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 Diver in the bell hit by falling object

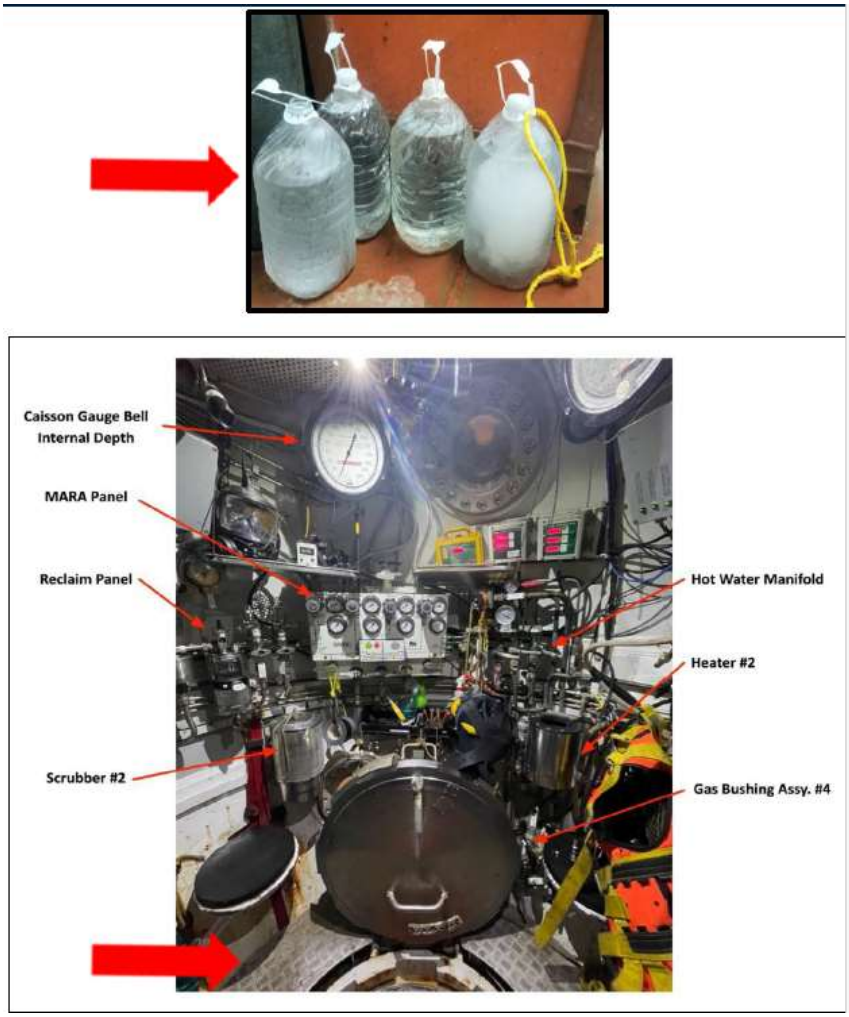
Applicable Life Saving Rule(s)

Line of Fire

What happened?

A diver in the diving bell was hit and slightly injured by a water bottle containing a gallon of water (4.5kg). Diver #1 left the bell and was handing over to the next bellman. In the bell the remaining divers were organizing their gear before departing the bell. They were moving a partially frozen one gallon water bottles when a handle on a water bottle broke and the bottle fell into the transfer lock striking the diver #1 on left side of his head and then onto his shoulder.

The diver received medical attention; he had an abrasion on his head and a red mark on his shoulder. He was able to continue the Sat run reporting only minor soreness over two days, eventually back to normal.



What went wrong?

The handle of the frozen water bottle broke and fell on the diver standing at the bottom of the transfer lock.

What was the cause?

The bell temperature was elevated due to shallow water diving and the bell being well insulated. Divers were bringing in frozen bottles of water to help lower the internal temperature.

Lessons learned and action:

Our member noted the following:

- Deviation from procedure, no matter how minimal has the potential to trigger an event leading to accident;
- No risk assessment was completed for this change in operation;
- A "Hazard Hunt" was initiated - **focusing on routine tasks**;
- Arrangements were started for installing a diving bell chiller to regulate higher temperatures;
- Updated a Management of Change process and risk assessment for continued use of frozen bottles as a short-term solution, focusing specifically on proper securement and material handling to prevent dropped objects.

Members may wish to refer to the following, all relating to issues inside the bell:

- Failure of dive chamber overhead door centre pin
- Finger injury: diver caught finger in bell door
- Bell re-claim failure resulting in minor injury

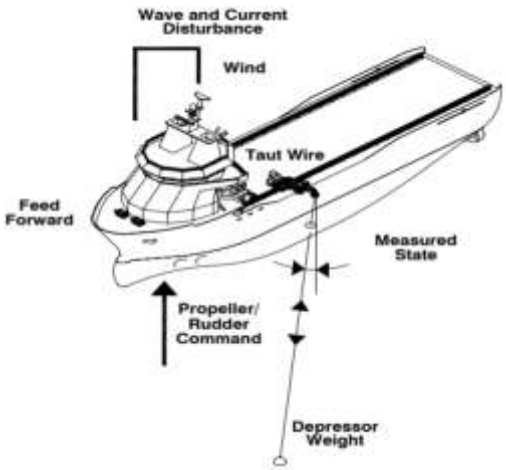
2 Divers lifted off seabed by Clump Weight

What happened?

Applicable Life Saving Rule(s)

Safe Mechanical Lifting

Whilst the Diving Support Vessel was conducting subsea diving operations, the bridge team recovered the taught wire pulling the divers from the seabed to 18m above the diver's maximum excursion depth. This rapid change in depth had the potential to cause pressure induced injuries or injuries with direct contact with the taut wire clump weight. Thankfully, in this instance, both divers reported well post-transfer and following subsequent tests.



Drawing on the left shows basic set up of a taut wire system during diving operations.

Picture on the right taken from divers hat camera as he was freeing his umbilical from taut wire and clump weight.

What went wrong

- Open comms system was installed but silenced and set to 'closed circuit' – delaying the bridge team's reaction to the lifting of the divers;
- The bridge team made the incorrect assumption that Dive Supervisor was aware of the taut wire recovery – it was recovered without final repeat back and approval by Dive Supervisor.
- It had become customary practice to recover taut wires when divers were 'seen' as being in a 'Position of Safety' and not with verbal confirmation from the divers that this was so;
- There was a gap in the management system, taut wire 'weight' lifting operations were not covered by a lift plan.

Lessons and actions

- Internal company diving information notice issued, including requirement that "divers return under bell and clear umbilicals prior to any deployment or recovery of taut wires";
- Lift plans for taut wire deployment / recovery now include step to 'confirm divers are in a place of safety' before start of operations;.
- Ensure sufficient diver awareness on umbilical management to prevent entanglement;
- Operational communications instruction issued to all company vessels involved in diving operations,
  - Ensure communication is in clear and concise language to avoid any potential for misinterpretation;
  - Ensure commands and/or instructions are repeated back prior to carrying them out, to verify understanding;
  - If communication is not clear or there are any doubts on the command issued, an ALL STOP should be called.

Members may wish to refer to

- Near miss: diver's umbilical snagged by work basket during recovery to surface
- Mattress beam landed very close to divers

3 Leak in hot water system for saturation divers

What happened

During saturation diving operations between bell runs it was noted that Divers Hot Water Unit #2 had a water leak. The leak was investigated and located, but was found to be in a place with very poor access. There was a small hole in a pipe, which on investigation was found to be a bigger hole under surface corrosion.

The Dive Supervisors and Dive Superintendent were immediately informed about the issue, and diving was suspended due to there being no backup for the remaining Hot Water #1 Unit.

What went wrong

- Due to very limited access, it was not possible to inspect the tank outlet of the 4" closed circuit pipework;
- External corrosion had over the years completely corroded the 4mm pipe in a very limited area.

What was the cause

- The direct cause: corrosion over many years;
- The root cause: The inaccessible location [for visual inspection] of the pipe.

The hole at 6 o'clock in the water intake.

Sleeve welded at the area of corrosion.

Location of the hole, inaccessible for visual inspection. Picture shows the back part of the unit mounted against a wall.

What action to take?

- Sleeve welded on the leaky area;
- Hot Water Unit #1 was inspected and no defects found;
- Consider wall thickness measurements of old pipes.

Members may wish to refer to the following:

- Hot water fitting failure results in 3m loss of depth in diving bell
- Dropped object near miss – crane boom bumper stop falls off *[d.t. corrosion in an inaccessible place]*

4 Chain hoist paid out unsupervised near running main engine

What happened?

Applicable Life Saving Rule(s)

Safe Mechanical Lifting

An electric chain hoist on the beam above one of the main engines in a vessel, was left unattended after use. The chain hook paid out and coiled the chain onto the running main engine close to the generator drive shaft. The incident occurred when the chain hoist was being used to lower spare parts required for maintenance in the engine room. Two lifts took place above the running main engine. After their completion, the chain block was lifted into its highest position.

Later on, during routine rounds, the motorman observed the hoist's chain with hook to have "paid out" fully and created a dangerous condition near to main engine no.3. The chain was made safe and then removed from service for inspection.

What went wrong

- The push button for “pay-out” on the pendant controller for the electric winch, was found to be defective, resulting in hoist being given a continuous payout command;
- The operator of the hoist was aware that the chain continued to pay out after push button was released in the first instance, but after repeated operations of the button assumed the intermittently ‘sticky’ button had been freed and that the equipment was safe for use;
- The emergency stop button was not engaged after use which enabled the faulty button to allow the hoist to continue uncontrolled pay out;
- The hoist, although paid in, was not stowed and secured as per the routine working practice onboard;

As a result of the continuous payout operation, the motor was found to be burnt out and will require to be replaced.

Actions

- Ensure crew are familiar with original equipment manufacturer (OEM) operator manuals for all hoist equipment before use;
- Review control function of hoists and where no designated isolation switch is in place, determine a safe, and practical means of safe isolation.
- Ensure visual and function tests for lifting equipment are conducted with defects/ damage corrected before use.
- Review whether hoists can be safely used parallel to or in close proximity to running machinery.
- Review frequency of planned maintenance for electrically driven, operated and controlled lifting hoists, to minimize risk of control functions degrading due to infrequent usage, and to ensure an annual function test is completed.

Members may wish to refer to:

- Chain hoist failure resulting in a serious near miss
- Incorrect operations result in failure of hoist
- High potential incident: gantry hoist failure

5 MAIB: Workboat collision with wind turbine platform

The UK Marine Accident Investigation Branch has published Safety Digest 2/2023, consisting of lessons from recent Marine Accident Reports. IMCA has reviewed the report and passes on to members, as of interest, some of the incidents in the MAIB report. This is one of them.

What happened

A workboat collided with a turbine platform in an offshore wind farm, causing injuries to one of the crew and minor damage to the workboat itself. The incident happened during transfer of two teams to carry out maintenance tasks on two different wind turbines. The master set minimum power ahead and steamed on a course between the wind turbines, intending to use the time to complete some administrative paperwork. He was working at the aft-facing chart table on the bridge, but had become engrossed in paperwork and lost track of time, when the boat, having gone off-course, collided with one of the towers.

The workboat took the brunt of the impact on its off-centre protected bow section. The crewman was thrown against a shelf and sustained two broken ribs. The master assessed the crewman's injury and the damage to the workboat and returned to harbour to evacuate the crewman for treatment at the local hospital. There was little damage to the workboat other than small dents and abrasions.

What went wrong

- The workboat's crew of master, mate and crewman were relatively new to the wind farm and still adjusting to local practices and their new contract;
- The master was not keeping watch; he had become distracted by paperwork and had lost track of time;
- The workboat was travelling at 5kts and, without the autopilot switched on, started turning slowly to starboard (use of the autopilot while navigating through wind farms was not permitted in the company's standing orders);
- The mate was on the aft deck completing some familiarisation training and the crewman was busy elsewhere;

The moment the workboat bow collided with the wind turbine tower platform

Lessons

- **Crew and vessel safety remains the priority**: Where paperwork must be completed, someone else should keep watch or a look out to maintain proper and effective visual navigation;
- **Watch what is going on!** Use all available sensors and instruments. The slow turn to starboard may not have been evident from the bridge windows alone. Watchkeepers ought make regular checks of data from an Electronic Chart Display and Information System (ECDIS), rate of turn indicator, and directional gyro, etc. to identify hazards and take preventative action to avoid collisions;

- **Administrative burden**: Paperwork sometimes needed to be done, but can a more efficient way of doing it be found?
  - How much it is absolutely vital?
  - Can the process be changed or improved?
  - Can vessel crew provide constructive feedback on the need for change to shore-based management without fear of reprisal?

Members may wish to refer to:

- Vessel Near Miss with wellhead
- Windfarm Support Vessel Njord Forseti hit wind turbine tower – Jersey Maritime Administration
- MSF: Contact between Vessel and Offshore Installation