

## IMCA Safety Flash 33/16

December 2016

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](mailto: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](http://www.imca-int.com/links). Additional links should be submitted to [info@imca-int.com](mailto: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.

### Summary

There is no common theme to this safety flash. Members are to be thanked for continuing to share high quality incidents with IMCA. We have a lot of incidents waiting to be published, and this “mixed” safety flash deals with some of the backlog. In this flash we have:

- ◆ Failure to report a subsea hydraulic leak – procedures were not followed;
- ◆ A vessel that made contact with the quay, damaging both – poor communications;
- ◆ A dropped object from a crane – a continuing theme and an important reminder on DROPS;
- ◆ A heavy pipe that fell from a stand and killed two workers in a yard – a failure of hazard and risk awareness;
- ◆ An ROV supervisor gets a serious electric shock – again, a failure of hazard and risk awareness;
- ◆ Unsafe boarding of vessels – procedures not followed; failing to understand hazard and risk;
- ◆ A crewman that fell down stairs and broke his arm.

### 1 Failure to Report Hydraulic Leak Subsea

A member has reported an incident in which crew failed to appropriately report a hydraulic leak subsea. The intent of this report is to highlight key learnings from that failure and to understand the reasons why the incident had not been reported at the time of occurrence.

The incident occurred during subsea operations which involved divers monitoring a manifold valve. A hydraulic release occurred when a valve was operated by the client FPSO. This leak was not detailed on the Dive Log or as an anomaly within the Management of Change (MoC) step of the operation. It was not reported to the Offshore Management Team nor to the client representative on board at the time. The client became aware of the leak some four months later following a review of as-built video footage, and onshore project management were notified of the incident. In the regulatory framework within which the vessel was operating, it is a requirement that any such releases to sea are reported by the client within 6 hours of such an event occurring.



No personnel were harmed or equipment damage sustained; however, an unknown volume of fluid was discharged to the environment which was not reported at the time of the incident.

Our member noted the following:

- ◆ The requirement to report all subsea leaks was not followed. Personnel were not familiar with company procedures in place to ensure compliance with local regulations;
- ◆ Project process to manage implementation of client site instructions for additional works were not clearly defined.

The following lessons were learnt:

- ◆ Ensure that pollution reporting process requirements are understood by all key personnel both onshore and offshore;
- ◆ Dive Plans should clearly reflect requirement to notify both client, master and project engineer of any discharge observed from subsea infrastructure.

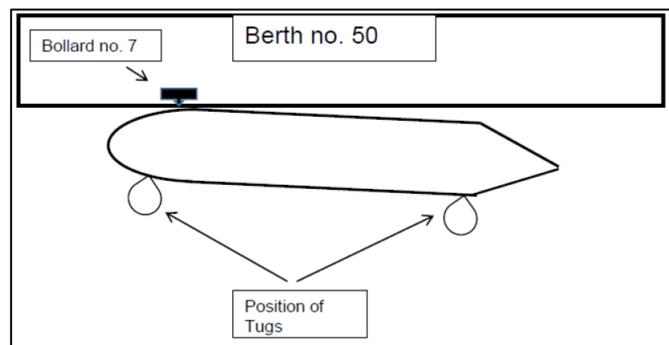
Members may wish to refer to the following incident (search word: *pollution*):

- ◆ [IMCA SF 16/14](#) – Incident 5 – *Ruptured hydraulic hose*.

## 2 Vessel Made Contact with Quay

A member has reported an incident in which a vessel landed heavily on the quay, causing damage. The incident occurred during the hours of darkness, during shifting of the vessel's position at the berth. The shifting plan was discussed between the Master and the pilot and information was exchanged. The vessel's position was agreed to be adjusted to meet the terminal's requirements for cargo offloading. Two tugs arrived and the shifting operation began. The main engine and bow thruster were on standby and used as required.

The operation proceeded as planned and the vessel came gently to a stop, parallel to berth about 2 meters out. At this time, an unloading boom needed to be deployed. It was found that this could not be deployed whilst the vessel was in this position, as there was fixed equipment on the berth in the way. After further adjustment of vessel position, the unloading boom was swung out.



The Master requested that the Pilot take extra care as the vessel was brought alongside. However, as the vessel was being pushed towards the berth both tugs failed to push in harmony.

The after tug pushed more and instead of landing parallel to the berth, the vessel's port quarter landed heavily on the quay near Bollard 7. The vessel's port side shell plating was damaged near a fuel oil tank, and there was damage to the concrete of the quay itself.

Our members' investigation noted the following:

- ◆ Although the shifting plan was discussed verbally, there was no evidence of a risk assessment being carried out for this operation;
- ◆ The Master and the Pilot had not agreed on a working language during their discussion and information exchange;
- ◆ The Pilot was using French rather than English to instruct the crew of the tugs;
- ◆ The Master and bridge team did not intervene with the Pilot to verify commands given to the tugs in French.

The **immediate causes** were determined to be:

- ◆ The Pilot misjudged the tugs pushing power;
- ◆ The pilot was giving instruction in a language which was not understood by the bridge team.

A **causal factor** was **inadequate communication** – the Master failed to intervene with the Pilot when instructions to the tugs were given in a language he did not understand.

The **root causes** were identified to be:

- ◆ Risk considered tolerable – this was considered by the Pilot to be a routine recurring task;
- ◆ Inadequate Standards – there were no company procedures to cover the situation, particularly with regard to the working language on the bridge during navigational operations where Pilot/tug assistance is required.

Our member took the following **preventative actions**:

- ◆ Remind Masters that they should override the Pilot's instructions if they are considered to be incorrect or unsafe;
- ◆ Establish formal working language for ship's movement at all times including berthing/un-berthing operations;
- ◆ Ensure compliance with guidelines on relationship between Master, Officer of the watch (OOV) and Pilot.

[IMCA Safety Flash 10/16](#) covers mooring and cargo handling incidents. Incident 1 – *Vessel in collision with floating dock* – is very similar to this incident and may be of interest to members.

### 3 Near Miss: Dropped Object from Crane

A member has reported a near miss incident in which there was a dropped object from a crane. A protection bar from the small hook on the main crane came loose and fell from approximately 70m down to deck, leaving a small dent in the deck.

This incident serves as a timely reminder. Members are encouraged to:

- ◆ Continue the reporting of both 'unsafe conditions' and 'positive observations' regarding dropped objects in order to share our experiences across vessels, sites and locations;
- ◆ Continue with "dropped object searches" focusing on potential dropped objects. In particular, check cranes, masts etc. on board for loose items;
- ◆ Renew emphasis on the inclusion of dropped objects during work planning, toolbox talks, before and after work inspections.

There are many dropped object incidents worthy of review. This is the 27<sup>th</sup> dropped object incident published by IMCA in the last two years – over 9% of safety incidents reported by IMCA in the last two years have been dropped object incidents. Members may wish to review some of the following incidents:

- |  |  |
|--|--|
| <a href="#">IMCA SF 29/16 - October 2016</a>   | 5. Dropped Object Awareness  |
| <a href="#">IMCA SF 23/16 - September 2016</a> | 1. Dropped Pallet During Loading of Stores   |
|  | 2. High Potential Near Miss - Dropped Object   |
|  | 3. Dropped Object Fell from Crane - Poor Communication/Lack Of Awareness/Control Of Work |
|  | 4. Dropped Object - Failure of Split Head Elbow on Bolts                                 |
|  | 5. Working at Height - Use of Wooden Handled Hammers                                     |
| <a href="#">IMCA SF 22/16 - September 2016</a> | 3. Potential dropped object during cargo offloading operations                           |
| <a href="#">IMCA SF 16/16 - June 2016</a>      | 1. Dropped object: Signage dropped from crane boom                                       |
| <a href="#">IMCA SF 14/16 - May 2016</a>       | 1. Serious incident: Pad eye fell from crane boom and struck rigger                      |
|  | 2. Potential dropped object: Inbound cargo   |
|  | 3. Dropped object: Tank dog  |
| <a href="#">IMCA SF 08/16 - April 2016</a>     | 5. Dropped object fell 12m and hit worker  |

IMCA SF 02/16 - January 2016

3. High potential near miss: Dropped object

IMCA SF 21/15 - December 2015

1. High Potential Near Miss: Safe Working Load (SWL) Plate Fell from Crane Auxiliary Block

2. Dropped Object Near Miss: Small Parts Falling From Crane Rest

IMCA SF 15/15 - October 2015

1. Dropped Objects Fatalities: Workers Struck by Fallen Loads During Lifting Operations

IMCA SF 14/15 - October 2015

5. Dropped Object Near Miss Lifting

6. Dropped Object Near Miss: ROV Wire Rope

IMCA SF 11/15 - August 2015

5. Near Miss Dropped Object: Protector Plate Drops from Crane

IMCA SF 10/15 - July 2015

1. Near Miss: Dropped Object Fell from Crane Boom

2. Dropped Object Near Miss: Antenna Parts Worked Loose and Fell to Deck

IMCA SF 06/15 - May 2015

1. Objects Dropped from Pipelay Tower

IMCA SF 02/15 - February 2015

1. Dropped Object Near Miss: Falling Crane Block

2. Dropped Object Near Misses

3. Dropped Object - Failure of Lump Hammer

IMCA SF 01/15 - January 2015

5. High Potential Dropped Object

#### 4 Fatalities – Pipe Fell from Skids

The International Association of Oil & Gas Producers (IOGP) has published the following safety alert regarding an incident in which two persons were killed when they were crushed under a pipe that fell approximately 60cm from wooden support skids.

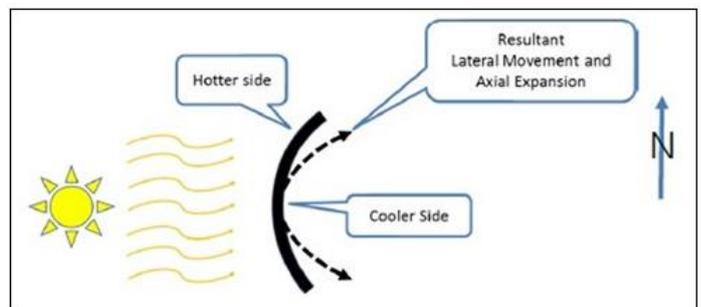
A section of 36-inch gas export line they were working under or near fell off the approximately 60cm high temporary wooden supports (skid stacks) and crushed them. The two employees, a grinder and a welder, were completing a construction weld repair at the north-eastern-most weld joint of an approximately 120m curved section of the export pipeline.



Position of pipe before falling from the two supports pictured (of eight total)

The IOGP report notes the following:

- ♦ The work permit system in place was rigorously applied to the known risks, but there was a lack of awareness of:
  - The hazard presented by temporarily suspended pipes, which constituted a dynamic load / dropped object hazard
  - The hazard of thermal expansion, differential heating, and residual pre-stress forces contributing to the lateral movement of curved pipe segments.



The full report can be found [here](#).

Members may wish to refer to the following incident (search word: *pipe*):

- ♦ **IMCA SF 08/06** – Incident 2 – *Serious injury during pipestalk rolling operation.*

## 5 First Aid Injury – Electric Shock

A member has reported an incident in which an ROV Supervisor suffered an electric shock. The incident occurred during ROV fault finding activities. The ROV Supervisor mistakenly accessed a transformer cabinet in the ROV Power Distribution Unit (PDU) room associated with a 2nd/alternate ROV system. He made contact with a conductor inside the transformer cabinet and sustained an electric shock which resulted in a burn to the hand requiring first aid treatment.



The power distribution system that was the focus of the fault finding activities was correctly isolated, inclusive of the discharge of stored capacitance energy, via the application of an HV spider earthing tool. The ROV system mistakenly accessed was not in use at the time, with breakers switched to the off position. However, it was receiving 40V DC from the Line Insulating Monitoring (LIM) system and was potentially a source of additional High Voltage stored capacitance energy.

The lessons learned:

- ◆ Personnel should not rely on administrative [safety] controls as the main form of defence;
- ◆ Permit to work and job hazard analysis are important planning tools; however, these should be used in conjunction with hard controls at every opportunity;
- ◆ Access to transformer cabinets and other HV energy sources should be restricted by way of lock out/tag out and a robust approval process;
- ◆ Familiarisation with the configuration of systems associated with safety critical equipment at a specific work site should be verified before approval to work is granted;
- ◆ The importance of clear labelling and the ability of crew to differentiate between similar sets of co-located equipment should be considered during installation of all safety critical equipment;
- ◆ System-specific isolation checklists and procedures should be applied to safety critical equipment;
- ◆ Stored energy should be released from offline equipment where operationally practicable;
- ◆ The practice of 'test before touch' should be reinforced as a formal requirement prior to accessing any electrical systems component.

Our members' recommendations and corrective actions were as follows:

- ◆ Review and update training and procedures to identify controls applicable to HV activities including:
  - ROV specific isolation checklist
  - Labelling / colour coding requirements for the ROV system
  - Cabinet lock management
  - Use of warning signs
  - Approved personal protective equipment (PPE) and hand tools
  - Rescue equipment, test before touch
  - Offline equipment isolation requirements
  - Adequacy of job hazard or risk analysis.

Members may wish to refer to the following incidents (search word: *shock*):

- ◆ [IMCA SF 15/14](#) – 440V electrical shock incident;
- ◆ [IMCA SF 04/15](#) – Electric shock incident.

Members may wish to refer to [IMCA M 217](#) – Offshore vessel high voltage safety.

## 6 Unsafe Boarding of Vessels

The Marine Safety Forum (MSF) has published the following safety alert regarding recent reports of individuals boarding vessels by means other than via the gangway.

There are a number of similarities between the incidents experienced;

- ◆ The individuals doing this are not ship's crew;
- ◆ The incidents were taking place when the vessel is either preparing to sail or is coming alongside;
- ◆ There was no gangway out at the time;
- ◆ Individuals were jumping aboard through open ship side doors.

During the most recent incident, a surveyor from a classification society boarded the vessel whilst it was still being made fast, having just come alongside. The side door had been open to facilitate monitoring of the launch and recovery of the rescue boat for survey purposes – however, the safety chain was across the space. The surveyor removed the chain and jumped from the quayside onto the ship. The aft mooring station had only just confirmed to the bridge the vessel was all fast, and the engines and thrusters were still running when the incident occurred.

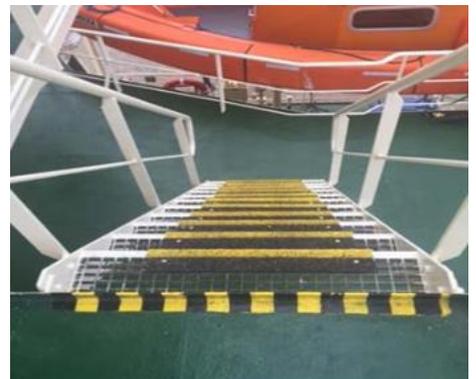


The full report can be found [here](#). Members may wish to refer to the following incident (search word: *boarding*):

- ◆ [IMCA SF 04/16](#) – Incident 1 – *Near miss: non-fatal man overboard incident.*

## 7 Injury After Crewman Fell Downstairs On External Stairway

The MSF has published the following safety alert regarding an incident in which a crewman fell down the stairs and was injured. The incident occurred following recovery of the vessel's daughter craft (DC) when the crewman had informed the Officers in the bridge that the small boat had been recovered and safely stowed. He left the bridge and was making his way down the external stairway to the boat deck when he slipped and fell down the stairs to the deck below. He broke his arm and was transferred from the vessel via helicopter to hospital.



Investigation revealed the following:

- ◆ The stairs were in good condition and were fitted with grips which were in good condition;
- ◆ The injured person was wearing all appropriate PPE, including his safety footwear, which was in good condition;
- ◆ Weather: cloudy, wind force 3 knots, sea height 1-2m, although the IP stated the vessel rolled just prior to his fall;
- ◆ The injured person stated he was using the trailing hand technique whilst going down the stairs, although he had a radio in his other hand;
- ◆ There were no radio sling/holsters on board;
- ◆ The incident occurred after the original work task had been completed. This was identified as a trend in this particular vessel owners fleet.

The full report can be found [here](#). Members may wish to refer to the following incident (search words: *stairs, fell*):

- ◆ [IMCA SF 20/15](#) – Incident 1 – *Recent slips, trips and falls involving stairs.*