Safety Flash

24/22 – November 2022

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 Focus on third-party dropped objects

Applicable Life Saving Rule(s)

Bypassing Safety Controls

Line of Fire

What happened

A member reports a significant increase in the number of dropped objects at third-party premises.

The dropped object incidents have included many high potential near miss dropped objects which under different circumstances could have resulted in debilitating personal injuries. The dropped objects have been all manner of items, from heavy pipes, rigging failures through to nuts and bolts, that all had the potential for personal injury.

Examples include:

- Rigging failures;
- Weld Failures;
- Overhead gantry crane failures;
- Dropped pipe during pipe handling;
- Snagged rigging during pipe transfer;
- Incorrectly secured rigging.

What were the causes?

The following findings were identified from the third-party dropped object incidents, which were made a focus of learning, avoidance, and mitigation strategies to prevent future dropped objects:

- Inadequate procedural control that did not identify the correct process and risk management to be followed during pipe handling;
- Inadequate acknowledgement, adherence, understanding and assessment of risk controls in the risk assessments – truck inspections, banksmen/additional spotters not positioned correctly, toolbox talks not identifying the hazardous activities;
- Certifications of lifting equipment not adequate for expected use case;
- Incorrect equipment being used for transferring pipe;
- Human factors, risk perception and competency of personnel involved in operations;
- Inadequate quality control and inspection;
- Inadequate planned maintenance systems in place.

Our member reminded crew what to do:

- During the contracting process ensure that third-party HSE Management Systems (HSEMS) have fit for purpose risk controls in place to prevent/mitigate dropped objects;
- Set clear expectations with third-party contractors in respect of lifting and pipe handling activities.
- Formal understanding of differences between company and third-party contractors' levels of oversight, mode of control and accountabilities – BEFORE starting work;
- Audits, inspections, and verifications of third-party operations to ensure that proper risk management controls are in place to prevent dropped objects;
- Ensure third parties consider and align with industry good practice;
- Remember the "7T's" – **Take The Time To Think Things Through**;
- Support third-party contractors to ensure a focus on risk perception and considering regular "fresh eyes" reviews of work tasks and equipment use;
- On all worksites ensure that the obligation and expectation to exercise the **stop work authority** is clearly communicated and understood by all parties.

Members may wish to refer to:

- Control of sub-contractor personnel: Unplanned and uncertified lifting operations
- Use of damaged electrical equipment by dock workers

2 Hydraulic Oil Leak to Sea from Downline Fitting

What happened

During decommissioning, cutting work was being conducted using a diamond wire saw. A third-party supplier's technician noticed a sudden drop in pressure, and it was discovered that 100 litres of hydraulic oil had been released to sea.

The downline was disconnected, recovered to deck and inspected. The leak was coming from a BSP fitting 40m from the diamond wire saw connection point.

Before the incident, the system had been deployed following deployment checks using a dedicated form for hydraulic checks. The downline was in a "figure 8" on deck and subsea as per procedure and risk assessment.

BSP fitting which came loose

What was the cause?

Our member identified the following:

- Immediate Cause: the fittings became slack: It is not known when the fitting slackened. It is suggested that a combination of handling on deck, energising and de-energising were contributory factors;
- Underlying Cause: checks were omitted: Fittings were not checked for tightness when overboarding the diamond wire saw and downline;
- Root Cause: the checklist used did not prompt the check of all fittings for tightness, only visual checks.

Our member took the following actions

- Added additional supports on fittings attached to the tugger over and above existing controls;
- Ensured that physical checks for tightness were conducted;
- After a review of feasibility, the bight of the hydraulic hose was removed;
- Checklist was updated to include checks for the tightness of fittings;
- Incident was shared with other users of similar equipment.

Members may wish to refer to:

- LTI: diver injured during water jetting operations *[threads came loose]*
- Dropped object near-miss: Antenna parts worked loose and fell to deck
- Lightning Conductor Fell – Dropped Object Near Miss *[The potential for the lightning conductor to become unscrewed was not recognised, and the connection is not easily visible during regular drops inspections]*

3 BSEE: Poor preparation prior to hot work leads to fires

Applicable Life Saving Rule(s)

Bypassing Safety Controls

Hot Work

The United States Bureau of Safety and Environmental Enforcement (BSEE) has published Safety Alert #447 relating to incidents in which fires were caused following hot work.

What happened

Recently, several fires occurring during hot work have been reported to BSEE. BSEE defines hot work as any job with the potential to create an ignition source, such as an open flame, sparks, or high temperatures. Examples of hot work include welding, using acetylene torches, and grinding and cutting metal.

Incident 1: As a construction crew removed skid pads with a torch on the top deck, slag and sparks fell through the grating onto the manway cover of the water skimmer below, igniting a fire. The fire self-extinguished shortly thereafter as the fire watch was securing a dry chemical fire. The water skimmer had been cleaned a week prior in preparation for vessel entry but had not been deemed inert, and the oil dump lines were later found to be full of flammable condensate. Although gas was not detected in the area around the skimmer before starting work, an 8% lower explosive limit was later detected at the manway cover. Workers used fire retardant tarps earlier in the job, but when the workers moved to a new location above the water skimmer, they did not take the retardant tarps with them.

Incident 2: While cutting grating with an Oxy-Acetylene torch, falling sparks ignited gas leaking from a pinhole on a gas sales riser located 4m below the grating. The fire watch noticed and **stopped the job**. A worker used a 15kg ABC fire extinguisher to extinguish the flame. Although a gas detector had measured a 0.0% lower explosive limit before the work started, the gas leak occurred in an area not easily accessible for inspection or gas monitoring.

Incident 3: Before a construction crew removed steel bar grating from beneath a building, it was elevated a few centimetres to provide a distance barrier between the subfloor and the torch cutting below. Saltwater was used to saturate the subfloor, and water was re-applied periodically. The crew finished their work, and the fire watch

remained on location for an additional 30 minutes. A fire was noticed on the lower side of the building 15 minutes later, which was extinguished with the saltwater hose. It was found that the distance barrier may not have been sufficient to prevent a fire, and that the combustible surfaces should be saturated with water during the fire watch period as well as during the job.

Therefore, BSEE recommends:

- Using flameproof tarps or other fire-resistant guards to protect equipment from falling sparks and excessive heat. Scaffolding may be required to cover elevated areas;
- Covering and sealing nearby deck and skid drains before starting hot work to prevent flammable gases from entering the area;
- Checking skid pans (visually and with a gas detector) for residual flammable liquids and flooding them with water if possible;
- Designating a fire watch during jobs involving open flames, sparks, or heat sources. Operators should maintain the fire watch for at least 30 minutes after welding activities end, recognizing that some jobs may require longer periods;
- Ensuring the fire watch is positioned well to view all hazardous areas near the hot work location;
- Locating and inspecting the closest fire extinguisher before starting hot work. If an extra fire extinguisher is available, move it near the work area before starting the job;
- Verifying that any nearby container previously containing hydrocarbons has been properly flushed and deemed inert before starting hot work;
- Using a designated safe welding area for hot work when possible;
- Completing a hot work permit and Job Safety Analysis and reviewing them immediately before starting the job. All personnel involved with the job should participate in this process;
- Using gas detectors to continuously monitor the area and ensuring that flammable gases are not present before and during hot work;
- Testing areas where sparks are likely to fall. Remember: gas detectors may be less effective at finding gas leaks in well-ventilated areas;
- Calibrating gas detectors regularly, and bump testing them before each use.

Members may wish to refer to:

- SIMOPS – Smoke from hot work task enters confined space
- Near Miss: Fire blanket caught fire during third-party hot work

4 Failure to plan properly: electrician sustains serious burns (UK HSE)

The UK Health and Safety Executive (HSE) fined a retail company £1,000,000 and an electrical contracting company also, after an electrician suffered serious burns to 15 per cent of his body when he was caught in an explosion. See press release here.

Applicable Life Saving Rule(s)

Bypassing Safety Controls

Energy Isolation

What happened

The HSE reports that an electrician was using a metal spanner to repair an electrical fault at a supermarket warehouse. The spanner he was using came into contact with a live busbar (metallic strip) linked to the power distribution causing an electrical explosion. The electrician sustained serious injuries which included burns to his arms, hands, thighs, legs, and face. He was placed in an induced coma for two weeks and had to undergo several skin grafts. As a result of the incident the electrician was unable to work for five months.

What was the cause

An HSE investigation found that:

- The electrician had been attempting to connect a generator to a low voltage supply in order to allow his employer's client to operate some of its core site functions whilst high voltage maintenance was being undertaken;
- The work was complex involving several contractors and required co-ordination of different working parties with specific time limited requirements;
- There was insufficient planning between parties beforehand including who was in charge of each site, coordination of work and exchange of relevant documentation;
- The client (the retail company) had failed to appoint a suitably competent person to plan and carry out the work to connect temporary generators to their distribution board at the premises
- The electrical contractor's work methods fell well below the required standards:
  - Electrical work commenced without proper planning;
  - The power supply to the circuit was not stopped prior to the incident;
  - Live working was allowed to take place, this meant that the power supply could be switched on or off at any point, putting workers at risk of electric shock.

The HSE inspector said: *"This incident has had life-changing consequences on the victim and his family. It could have been avoided if the companies involved had taken the time to appropriately plan and coordinate tasks to ensure the circuit was dead, eliminating the risk of electrocution to workers. Working with electricity is a high-risk activity and safety must be a priority."*

IMCA has published this incident, *not only* to highlight the importance of safety in electrical work, but primarily to draw attention to the risks inherent to complex work involving multiple contractors and simultaneous operations.

Members may wish to refer to:

- Electrician suffered flash burn to hand *[lessons were learnt on planning, communication, supervision etc.]*
- Use of damaged electrical equipment by dock workers
- Control of sub-contractor personnel: Unplanned and uncertified lifting operations

5 Live sub-surface power cable inadvertently cut

What happened

A high potential near miss occurred during onshore preparations for a pipeline installation when an excavator cut into an energised power cable. Trenching activities for the onshore pipeline installation were being completed. During the trenching works, the excavator operator inadvertently cut into an energised three-phase 21.6kVA power cable buried at approximately 2 metres.

Upon finding the cable an "All Stop" was called, personnel immediately evacuated from the immediate area, and the area of works secured. Company management and the client were informed. There were no injuries to personnel nor damage to excavating equipment.

The client subsequently de-energised the power to ensure the cable was no longer "live", and a registered electrician then repaired the cable and brought the cable back into service.

What went wrong

Our member noted the following issues:

- Work Planning
  - The cable had been installed two years before by the client's subcontractor, before our member was involved;
  - Investigation found that the cable was not reported on the initial as-built report;
  - Review of client-supplied drawings found that the power cable was noted as a 'future cable'; and should not have been in its as-found location.
- Control of Work
  - The cable was live with no isolation in place;
  - During the excavation works there was a spotter in place but there was no expectation of finding a cable.
- Risk Assessment
  - During the risk assessment process covering the excavation and trenching work, this cable hazard was not identified, and therefore a cable tracker application was not included as a key control measure.

Our member took the following actions:

- Prior to all operations we must remember the "7T's" – **Take The Time To Think Things Through.**
- Consideration of use of the IOGP Life-Saving Rules "Start Work checklists", to verify that controls/safeguards designed to prevent fatalities and serious injuries are in fact in place and functioning;
- Excavation works to ensure consideration of "Live" sub surface cable hazards during work planning and risk assessments with cable trackers as a primary control;
- Ensure that the obligation and expectation to exercise the **stop work authority** is clearly communicated and understood by all parties across all operations.

Members may wish to refer to:

- Near-miss: Live electrical cable
- Two electrical incidents – UK HSE
- Incorrect as-built drawing configuration

6 Near miss: oily rag activated smoke sensor in vessel laundry area

Applicable Life Saving Rule(s)

Bypassing Safety Controls

What happened

A fire alarm was activated from the laundry room. On duty personnel were sent to investigate and discovered smoke was coming from one of the clothes dryers in use at the time.

The power supply to all the dryers was immediately switched off. The smoke (there was no fire) was found to have come from an oily rag in the pocket of one of the coveralls being dried at the time. There were no injuries and some minor damage to clothing.

What was the cause

- An oily rag in the pocket of one of the coveralls being dried at the time – existing, known, laundry procedures were not followed – realistically, someone forgot to check the pockets of their overalls before putting them in the wash.

What was changed to prevent recurrence

- Updated risk assessment with additional controls;
- Renewed signage in laundry to
  - remind crew to check all pockets prior to laundry.
  - remind crew to segregate oil-soiled work clothing when doing laundry.
- Arranged separate laundry collection point for clothing that may be oil-soiled;
- Dryer to be set at normal temperature – drying laundry at too high a temperature can greatly increase the risk of combustion;
- Laundry procedure to be made part of sign-on & vessel induction training.

IMCA notes that this is an 'evergreen' safety issue that has come up often before. Our members may wish to bring this potentially serious issue once again to the attention of their management and crew.

Members may wish to refer to:

- Auto-ignition of laundry items (2018)
- Near miss: potential fire in the laundry room (2018)
- LTI: Burn to hand while working in laundry (2017)
- Fire: Spontaneous combustion of towels (two incidents, 2016)
- Near-miss: Laundry fire hazards (two incidents, 2016)
- Tumble dryer fire onboard a vessel (2009)