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 LTI: Finger injury during emergency recovery of ROV

Applicable Life Saving Rule(s)

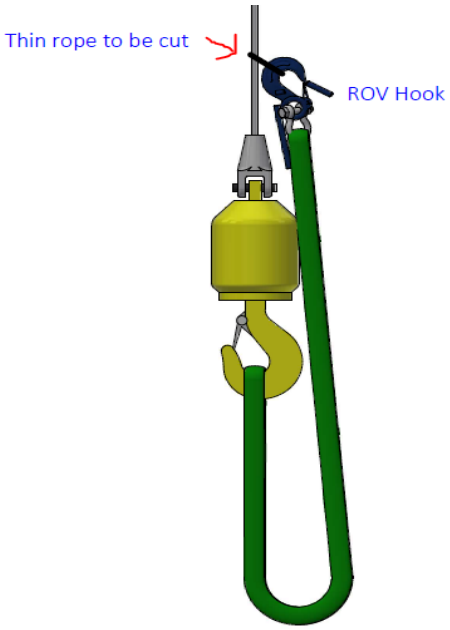
Line of Fire

What happened?

A worker suffered a serious finger injury when their finger was caught between a crane wire and the recovery hook on an ROV. The incident occurred during an emergency recovery of the ROV. A small boat (an FRC) was used to facilitate connecting the ROV emergency rigging sling to the crane hook to allow recovery of the ROV to deck. Movement of the crane headache ball was controlled by having it slightly submerged and having the forerunner with ROV hook tied up with a rope to the crane wire.

The plan was for a second person to use the boathook to retrieve the ROV/crane hook, which would then be connected to the emergency rigging. When it was connected to the crane, the securing line from the ROV to the FRC would then be released.

The worker successfully retrieved the emergency rigging on the ROV and attached it to the FRC by a securing rope. Then the FRC moved away from the vessel and the crane operator on the vessel started paying out wire and manoeuvring the rigging towards the FRC. However, before retrieving the crane hook, the worker had to release the ROV hook attached to the crane wire with a thin rope, using a knife. As the worker did so, their finger was pinched, resulting in an amputation down to approximately the nail bed on the left ring finger.



What went right

- A thorough toolbox talk, with all relevant personnel participating, had been held before the work took place;

What went wrong

- The step of releasing the ROV hook from the crane wire was not identified as a step, hence it was neither planned for nor risk assessed;
- Once the emergency recovery had started, the steps that needed to be taken were not sufficiently detailed in the plan or procedure;
- Fault finding and repair of latching mechanism on LARS ought to have been attempted prior to emergency recovery.

Actions taken

- Reviewed and updated Emergency Recovery procedure and risk assessment relating to it;
- Ensured that sufficient detailed planning, risk assessment and task evaluation take place particularly for emergency operations;
- Established regular training in emergency recovery scenarios using the FRC.

Members may wish to refer to:

- LTI: finger injury during davit test
- MSF: hand injuries [*A crewman suffered crush injuries when his hand was caught between a small boat and a davit frame as the small boat was being recovered. The incident occurred because he put his hand out to steady himself, didn't look where he put his hand and inadvertently placed it on the FRC davit frame.*]

2 BSEE: recurring hand injuries from alternative cutting devices

Applicable Life Saving Rule(s)

Bypassing Safety Controls | Line of Fire

The United States Bureau of Safety and Environmental Enforcement (BSEE) has published Safety Alert 487 relating to an observed trend of recurring hand injuries while using alternative cutting devices.

What happened

Incident 1: While running a new cable in a cable tray, an offshore worker was using a cutter to remove previously installed zip ties. Although the protective tip of the cutter was damaged, exposing the blade, the offshore worker continued to use the damaged cutting device. The exposed blade cut through the worker's glove, causing a laceration on the left hand between the thumb and index finger.

Incident 2: An offshore worker sustained a laceration to the back of their hand, between the thumb and index finger, while cutting zip ties. The incident occurred when the cutting device rebounded, causing the injury. It was found that the protective guard over the blade was missing, leaving the blade exposed (Figure 2).

Incident 1: Damaged alternative cutting device and cut glove

Incident 2: Exposed blade on alternative cutting device

Actions to take

BSEE notes that when using any alternative cutting device, it is critical to follow safe work practices to prevent worker injury or damage to property. Misuse of these alternative cutting devices often leads to injury, emphasizing the need for future continuous vigilance and strict adherence to safety protocols. Alternative cutting devices that have been damaged or altered should be discarded.

BSEE recommends:

- Ensuring all personnel identify the appropriate alternative cutting device in the Job Safety Analysis for the assigned task;
- Inspecting the alternative cutting device before use to confirm that the protective shielding is free from wear or chips and that it is properly installed;
- Ensuring personnel do not alter or modify alternative cutting devices before use;
- Ensuring personnel use cut resistant gloves for added protection when using alternative cutting devices;
- Ensuring that if the alternative cutting device is defective in any way, the cutting device is discarded appropriately.

A wide range of safety promotional material on hand safety is available from IMCA, including this poster, here: https://www.imca-int.com/resources/safety/promoting-safety/hands/

3 Hot work performed outside of Permit to Work (PTW) boundary limit

Applicable Life Saving Rule(s)

Hot Work | Work Authorisation

What happened

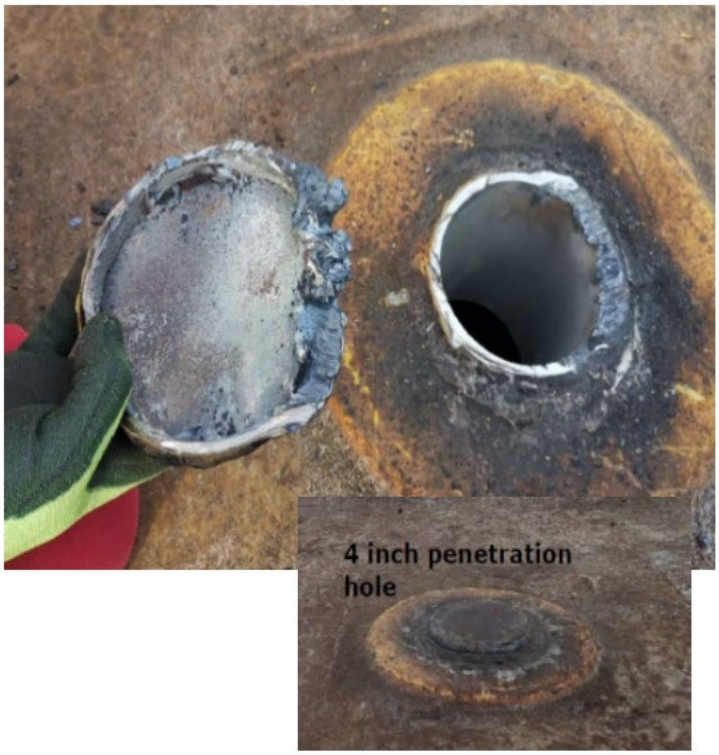
A near miss occurred when a third-party contractor working onboard a vessel removed a trip hazard (a metal stump section) from the vessel main deck, using a cutting torch and grinding disc. Whilst cutting the 10cm diameter stump, sparks and slag (hot work discharge) dropped into the hole in the deck and fell to a thruster room directly below, onto scaffolding boards and onto a 600V HV electrical cable. There were some burn and scuff marks caused. Vessel engine room crew in the affected area noticed the falling sparks from above, and further identified that there was no fire watcher available in the vicinity. The job was stopped immediately.

What went wrong

- Less than adequate risk perception:

- The third-party contractor failed to perform an assessment of the affected worksite conditions below the deck and did not understand the working conditions in the surrounding area;
- No risk assessment was conducted and as a result there were inadequate controls in place;

- Inadequate communication:
  - No proper communication was established during the PTW application (it did not include task being performed);
  - No permission was sought prior to starting hot work on the trip hazard (stump/cover);
  - Assumptions were made that the hot work permit for the welding shop area applied to the surrounding area.



Cut penetration

View from area below the deck

- Inadequate pre-job planning: there was no instruction or operational requirement to remove and cut off the stump on the vessel deck. The foreman decided by himself to cut off the stump as he observed that it posed a trip hazard;
- A pre-job site inspection took place at the welding workshop before the PtW was issued but this not did capture what was going on in the deck below;

- Hot work PtW was applied and obtained specifically for hot work activities inside the welding workshop only;
- There was no supervision from any party at the immediate area when the foreman decided to cut-off the stump/cover;
- There was no fire-fighting safety control provided on the deck below.

Actions and recommendations

- Training:
  - Review and update training material to ensure all aspects of the PTW requirements are captured;
  - Ensure third-party contractors receive adequate training (including refresher training) on the Permit to Work system;
- Job preparation:
  - Review and update pre-job planning, hazard identification, job site inspection and readiness plans before issuing a PTW;
  - Ensure all crew involved are properly informed and updated about any Permits to Work in operation;
  - Review Task Risk Assessment to capture the lessons learned of the incident;
- Ensure adequate supervision available at site;
- **STOP!** remind each other that procedures and processes are there to help us.

Members may wish to refer to:

- Poor control of work in dry dock
- Permit to Work and Isolation procedure not followed
- BSEE: Welding and Burning Hazards

4 Vital safety information (height of vehicle) found incorrect

What happened

An IMCA member's contractor in the United States reports an incident in which it was discovered that the "height of vehicle" information displayed on a truck, was found to be incorrect. A worker was moving a light industrial vehicle (a "bucket truck" with a bucket on a folding hydraulic arm) when the correctly stowed folding arm came into contact with an overhead structure. There was no damage.

What went wrong

On investigation, it was found that the stamped traveling height on the truck was different from the actual traveling height. The actual traveling height was verified by careful measurement. The truck was stamped with a traveling height of 9 feet and 10 inches (300 cm) but the actual measured traveling height was found to be 10 feet 1 inch (307cm).

Subsequently all similar vehicles in the fleet were measured and it was discovered that three out of four trucks measured also had incorrect stamped traveling height.

Recommendations

- Whilst this incident is about vehicles, the principle applies not only to all industrial vehicles and sometimes private cars, but in general to safety information that we may have assumed for years is correct.
- Consider checking height of vehicle information in industrial vehicles, overhead clearances and other measurements;
- Consider checking how up to date are any printed manuals or instructions you have.

Members may wish to refer to:

- Incorrect information in user manual for fixed fire-fighting system
- Live sub-surface power cable inadvertently cut
- Equipment found live: drawings incorrect for Lock-out/Tag-out
- Incorrect as-built drawing configuration

5 NTSB: Crane wire failure

The National Transportation Safety Board of the United States (NTSB) published "Safer Seas Digest 2023", which includes a number of incidents which may be of interest to IMCA members. This is one of them.

What happened

A crane wire on a cargo vessel parted whilst the vessel was offloading a wind turbine nacelle. The nacelle, weighing 69 tonnes, dropped back into the vessel's cargo hold. There was no pollution nor injury, but damage to the vessel and to the dropped load were estimated at US$3–5 million.

Facts about the incident

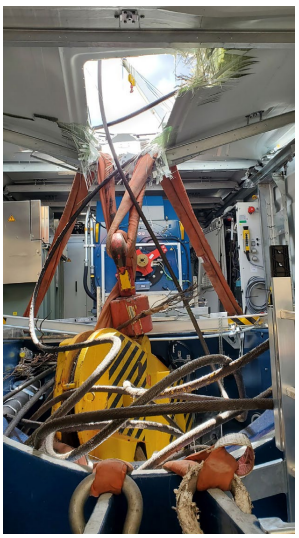
- The load was 86% of the crane's Maximum Rated Capacity (MRC) of 80 tonnes at less than 19m from the crane base (as certified by third-party contractors in 2019);
- The crane had completed two identical lifts without incident before this lift;
- Post-incident inspection found no issues with any of the equipment and no evidence that the hoisting wire rope or the crane were shock-loaded— either through sudden crane movement or failure of nacelle rigging—in such a way as to create a dynamic load on the wire rope during the lift;

What was the probable cause

The probable cause of the failure of the hoisting wire was undetected corrosion and wear in strand wires.

- Examination of the hoisting crane wire found significant external corrosion, as well as

Parted wire rope on the crane side



Crane block smashed into the top of the damaged nacelle

Similar nacelle in another vessel's cargo hold rigged in accordance with manufacturer-recommended guidance.

roughness and pitting, and “uniform corrosion of internal surfaces” of the hoisting wire rope. This corrosion and wear caused some of the individual wires comprising the strands of the hoisting wire rope to part when the crane lifted the nacelle unit, subsequently causing the strand and then the remaining wire strands to become overloaded and fail.

- Analysis of the wire rope noted that that visible signs of external corrosion could not be fully appreciated until the grease was removed.
  - The vessel’s cranes and wire ropes had been examined annually by third-party contractors but these surveys primarily involved visual inspections limited to obvious indications of wear (such as broken wires, visible corrosion, or observable degradation to outer strands and surfaces) and therefore would not have identified the corrosion.
- The wire rope had been regularly maintained in accordance with the operating company’s planned maintenance system, and the required daily and monthly checks had been performed according to maintenance records; however, the vessel’s PMS did not require the removal of grease from the wire rope (as recommended by the manufacturer). Without removing the grease to examine the wire rope, the corrosion on the wire rope could not be detected.

Lessons (NTSB)

- Saltwater and humid ocean air cause corrosion of metals, presenting challenges for the maintenance of high-strength steel wire ropes on vessels. A deteriorated wire rope directly affects a crane’s ability to safely and reliably handle loads up to the crane’s rated capacity (safe working load). Therefore, diligent inspection, maintenance, and management of wire ropes are essential. Working wires should be changed at recommended intervals, or more frequently, depending on operating conditions and use.

Members may wish to refer to:

- IMCA HSS022, IMCA LR001, IMCA M194 *Recommended practice on wire rope integrity management for vessels in the offshore industry*
- IMCA HSS019 LR006 M187 D060 *Guidance for lifting operations*
- A list of 37 Safety Flash incidents involving corrosion in wires