

IMCA Safety Flash 07/14

May 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 First Aid Injury: Thermos Cup Exploded After being in Hyperbaric Environment

A member has reported an incident in which a brushed aluminium ‘Thermos’ style cup exploded after being taken out of a hyperbaric environment. The incident occurred when the cup – which had been in Sat at -256 fsw with the diver – was placed in the medical airlock and brought to the surface. Once at surface pressure the Assistant Life Support Technician (ALST) removed the cup and placed it under his arm, whereupon a violent separation of the cup from its plastic base occurred. The ALST suffered minor bruising and the cup was destroyed. Immediate medical attention was given, and a proper and timely notification to the appropriate authorities was made. The remains of the cup were retained for investigation.

Our members’ investigation noted that the diver had considered that there was no risk of a pressure differential as the interface between the metal and the plastic base on the cup was of insufficient strength to allow a pressure differential to form.

Our member took the following actions:

- ◆ Advised divers in saturation what had happened;
- ◆ Asked them to check carefully for additional objects of a potentially hazardous nature.

Our member made the following recommendations:

- ◆ Allow this style of cup or vessel in the saturation chambers only if drilled to prevent pressure build up;
- ◆ Add non-venting thermal vessels to the list of items forbidden for use in saturation chambers.





Figures: Showing thermos cup after explosion

Members may wish to refer to the following similar incident:

- ◆ IMCA SF 08/06 – Incident 3: *Trapped Pressure Release Incident.*

2 Hand Injury during Retrieval of Personal Protective Equipment (PPE) Stored Inside a Compressor Unit

An incident has come to IMCA's attention in which a crewman suffered a hand injury caused by a slamming door on a compressor unit. The incident occurred when a contractor worker took off his PPE and kept it inside the compressor whilst visiting the lavatory. When he returned and retrieved his PPE from the inside of the compressor unit, a part of the door slammed due to high wind and caught his hand, resulting in an injury to his index finger. The injured person was rushed to hospital where he was received two stitches.



Figures: Compressor unit with PPE and flammable materials inappropriately stored inside

Investigation findings noted the following:

- ◆ Using equipment enclosures as temporary storage can potentially lead to harm of people and damage to equipment;
- ◆ The worker placed his PPE inside the compressor unit. The inside of the compressor unit was used by the crew habitually as a storage area for PPE;
- ◆ There were other flammable materials seen stored inside the compressor unit, which could potentially lead to major fire and explosion;
- ◆ The incident was not reported in a timely way;
- ◆ There was no evidence of new risk assessment being conducted prior to recommencing of the work, and PPE was seen being stored inside the compressor unit the following day – the lessons were not learnt by the crew.

The following actions were taken:

- ◆ Ensure all incidents are reported immediately;

- ◆ Ensure no materials are stored inside any operational machinery;
- ◆ Ensure PPEs/other materials are stored in designated area only.

3 Crane Wire Rope Grip Incorrectly Fitted

A near miss incident has come to IMCA's attention in which a crane wire rope termination was found to be incorrectly fitted. Before starting work at a land-based site, a 30 tonne mobile crane was inspected, and a rope clamp (bulldog) attached to the hoist ropes 'dead end' was found to be incorrectly fitted causing crushing and damage to the 'live end' of the wire rope (the part of the wire rope that takes the load strain).

The incorrect selection or fitting of wire rope grips drastically reduces the efficiency of the wire rope terminations and can cause the wire rope to slip through the grips, potentially leading to the harm of people and damage to the equipment.

The bridge of the clamp must always be fitted on the working part (live end) of the rope, and the U bolt on the rope tail (dead end) of the rope.

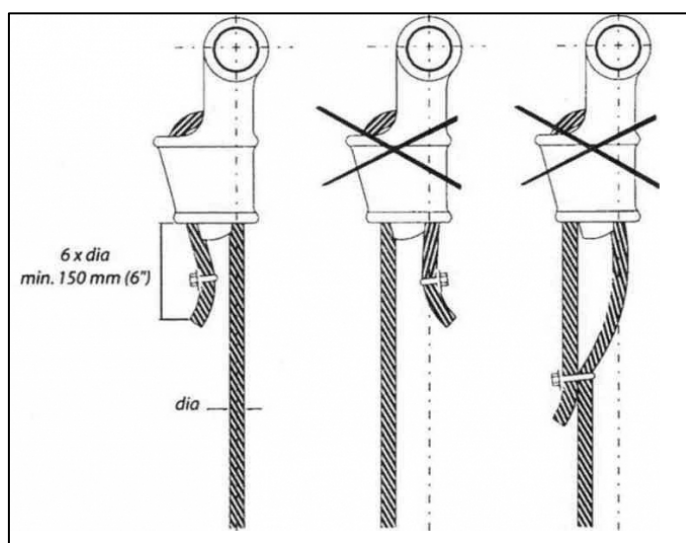


Figure: wedge socket showing right and wrong method of termination

For a wedge Socket, the wire rope grip should NOT be connected to the live rope. It should only be connected to the dead end of the rope. Any clamping at all, bridge or U bolt, to the live end of a rope terminated with a wedge socket can cause damage and crushing and is not recommended.



Figure: Showing incorrect fitting of wire rope grips

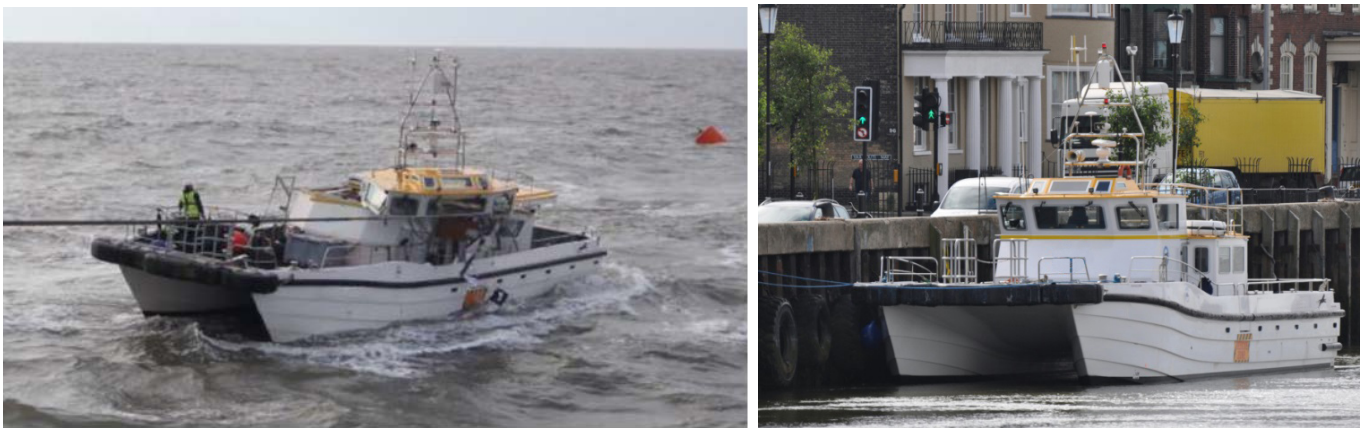
The following lessons were learnt:

- ◆ Ensure correct type of wire rope grip is selected when terminating wire ropes;
- ◆ Ensure wire rope grips are correctly fitted;
- ◆ Watch out for signs that may indicate broken wires; e.g. reduction in rope diameter, corrosion or rope deformation.

Members may also wish to refer to [IMCA SEL 019](#) – *Guidelines for lifting operations*.

4 Crew Transfer Vessel in Collision with Anchor Wire

A member has reported an incident in which an offshore wind farm crew transfer vessel (CTV) collided with an anchor wire under tension. The incident occurred when the CTV approached the starboard side boat landing of a cable lay barge. Difficulty was encountered in positioning the vessel onto the boat landing, and at the same time, a pre-alarm on the port engine sounded (indicating overheating exhaust gasses). Owing to this alarm and the subsequent automatic intervention of the electronic engine management system, the CTV lost part of its propulsion power. At this point, the vessel was taken by the current towards the anchor wire. Due to sea conditions causing the CTV to move, the wire acted as a saw and caused significant damage to the wheelhouse. After this the vessel came loose of the anchor wire and the current took the CTV further away. There were no injuries.



Figures: (L) Showing CTV caught by wire under tension, and damage to wheelhouse (R) Showing vessel undamaged

During our members' investigation, the following points were noted:

- ◆ A similar incident had happened with the same CTV earlier in the year;
- ◆ Crew transfers are executed so often that they can be considered as a routine activity ('taxi') leading to risks being overlooked and complacency setting in;
- ◆ Crew transfer is an important activity and should be formally risk assessed on each project since environmental conditions differ for each project;
- ◆ Reporting, communicating and follow-up of incidents and near misses is important since this incident would have been prevented had the previous incident been properly reported, correctly communicated and follow-up had been in place and adhered to.

Members may wish to refer to the following similar incidents:

- ◆ The following safety flashes refer to incidents involving *the crew transfer vessels* used in the offshore renewables industry:
 - [IMCA SF 06/13](#) – Incident 1: *Crew transfer vessel trapped under a boat landing*
 - [IMCA SF 12/13](#) – Incident 3: *Incidents of failure of jet drives on wind farm service vessels*, and Incident 4: *Wind farm service vessel in collision with wind turbine foundation*
 - [IMCA SF 16/13](#) – Incident 4: *LTI Crewman injured foot during offshore renewables mooring operation*
 - [IMCA SF 06/14](#) – Incident 2: *Near Miss: Strong Sun Glare Contributes to Heavy Impact on Boat Landing*, Incident 3: *Near Miss Incidents during Personnel Transfer to Offshore Renewable Energy Installations* and Incident 4: *Navigational Near Miss in Restricted Visibility*.
- ◆ The following safety flashes refer to incidents where *complacency* was identified as a factor:
 - [IMCA SF 02/00](#) – Incident 5: *Damage to main hoist rope on Liebherr 1080/1 crane*

- IMCA SF 07/05 – Incident 1: ROV free-fall incident
- IMCA SF 11/12 – Incident 1: LTI: Hand Injury.

5 Injury Caused by Movement of Wire Rope under Tension

A member has reported an incident in which someone was injured by an anchor wire that skidded off unexpectedly off a flatbed trailer. The incident occurred on a beach during cable installation operations, when personnel were connecting midline buoys to an anchor wire. The injured person sustained a broken foot but the incident had the potential to be a fatality.



Figure: Showing scene of incident

Our members' investigation revealed one of the root causes was lack of knowledge of what was happening at the worksite: persons involved were not aware of the fact that tension is still in a wire even when hanging slack and lying on the beach for a considerable length (700 meters).

The lesson learnt is that it is in the nature of a wire rope that there will always be stored or residual energy in a length of it. This introduces a range of potential safety issues including manual handling and unexpected release of energy when handling the wire ropes. These issues should be taken into account in job planning, tool box talk and risk assessment before the start of the job.

Members may wish to refer to the following similar incidents (key words: *wire rope, tension, stored energy*):

- ◆ IMCA SF 05/03 – Incident 2: *Fatality During Cable-Pulling Operations*;
- ◆ IMCA SF 17/08 – Incident 3: *Stored Energy – Injury Sustained Whilst Removing Metal Strap*;
- ◆ IMCA SF 13/13 – Incident 3: *Crewman Injured Whilst Changing Out Crane Wire*.

6 Master Link and Sub-Link Failures on Lifting Equipment

The Marine Safety Forum has published the following safety flash regarding two separate incidents in which there were failures of master links and sub-links on lifting slings. Although no personnel were injured, the potential severity of such incidents was very serious.

The safety flash can be downloaded from: www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-14.08.pdf.

Members may wish to refer to the following similar incident (key words: *master, link, failure*):

- ◆ IMCA SF 12/11 – Incident 1: *Offshore Tank Container Rigging Failure*.