

IMCA Safety Flash 20/18

September 2018

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learnt from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links. Additional links should be submitted to info@imca-int.com

Any actions, lessons learnt, recommendations and suggestions in IMCA safety flashes are generated by the submitting organisation. IMCA safety flashes provide, in good faith, safety information for the benefit of members and do not necessarily constitute IMCA guidance, nor represent the official view of the Association or its members.

Theme: Dropped Objects

This safety flash focusses on a number of dropped object incidents. In the first we see how pro-active intervention prevented a worse outcome. The second incident covers high potential dropped pipe incidents. We then look at dropped object incidents arising from corrosion failures, and dropped objects arising from failure to properly plan and prepare the job. The final incident covers a dropped object from lifted cargo.

1 Pro-Active Intervention Prevented High Potential Dropped Object

What happened?

During inspection of the vessel crane, it was noted that a steel spacer plate had become partially detached due to corrosion forming behind the plate. The plate had been installed by the manufacturer during the crane installation but had not been removed as intended. On touching the spacer, it detached completely but was prevented from falling.



What went wrong? What were the causes?

The spacer plate had been present since original vessel/crane build. It weighed 1.5kg and had the potential to fall 40 meters to deck. The only means of attachment for the steel plate to the structure was by tack welding. This was an accepted form of attachment by the manufacturer for temporary use, but not for permanent equipment.

What lessons were learned?

- ◆ Be vigilant during dropped object reviews for items with similar method of attachment i.e. tack welded;
- ◆ Ensure that any identified items are securely attached;
- ◆ Report any incidents of non-continuous welding and obtain guidance on corrective actions;
- ◆ If required, adjust maintenance actions to monitor for corrosion.

Members may wish to refer to the following incident

- ◆ [Crane Boom dropped object](#) (an object fell from a crane as a direct result of a failed tack weld)

2 Dropped Pipe Incidents with Potentially Fatal Consequences

What happened?

During line pipe load out operations, three high potential near miss incidents occurred involving quayside crane lifting operations. All of the incidents had the potential for fatal consequences from line of fire situations. Two of the incidents resulted from the line pipe being dropped from the quayside storage positions, and the third as a result of line pipe contact with the ship's hold bulkhead which could have caused the pipe to drop.

In all of the incidents, site activities were being directly supervised and controlled by our member's subcontracted line pipe supplier. The operations involved a chartered heavy lift vessel, subcontracted by the line pipe supplier, to undertake the pipe load out activities.

What went wrong? What were the causes?

Our member noted the following:

- ◆ There was no work instruction available to detail the task and process of securing and lifting pipe from the quayside into the hold of the vessel;
- ◆ There was no requirement within the line pipe supplier's management system to verify that their subcontractors executing the pipe load out understood and were experienced in the task, nor to verify the training and competency of those subcontractors;
- ◆ The communication process between the banksman and crane operator was not clearly understood (there was no documented process);
- ◆ The crane operator found it hard to see the banksman during the lifting operation, yet continued the lifting operation;
- ◆ The pre-job briefing did not cover all of the tasks to be conducted;
- ◆ There was a lack of experienced supervision at all stages of the pipe load out activities;
- ◆ The quayside slewing crane used was not as suitable for the task as the gantry crane, which was not always available for use.



What lessons were learned?

- ◆ In evaluation of potential suppliers:
 - a focus should be placed on the high-risk activities that bidders are proposing to subcontract out
 - do not assume that suppliers are knowledgeable and experienced in all aspects of their contract.

Members may wish to refer to the following IMCA Guidance:

- ◆ [Guidelines for lifting operations](#) (IMCA SEL 019)
- ◆ [Guidance on safety in shipyards](#) (IMCA HSSE 032)

3 Dropped Object: Crane Floodlight

What happened?

A floodlight fell from its position on the knuckle boom of the vessel's crane. The floodlight arrangement was supported on a stainless steel bracket, comprising a bar and attachment plate that is bolted to the knuckle boom head. This arrangement allowed the floodlight to swivel and illuminate the load area.

What went wrong? What were the causes?

The weld between the bar and the attachment plate failed due to the poor quality of the weld, which upon inspection revealed undercut, poor penetration and overdressing, resulting in a minimal fusion area which was insufficient to withstand vibration and exposure in the marine environment.

The underlying causes were found to be:

- ◆ Inadequate engineering;
- ◆ Inadequate QC/monitoring of design and build at point of fabrication (crane manufacturer).

What actions were taken?

The floodlight was restored to its original position, with a security chain installed as a retrofit attachment.

Members may wish to review the following

- ◆ [Serious dropped object incidents](#) [arising from corrosion]
- ◆ [Crane boom dropped object](#) [failure of tack weld]
- ◆ [Galvanic Corrosion causes dropped object](#) – satellite dome fell from mast



4 Two Serious Dropped Object Near Misses

Two further dropped object cases have been reported recently, highlighting the extreme danger and potential for fatalities.

Incident 1

A light and fitting on a third-party ship, weighing 8kg, fell 20 metres to the deck narrowly missing one of the crew members. The light was fitted to a post which had previously been identified as heavily corroded.

Findings: the corroded item had previously been identified by the ship owners, but no corrective action was taken to secure the light and remedy the situation. Subsequent inspection by our member identified other items at risk of falling.



Incident 2

A 2.8kg steel pin fell 16 metres to the deck. The area immediately below the drop area had barriers set, however if the pin had hit the structure and was deflected it could have endangered the deck crew.

Findings: the task was not planned, or risk assessed correctly:

- ◆ The removed pin was placed on the tower structure instead of in a scaffold clamp type basket;
- ◆ The rigger was unfamiliar with the task and was not made aware of the required rules when working at height;



- ◆ Tools in use by the work team did not have the required lanyards and could have also fallen to the deck.

What lessons were learned?

Our member recommended:

- ◆ Outstanding defects that pose a risk of dropped objects should be categorised as dangerous and either removed or rectified;
- ◆ Worksite management should ensure that only the correct secured tools are used when working at height;
- ◆ Tools used at height should be fitted with the appropriate securing devices to prevent them falling;
- ◆ Ensure that all work at height is subject to a specific risk assessment which addresses the potential for dropped tools and work equipment, and identifies the controls to prevent this happening;
- ◆ Barriers under towers should be set at a sufficient distance considering the possibility of items deflecting off any structures;
- ◆ Prior to third-party vessels being taken on hire, evidence should be produced by the owner to prove that there has been a DROPS survey conducted, and a regime is in place to inspect, maintain and correct any defects affecting the security of equipment at height.

DROPS is a key safety focus. For more information on DROPS visit <http://www.dropsonline.org/resources-and-guidance/poster-selection/>, for industry guidance, posters, presentations and good practice hints and tips.

Members may wish to refer to the following:

- ◆ [Working at height](#) (video)
- ◆ [Avoiding dropped objects](#) (video)
- ◆ [Technip DROPS](#) (video)
- ◆ [Saipem DROPS – choice not chance](#) (video)
- ◆ [Near miss dropped object: protector plate drops from crane](#) (2015)
- ◆ [High potential dropped object](#) (2014)
- ◆ [Near miss: dropped object](#) (2012)

5 Dropped Object: First Aid Injury During ROV Maintenance

What happened?

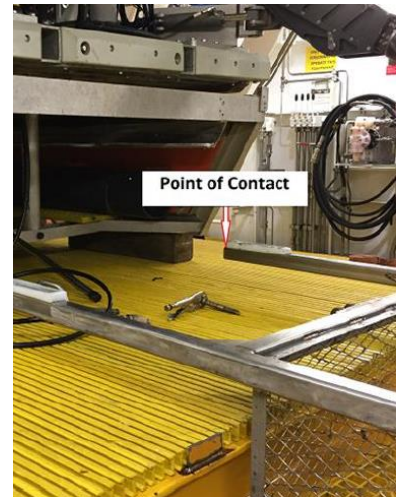
A tooling tray guide arm fell from an ROV skid rail slot and hit an ROV technician's torso. He was beneath the ROV disconnecting the securing pin. Two further technicians had pulled out the tooling tray to allow access for the injured person to clear himself from underneath. While doing so, the guide arm dropped from the ROV skid rail onto the ROV technician underneath. The estimated weight of the tooling tray was 68 Kg. He was taken to the local clinic as a precaution for a check-up, as the vessel was in port at the time of the incident.



Incident scene



Tooling tray guide arm that made contact with the IP



Additional view of guide arm

What went wrong?

- ◆ There was a requirement to remove the tooling tray before the next project;
- ◆ The technician was required to go underneath to disconnect the securing pin from the hydraulic cylinder that connects the tooling tray to the ROV skid;
- ◆ The skid was removed whilst he was underneath, and it fell onto him causing injury;
- ◆ The risk assessment performed was not task specific.

What were the causes?

- ◆ There was a lack of communication and poor risk perception demonstrated by the ROV technicians;
- ◆ The mechanism was not designed to be easily or safely removed.

What lessons were learned?

- ◆ There is a need for the attachment design for the clevis pin to be in a position that allows for access from the main deck in front of the ROV; removing the need for personnel to be underneath during removal;
- ◆ There needs to be higher hazard/risk perception for routine tasks.

What actions were taken?

- ◆ Improved the design (see image) eliminating the need for working underneath.



Members may wish to refer to:

- ◆ [High potential near miss: incorrectly secured overhead equipment](#)
- ◆ [LTI as a result of load dropped from lifting magnet](#)
- ◆ [Near miss: diver working under suspended load](#)

6 Potential Dropped Objects in Frame Pockets

What happened?

The Marine Safety Forum (MSF) has published [Safety Alert 18-20](#) on *Potential Dropped Objects in Frame Pockets*. When preparing a heavy lift to be discharged from an offshore supply vessel to an offshore installation, the vessel's AB's were carrying out final checks, which included checks for any potential dropped objects. During these checks, they discovered some debris within the frame pocket. The items were estimated to weigh approximately 1kg.

What went wrong? What were the causes?

Cargo checks onshore failed to spot the items before the lift had been loaded onto the PSV. This was apparently due to the lift frame positioning on the trailer which may have hampered the checks at the gantry.



What actions were taken? What lessons were learned?

- ◆ The potential dropped objects were removed from the pocket and the lift was safely and successfully discharged to the offshore installation;
- ◆ This alert highlights the importance of final checks on all lifts prior to discharge offshore even though there had been previous checks onshore.

The full MSF safety alert can be found [here](#).

The MSF notes that further information and guidance on the checking of cargo items for potential dropped objects can be found in 'Best Practice for the Safe Packing & Handling of Cargo to & from Offshore Locations' available at www.onshoreoffshorecargo.com.

Members may wish to refer to the following:

- ◆ [Saipem DROPS – choice not chance](#) (video)
- ◆ [Technip DROPS](#) (video)
- ◆ [Dropped object awareness](#) (MSF, 2016)
- ◆ [Dropped object incidents](#) (2014)

Dropped objects or potential dropped objects from cargo are a frequent cause of incidents. Users of IMCA Safety Flashes can search the IMCA Safety Flash database themselves using *any search word*. Please browse to <https://www.imca-int.com/alerts/safety-flash/> and enter text in the search box.

