

IMCA Safety Flash 08/16

April 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) 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 webmaster@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

The five incidents in this safety flash cover a fatality from a release of stored pressure, two finger injuries, and two cases of dropped objects – only one of which was a near miss. In all five cases, weak safety culture lay at the heart of the incident, most particularly, failure to appropriately identify, and then control, risk.

1 Fatality – Stored Pressure Release

An incident has been brought to IMCA's attention in which a crewman died as a result of a stored pressure release. The incident occurred when a two man team was removing a Techlok (clamp hub connector) to conduct repair work on a leak found during testing. The leak was identified at the hub connector upstream of the manual valve on the top deck of the module. The clamp released under high pressure and struck one of the crewman, causing fatal injuries.



The following points were noted:

- ◆ The Techlok clamp removal was done using an incorrect method;
- ◆ The Permit to Work was issued with conflicting isolation requirements – there was substandard identification of conflicting work scopes;
- ◆ The compressor isolation certificate number was not included in the test log sheet within the procedure;
- ◆ The Permit to Work recognized the need for electrical Isolations but not mechanical Isolations;
- ◆ Permits to Work for leak testing and leak rectification covered multiple systems. They become generic by nature and reduced the ability to identify task specific hazards;
- ◆ No bleed point was identified between primary and secondary isolation valves;

- ◆ The team did not adequately follow existing Leak Test procedures. Valve line-out was not confirmed during second leak test;
- ◆ Some members of the crew were inexperienced in the task and were unaware of their individual roles and responsibilities;
- ◆ There was inadequate shift handover; electronic handovers were used rather than face to face or written handovers;
- ◆ The agreed procedure and Permit to Work were deviated from. The Project Manager was not aware of change and there was no Management of Change undertaken;
- ◆ Actions implemented following a previous incident were not enforced for any significant period;
- ◆ There was a poor incident reporting and investigation culture.

In conclusion, the following points were re-emphasised:

- ◆ Ensure that toolbox talks take place when appropriate;
- ◆ Ensure that all crew are fully familiar with Permits to Work and Isolations and Barriers;
- ◆ Ensure there is complete understanding of the job and all the risks involved before starting work;
- ◆ Stop The Job and inform a supervisor if conditions change;
- ◆ Always intervene when you see an unsafe act or condition;
- ◆ Never remove safety isolation/equipment/barriers;
- ◆ Never perform tasks for which you are not trained and competent.

Members may wish to refer to the following incidents (search words: *stored*)

- ◆ [IMCA SF 14/14](#) – Incident 1 – *High potential stored energy incident: inner buoyancy module clamp failure during removal*

2 LTI Finger Injury Whilst Working in Engine Room

A member has reported an incident in which a fitter was injured in the engine room while removing a leaking pipe for repairs. The incident occurred when a minor leak was found at the T-junction of the sea water inlet to the fresh water generator. The location of the leak was close to the bulkhead, where welding repair could not be done, hence the pipe had to be removed for permanent repairs.

A toolbox talk was conducted before starting the job by the second engineer and crew, who were using appropriate personal protective equipment (PPE) for the task. As per the plan, the trainee wiper was to hold the safety rope and lower the pipe as instructed and the 4th engineer would align the pipe to pass through the opening. A fitter was stationed at the lower end on the deck below. After the flanges were disconnected and while lowering the pipe, the trainee wiper's hand slipped from the rope causing sudden drop of the pipe, jamming the fitter's left hand little finger between the motor and the lower flange of the pipe. This caused a severe crush injury with a deep laceration. The fitter was declared unfit for duty and was signed off.



The pipe and the opening through which it had to be lowered. Two helpers were at this location. This was one deck above the fitter's location



The pipe seen from the lower deck – where the fitter was working



The finger got crushed between the lower end of the pipe and the motor

Our member's investigation revealed the following:

- ◆ Immediate cause:
 - improper use of equipment – safety rope not suitable for the purpose;
- ◆ Causal factor (management, competence or individual factor):
 - inadequate resources – additional resources not stationed in place
 - inadequate tools/equipment
 - ineffective toolbox meeting
 - inadequate supervision
- ◆ ROOT CAUSE (Inadequate system, standard or compliance):
 - Risk was considered to be tolerable – the work party considered the work to be safe. There was inadequate understanding of the risks involved.

The following preventative actions were taken:

- ◆ Ensure more effective toolbox meetings and proper understanding of risks and take actions to prevent injuries/incidents;
- ◆ A more thorough risk assessment is required for such tasks;
- ◆ Improve existing work methods – increase awareness of the problems that can occur when working in close proximity of parts being lifted or moved;
- ◆ Supervisory personnel should take extra precautions and ensure they supervise the area and job well to include everything that can possibly go wrong;

- ◆ Ensure good communication such as use of ultra-high frequency (UHF) radio, particularly when inter-dependent teams are working in different locations and are not visible to one another or cannot hear each other properly due to background noise;
- ◆ Use of correct tools/equipment for the job;
- ◆ Ensure adequate resources stationed where required.

Crushed fingers are a depressingly common occurrence even today in IMCA member operations. Any number of them can be found amongst the safety flashes of the last 10 years. Members may wish to refer to the following incident (search word: *crush*):

- ◆ [IMCA SF 04/16](#) – Incident 4 – *Finger injury during maintenance work –restricted work case.*

Members should also be aware that IMCA has a **pocket safety card** on this topic:

- ◆ [IMCA SPC 08](#) – *Watch your hands – you’ve only got one set.*

3 Serious Hand Injury: Worker Injured by Machinery

The UK Health and Safety Executive (HSE) has reported that a company was fined after an employee suffered serious injury when his hand was caught and dragged into machinery. The employee was part of a maintenance crew rethreading broken plastic sheeting into a pinch roll, when his gloved hand was caught and dragged into the rollers. The first finger on his right hand was so badly damaged it had to be surgically removed below the knuckle.

An investigation by the UK HSE into the incident, which occurred in 2012, found that even though the company had identified the risks, there was still inadequate guarding of the machinery.

Members may wish to review the following similar incidents (search words: *finger, guard*):

- ◆ [IMCA SF 09/07](#) – Incident 1 – *Pinch points on winches – hand safety;*
- ◆ [IMCA SF 11/12](#) – Incident 1 – *LTI: hand injury [using an improperly guarded vertical band saw].*

Members may also wish to review the following safety poster;

- ◆ [IMCA SPP11 – Hand safety](#)

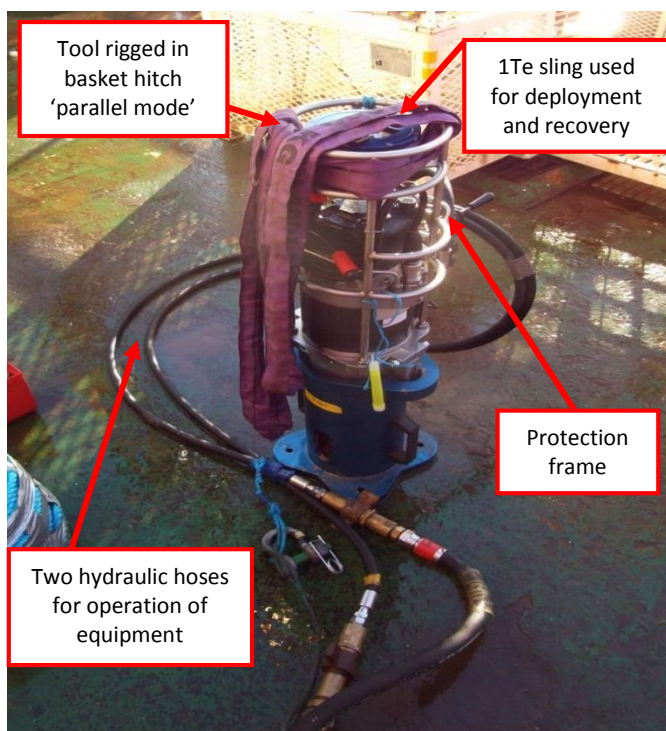
4 Near Miss: Dropped Torque Tool

A member has reported an incident in which a torque tool, weighing 55 kg, was dropped back into the sea during recovery after use by divers, who were working below. The incident occurred after the tool had been lowered to the seabed for valve functioning work by the divers. The deployment and recovery of the torque tool was conducted using the small crane (cherry picker) in a tandem lift with the winch and power sheave for the hydraulic hoses. These remained attached throughout this process.

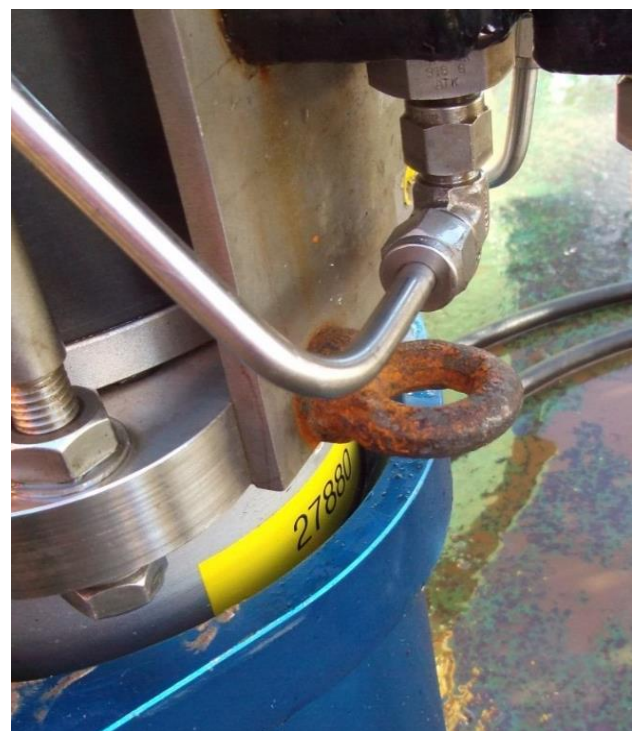
The torque tool had various items retrofitted to it by the supplier, including a protection frame and two 25mm lifting eyebolts. The eyebolts were poorly located, impacting heavily on the component parts and only one was certified for lifting. The tool was provided to the vessel without rigging or guidance as to how it should be lifted.

The lift was incorrectly categorised as 'straightforward'. It was covered under the generic toolbox talk and no lift plan was created. The rigging arrangement decided upon was a 'basket hitch lift' using a 1Te webbing sling which was 'snaked' through the uncertified protection frame. This rigging arrangement was not communicated to the diver, who assumed the webbing sling was choked on itself. He re-applied the sling using a single lifting eye only.

On recovery, as the torque tool cleared the 'splash zone', the webbing sling released and the tool fell back into the water. A 'freefall' of the tool was only prevented by the attached hydraulic hoses, through which the tool was successfully recovered to deck.



Showing rigging arrangement



Showing poor positioning of eyebolts

Our member noted the following:

- ◆ Risk assessment was inadequate;
- ◆ There was a failure to comply with existing company lifting procedures and guidance. This led to incorrect lift categorisation and a failure to create a lift plan;
- ◆ Manuals from the supplier were out of date and contained no information or guidance on how the tool was to be rigged for subsea deployment;

- ◆ The torque tool was deficient in suitable and certified lifting points, but was accepted and presented for use on board the vessel. These deficiencies were sufficient for the tool to have been rejected at the time of inspection;
- ◆ A diver and unprotected subsea assets were present within the potential DROPS cone radius of 36m. Safe distances and locations for divers should be identified and complied with before lifting operations start;
- ◆ Rigging and lifting certification is not currently a core requirement for divers at this company. A review of diver related lifting operations training is being conducted to establish the rigging and lifting competency of those involved in this process.

Our member concluded the following:

- ◆ Immediate cause:
 - The incorrect re-attachment of the rigging subsea. This was a human error brought about by various contributory factors, including the failure to communicate the rigging arrangement to the diver
 - The torque tool was supplied to the vessel with one certified lifting point and no suitable rigging nor lift plan defining how the deployment and recovery should be conducted.

Our member recommended:

- ◆ A review of operations to identify similar circumstances where equipment is being lifting using uncertified lifting points or where there is a failure to comply with existing lifting procedures;
- ◆ Ensuring that suitable lifting points and lift plans are available;
- ◆ Ensuring that appropriate guidelines, procedures and information are communicated to all personnel involved.

Members may wish to refer to the following incidents (search words: *subsea, lifting, near miss, cone*):

- ◆ [IMCA SF 12/11](#) – Incident 4 – *Near miss: diver working under suspended load.*

Please also consult [IMCA SEL 019](#) – *Guidelines for lifting operations.*

5 Dropped Object Fell 12m and Hit Worker

The International Association of Oil & Gas Producers (IOGP) has published an incident in which an object fell 12m and struck a glancing blow to the jaw/neck area of a worker below. The incident occurred when a drilling contractor was tripping pipe out of the hole and a link pin came loose from the hook, falling 12m to the deck below. The pin bounced and struck a glancing blow to the left jaw/neck area of a worker. The link pin was 2.5cm x 12.7cm and weighed 0.6 kg.

Further information is available at http://safetyzone.iogp.org/SafetyAlerts/alerts/Detail.asp?alert_id=271