

IMCA Safety Flash 14/14

August 2014

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

I High Potential Stored Energy Incident: Inner Buoyancy Module Clamp Failure During Removal

A member has reported an incident in which a clamp failed, allowing four objects to be ejected in various directions within the worksite. One of the objects struck a rigger on the back. The incident occurred during riser recovery using a Vertical Lay System (VLS). As part of the riser recovery process various ancillary items were removed from the riser prior to it being spooled through a tensioner system to a storage reel. Among the items to be removed were riser buoyancy modules which consist of two outer shells and an inner clamp.

During this recovery process, the incident occurred during removal of the final inner clamp. As a clamp securing strap was being cut, it failed unexpectedly causing the four inner parts of the clamp to fly off in various directions.

Fortunately there were no significant injuries; however there was clearly potential for two or more persons to have been seriously injured.



Figure 1: typical set up immediately prior to cutting band securing inner clamp



Figure 2: one of four blocks that make up inner clamp, each approx. 20cm x 25cm x 35cm and weight circa 6 kg.



Figure 3: screen capture from a camera shows the blocks being ejected from the clamp arrangement on the riser. (yellow circles indicate the moving blocks)

Our members' on-going investigation has thus far revealed the following:

- ◆ Recent changes to the methodology for removing the clamp were not subject to a Management of Change process;
- ◆ These changes were not seen as significant enough to warrant the Management of Change process; however the changes introduced hazards which had not been risk assessed;
- ◆ The sling fitted below the clamp was over tensioned causing an upward force to be applied and ultimately the clamp to fail unexpectedly;
- ◆ The change to use the sling to stop the clamp falling to deck once cut was perceived as an improvement but the potential risks introduced by this change were not considered.

Our member noted that although this task (removing buoyancy modules) had been undertaken without incident hundreds of times during this year alone, the incident acted as a reminder of the need to guard against complacency, remain vigilant at all times and remain aware of our surroundings.

If there are any doubts about the operation take the time to stop work and reassess the situation. Any changes to procedures should be subject to the Management of Change process regardless of how minor they may initially appear.

Our member took the following actions:

- ◆ Reassessed the availability of task procedures and risk assessments;
- ◆ Checked on how well crews understood the above and how they reflect the way the job is actually being carried out;
- ◆ Ensured that when changes are made to improve how a task is carried, that all possible negative effects are fully considered;
- ◆ Ensured that during development of new procedures, adequate consideration is given to getting input from end users.

Members may wish to refer to the following similar incidents involving the sudden and unplanned release of stored energy (key words: *released, stored, energy*):

- ◆ [IMCA SF 15/08](#) – Incident 1: Crew member injured during ROV maintenance;
- ◆ [IMCA SF 17/08](#) – Incident 3: Stored energy – injury sustained whilst removing metal straps;
- ◆ [IMCA SF 07/14](#) – Incident 2: Injury caused by movement of wire rope under tension.

2 Near Miss: Incorrect Length Retaining Screws Fitted on Divers Helmet

A member has reported a case of incorrect length retaining screws being found fitted to an Ultrajewel 601 diver's helmet, exhaust valve cover assembly. This was discovered by vessel crew carrying out maintenance on a newly received I7C Ultrajewel 601 helmet. The jewel cover (Item 17, Part Number: DM022), retaining screws (Item 18, Part Number: FB240) had been cut down in length and as a result did not give the required thread engagement. The correct length of the screw was 35mm as indicated within the part description column.

Following the incident an inspection of the screws revealed that three of the four screws fitted had been cut back to varying lengths. The loss of thread certainly severely reduced the amount of thread available to satisfactorily clamp the exhaust valve cover assembly together. Loosening of the screws during use and the eventual separation of the jewel cover assembly could have caused a serious incident.

It is yet unknown how modified screws found their way into this location. All technicians maintaining diving equipment should be trained and competent personnel. Any technician who regularly maintains diving equipment will understand fully the importance of the jewel exhaust valve integrity during operation and will also be very familiar with the required grip range of the screws involved.



Figure 1: showing screws highlighted in red



Figure 2: screws of varying lengths

Our member noted the following lessons:

- ◆ Only use correct screws when maintaining life support equipment and as supplied by the equipment manufacturer;
- ◆ Ensure that any held stock of the screw is adequately controlled to prevent migration into other stocked item locations and that storage bins or bags are clearly marked with the manufacturer's part number;
- ◆ Only trained and competent personnel should be maintaining life support equipment;
- ◆ Never modify manufacturer supplied parts.

Members may wish to refer to the following similar incidents (key words: *helmet, fitting, incorrect, threads, modified*):

- ◆ [IMCA SF 11/05](#) – Incident 2: *Near-miss during diving operations*;
- ◆ [IMCA SF 02/07](#) – Incident 3: *Kirby Morgan safety bulletin – helmet shell repair caution* and incident 4 *divex hse alert – valve seat retainer* – (both pertaining to inappropriate modification of divers helmets).

3 LTI: Trip Incident

A member has reported an incident in which a crew member fell over a trip hazard on deck and broke both elbows as a result. The incident occurred on a vessel in dock. The injured person was walking towards the stern area to assist the other team members with the next task. En route, he attempted to step over a cargo strap. His foot caught on the strap; he tripped, lost balance and fell forwards, hitting the deck. He instinctively raised his arms in an attempt to lessen the impact of the fall, which resulted in him sustaining two broken elbows.

Our members' investigation revealed the following:

- ◆ There were no barriers in place or marker tape to highlight the hazard. Additionally, there was a safe route around the hazard which could have been taken;
- ◆ Although trip hazards, generally, were highlighted in the Risk Assessment and in the Toolbox Talk, this hazard was not highlighted individually;
- ◆ Notwithstanding the lack of barriers and with a safe alternative route available, this incident included behavioural based safety characteristics, with two crew members choosing to step over the cargo strap, rather than take the safe route. A second crew member stepped over the strap, just before the injured person did, and was uninjured. Lack of an accident/incident does not demonstrate adequate control.

Our member noted the following lessons:

- ◆ There were numerous failures, omissions and deliberate actions that led to the incident:
 - Inadequate planning/risk assessment – without a cordon or other appropriate barriers/markers, this hazard presented an obvious risk, which was not specifically identified. Failure to adequately identify all hazards can result in accidents
 - Inadequate safety controls/warning signs
 - Lack of awareness/perception of risk
 - Lack of attention/due care/poor work practice
 - Poor decision-making/judgement
 - Lack of adequate Toolbox Talk, Risk Assessment and Hazard Identification.

Crews should remember that even hazards that seem to present a trivial risk can result in serious injury, unless they are adequately controlled.



Figure: showing deck and cargo strap

Members may wish to refer to the following similar incident (key words: *tripped, deck*):

- ◆ [IMCA SF 04/09](#) – Incident 2: *Hand injury caused when worker tripped over hazard.*

4 LTI: Trip Incident during Routine Task

A member reported an incident which someone tripped over, fell and was injured whilst working on the deck of a vessel. The incident occurred during work on the rear skid of the backfill plough on the starboard side of the vessel. The injured person required something to kneel on. He proceeded to walk forward on the deck from the aft of the vessel towards the deck skip. He then tripped over a 20Te pad eye, lost his balance and fell over, landing on his right shoulder and arm. The injured person was taken to the vessel hospital; the vessel returned to port to allow the injured person to be transferred to a shore-side hospital for further treatment.

Our member noted that this was the second serious (LTI level) trip incident that had occurred on its vessels in recent weeks, and that there had been an alarming rise in incidents causing injury to personnel engaged in *normal routine tasks*.

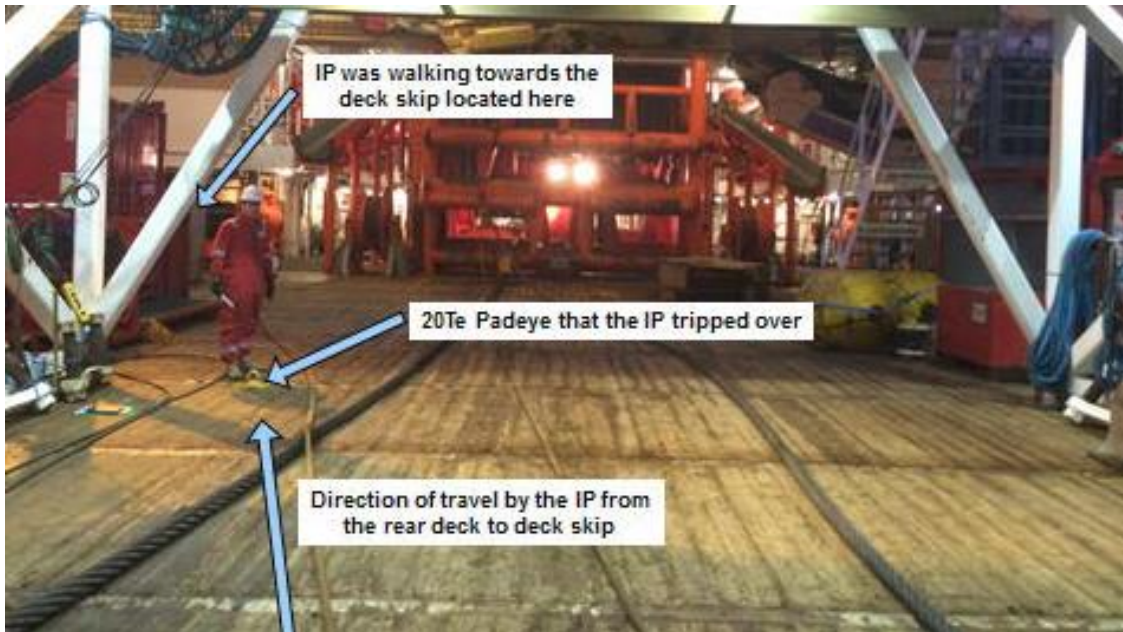


Figure: showing deck where injured person tripped

Our member's investigation revealed the following:

- ◆ It has been identified that the pad eye was not actually required until the next interim mobilisation, and hence the incident could have been prevented;
- ◆ Inadequate planning/risk assessment – without a cordon or other appropriate barriers/markers, this hazard presented an obvious risk, which was not specifically identified. Failure to adequately identify all hazards can result in accidents;
- ◆ Inadequate safety controls/warning signs;
- ◆ Lack of awareness/perception of risk;
- ◆ Lack of attention/due care/poor work practice.

Our member drew the following conclusions:

- ◆ In this instance there was a lapse of attention while doing something completely routine which had been done many times before, except that this time, the lapse had consequences;
- ◆ The key lesson is that we can **never be complacent**; otherwise, the ever present hazards on our worksites will catch us out;
- ◆ It is important that we all take personal responsibility for our own safety and ensure that we do not put ourselves or others 'in the line of fire';
- ◆ Active supervision and intervention must be at the forefront of our daily activities;
- ◆ It is essential that everyone:
 - Remains pro-active and maintains a clear focus on hazard identification and accident prevention
 - Uses their own ability to be aware of the situation round about them and look where we place our feet and where we put our hands;
- ◆ The importance of focus on 'routine work' – where many incidents are occurring.

Members may wish to refer to the following similar incident (key words: *tripped, deck*)

- ◆ [IMCA SF 04/09](#) – Incident: 2 *Hand injury caused when worker tripped over hazard.*

5 High Potential Dropped Object Incident

A member reported an incident in which tools were dropped from height. The incident occurred during pick up of engineers from a wind turbine tower. A wind farm workboat was 'pushed up' against a turbine to collect two technicians, who were descending the tower. As they did so, a ratchet and two sockets fell from the work pouch of one of the technicians, and landed on the on the bow/deck of the vessel. The ratchet – weighing 0.5kg – and sockets fell approximately 15m and landed centimetres from the crewman on board the vessel. There were no injuries and the technician then continued his descent down the ladder to board the vessel. All persons were wearing appropriate personal protective equipment (PPE).

Our member notes the following:

- ◆ The technician was carrying tools unsecured in his pocket and subsequently the tools fell out of his pocket as he began to make his descent;
- ◆ The technician should not have been carrying tools on his person whilst descending the ladder but instead should have put all tools in the bags provided to be winched up or down by the crane;
- ◆ There had been no checks made by the technicians to establish whether or not tools were being carried about their person before descending the ladder on the wind turbine tower.

Use of the DROPS calculator (see www.dropsonline.org) suggested that had these falling objects hit the crewman, it would have resulted in a major injury and hospitalisation.

Our member recommended that 'buddy checks' are made to check for loose objects and correct use of PPE before technicians disembark onto vessels.

Members may wish to refer to the following incident where someone lost his life because he carried tools and equipment whilst using a vertical ladder:

- ◆ [IMCA SF 02/14](#) – Incident 2: *Fatality in ballast water tank – working at height in a confined space.*

Members may wish to encourage circulation of the following safety promotional material:

- ◆ [IMCA SPP 04](#) – *Avoiding dropped objects;*
- ◆ [IMCA SPC 12](#) – *Avoiding dropped objects.*

6 Disposal of Pyrotechnics

The Marine Safety Forum has published the following safety flash regarding an incident in which a discarded marine flare ignited at a depot where ship's garbage is sorted out. Fortunately on this occasion there was no injury to personnel involved but some damage was done to the conveyor belt.

Members are reminded that flares and other special wastes should not be disposed of within the ship's waste receptacles provided by the port. Disposal of Ship's flares or any Marine pyrotechnic should only be arranged through an approved provider for such services.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-14.32.pdf.

Members may wish to refer to the following similar incident (key words: *pyrotechnics*)

- ◆ [IMCA SF 13/12](#) Incident 4: *LTI caused by inadvertent activation of expired line throwing device.*

7 Lifting and Rigging Plans

The Australian National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) published the following safety flash regarding the importance of lifting and rigging plans in safe lifting. Recent NOPSEMA investigations of dangerous occurrences during non-routine lifting and rigging activities, which resulted in dropped objects and failed rigging equipment, have identified a trend in the absence of effective lifting and/or rigging plans for an operation or partial completion of a plan which was considered ineffective.

Members may wish to refer to the following similar incidents in which inadequate lift planning was a contributory factor: (key words *lift, plan, planning*):

- ◆ [IMCA SF 17/08](#) – Incident 4: *Failure of webbing strop during lifting operations*;
- ◆ [IMCA SF 12/11](#) – Incident 4: *Near miss: diver working under suspended load*;
- ◆ [IMCA SF 10/13](#) – Incident 1: *High potential near miss – lifting equipment failure*.

Members are encouraged to reiterate the importance of lifting planning to their personnel. Further information on lifting and lift plans can be found from [IMCA SEL 019](#) – *Guidelines for lifting operations*.

The safety flash can be downloaded from www.nopsema.gov.au/assets/alert/Safety-Alert-59-Lifting-and-Rigging-Plans.pdf.