving
Rule(s)



- Take FIVE...STOP!! Think and look again. Remember you have a right and a duty to STOP THE JOB if it is unsafe.



Members may wish to refer to

- Lost time injury (LTI): fractured elbow – fall injury
- LTI: step into open deck hatch causes fall

4 Person slipped on stairway while wearing shoe covers

What happened

A person was making their way down a vessel staircase, wearing coveralls and safety boots with company approved shoe covers on. While descending the stairs, the person slipped down approximately four steps on the staircase. The person had a firm grip hand on the handrail at the time of the incident and thereby, further slippage was prevented. The strain of preventing a worse fall caused muscular pain on the left side of the person’s torso and their left shoulder.

What went wrong

- The grip on the injured person’s cloth shoe covers had worn away over time;
- The person had not removed the cloth shoe covers upon exiting the accommodation area.

Lessons

- Wearing shoe covers on stairs presents a potential slip hazard, and they should be removed upon exiting areas (such as the accommodation) where they are required;

- Inspect shoe covers before use to check the grip - and replace as necessary.



Safety shoe with reusable cloth shoe cover



Looking up stairs



Looking down stairs

Members may wish to refer to:

- Recent slips, trips and falls involving stairs
- Trip and fall down hotel stairs causing serious wrist injury
- Badly sprained ankle resulting in LTI

5 BSEE: Lack of training with hydraulic torque wrench contributes to fatality

What happened

The United States Bureau of Safety and Environmental Enforcement (BSEE) has published [Safety Alert 459](#) relating to a fatality which occurred on a drillship in the Gulf of Mexico. While unlatching the lower Marine Riser Package from the Blowout Preventor in preparation for ship relocation, a crew member was lifted into the air after being struck by a hydraulic torque wrench (HTW), hitting a riser clamp approximately six feet above the elevated work deck before falling to the rig floor. The crewmember was given first aid and transported to the drillship's hospital, where he was later pronounced deceased.

The incident investigation found that the rig crew was using a hydraulic torque wrench to extract the bolts from a telescopic riser joint (TJ) flange. During the operation, the HTW T socket became stuck between the bolt head and the tapered edge of the TJ. After failing to manually dislodge the HTW using physical exertion, the rig crew utilized a hydraulic utility wrench (HUW) to supply upward force and applied tension to free the tool. After applying the upward force, the torque wrench became unstuck under tension and shot upwards leading to the crewmember being struck.

What went wrong

- The risk that the hydraulic torque wrench would get stuck on the TJ bevelled edge, was not recognised;
- There was no comprehensive understanding of the Task Risk Assessments associated with the riser pull.
- There was a failure to effectively communicate all learnings from the previous riser pulls;
- There was a lack of formalized training for the use of these hydraulic tools;
- The design of both tools was not optimal and may have contributed to the incident;
- Contributing Causes:
 - Failure to initiate Stop Work Authority;
 - Discrepancies in roles and responsibilities for the Drill Floor Observer (a supervisor).

Applicable Life Saving Rule(s)

Energy Isolation

Line of Fire

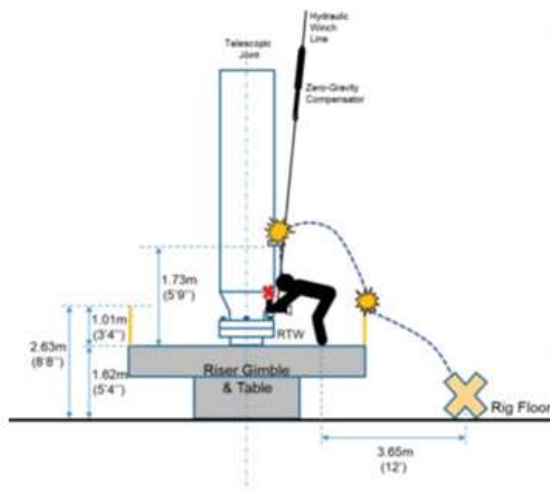


Figure 1. Floorhand Bolt Removal

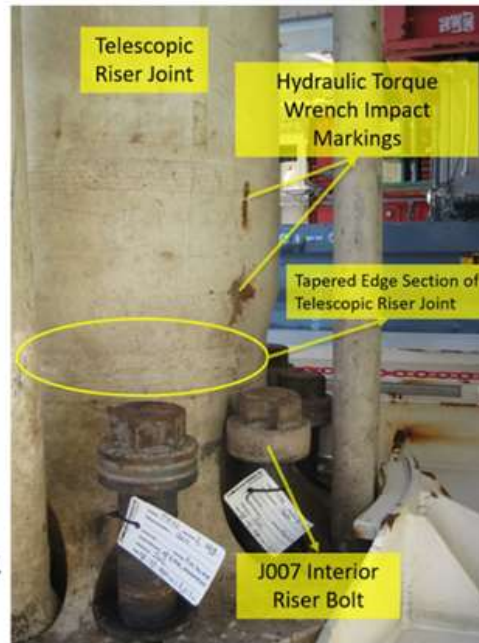


Figure 2. Riser Bolt and Telescopic Riser Joint

Actions proposed

- Ensure Job Safety Analysis captures the *limitations* of the tools in use;
- Verify that all employees understand the Job Safety Analysis and have been formally trained on operating hydraulic or other power-driven tools;
- Emphasize the initiation of Stop Work Authority if an imminent danger is observed;
- Ensure supervisors and managers understand their responsibilities to monitor all aspects of jobs occurring in the areas over which they have control;
- Use tools that are compatible with, and specifically designed for use in, the particular work environment;
- Could a load indicator, or a similar design mechanism, be of use on such hydraulic wrench tools?

Members may wish to refer to:

- [Near Miss: Personnel nearly struck by rotating chain attached to flexible pipe \[Key people involved were inexperienced in this specific activity and were not familiar with the task in hand\]](#)
- [BSEE – “Green hats” – training and supervision of short service employees](#)
- [Potential for diver injury operating a hand-held torque wrench](#)