

IMCA Safety Flash 16/16

June 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 following five incidents all deal with equipment failure of one kind or another. The first incident relates to another instance of parts falling from a crane – in this case, a steel sign. This is not the first time this has happened and members may wish to review this and other similar incidents.

The second incident covers high potential failure of the structure of a small boat during surveying operations. The third incident informs members about the risks of metal corrosion in older equipment.

The fourth (a near miss) relates to the discovery of missing parts in subsea lifting and rigging equipment. The fifth relates to the risk of fires from sub-standard phone charging equipment.

1 Dropped Object: Signage Dropped From Crane Boom

A member has reported an incident in which a piece of metal fell from a crane boom. The incident occurred on a vessel whilst alongside during the testing of the luffing motors' braking system on the main crane. During this testing the crane boom made an uncontrolled descent into its crutch, resulting in a 60 kg steel sign falling 15m down to the deck.



Investigation revealed that the sign was fixed by 4 x stitch welds, of which three were completely rusted away.

The following immediate actions were taken:

- ◆ All Stop: The hydraulic tech contacted bridge and chief engineer to report the incident and stop associated operations;
- ◆ The area beneath the crane (starboard dock wall, main deck passageway) was barriered off;

- ◆ Crew working nearby were asked to make safe any work and leave the job;
- ◆ A dropped object inspection of the crane boom took place to search for further loose items;
- ◆ A dropped object inspection on the starboard dock wall and fly jib platform was performed;
- ◆ A formal investigation began.

Initial recommendations – subject to completion of investigation – were:

- ◆ Review standard operating procedures for testing the brakes of the cranes;
- ◆ Review the associated Permit to Work requirements (e.g. further consideration of what areas nearby should be barriered off);

Thorough inspection of all elements and parts of the crane (main, auxiliary and signage) before further testing and use.

Members will be aware that in recent times there have been a number of incidents reported in which objects have fallen from the crane itself. This incident forms yet another timely reminder to redouble our efforts to check areas that might otherwise be overlooked in the search for potential dropped objects.

Members may wish to refer to the following incidents (search words: *crane, dropped*):

- ◆ [IMCA SF 04/11](#) – Incident 1 – *Crane boom dropped object*;
- ◆ [IMCA SF 15/14](#) – Incident 1 – *Dropped object near miss – unsecured plastic box fell from load being Lifted by mobile crane*;
- ◆ [IMCA SF 02/15](#) – Incident 1 – *Dropped object near miss: falling crane block*;
- ◆ [IMCA SF 10/15](#) – Incident 1 – *Near miss: dropped object fell from crane boom*;
- ◆ [IMCA SF 21/15](#) – Incident 1 – *High potential near miss: safe working load (swl) plate fell from crane auxiliary block*;
- ◆ [IMCA SF 21/15](#) – Incident 2 – *Dropped object near miss: small parts falling from crane rest*.

Members are also reminded of [IMCA SEL 019](#) – *Guidelines for lifting operations*.

2 High Potential Near Miss: Damage to Small Boat during Offshore Survey Operations

A member has reported an incident in which a small boat was damaged during offshore survey operations. The incident occurred during offshore transit to port. The boat experienced a ‘following wave’ that overtook it, causing the boat to drop into the trough of the next wave, causing the foredeck to partially detach from the hull.

The Helmsman immediately stopped the boat and turned the stern into the waves to reduce any further water ingress. The crew activated the ‘emergency response plan’ and performed an immediate inspection of the damage. Due to the potential for further water ingress, the Helmsman altered course and the boat was routed to the nearest port in liaison with the local coastguard.



Our member's investigation revealed the following:

- ◆ The foredeck and the hull section was insufficiently bonded together when the boat was built in 2011. A detailed analysis indicated that:
 - Less than 10% of the bonding surfaces showed signs of aggravated rupture by splintering or de-lamination, indicating that they were incorrectly bonded at build stage
 - The GRP (glass-reinforced plastic or fibre-glass) bonding was likely to have been incorrectly performed due to the restricted space available in the foredeck
 - The vessel had undergone a competent and third party inspection that had concluded that no structural defects were identified in the GRP construction.

The **cause** of the incident was found to be a material failure of the hull as a result of insufficient bonding during the build phase of the vessel. Whilst the weather, as with most marine operations, was an influence, this was not a major contributing factor given that hull designs of this nature should be able to operate under the experienced conditions.

Our member took the following actions:

- ◆ Plan and implement better QC for bonding processes during construction of these boats;
- ◆ Planned regular Inspections for significant indicators (cracks in secondary internal bonding) to be included in maintenance routines;
- ◆ This particular boat underwent additional bonding and stiffening processes and was subjected to both marine and authority assessments before it was returned to operations;
- ◆ Further careful checking and verifying of the competence of third-party inspectors who carry out vessel surveys. Crews, owners, charterers and auditors need to be able to satisfy themselves that these surveys are carried out to the highest standard.

Further information on construction standards for small boats can be found at www.seafish.org/industry-support/marine-survey/construction-standards.

3 Corrosion of Hollow Section Members on Offshore Drilling Structures

IMCA's attention has been brought to instances of potentially serious corrosion on certain types of derricks on jack up offshore drilling rigs. During the periodical inspection of drilling structures, a significant structural integrity issue has been identified. The derricks affected are mostly all 1.2 – 1.3m hook load or GNC derricks built in the early 1980's.

The issue discovered is advanced corrosion of load bearing members within hollow section members on certain models of drilling derrick. This corrosion on the derrick members has been shown to be serious enough to affect the performance and therefore the load bearing capacity of these derricks. In the worst case scenario, there is the potential for member failure which could in turn overload other structural members or create a significant structural failure and/or DROPS incident.

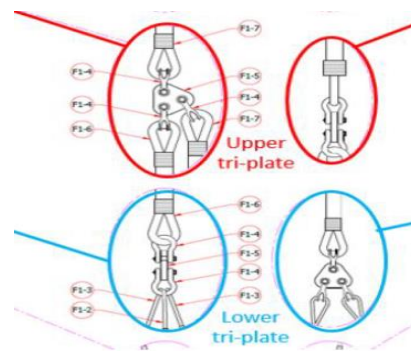


Further information can be found [here](#).

Corrosion-related failure of materials as an immediate cause of near misses or even actual incidents is something that has come to the attention of IMCA on a number of occasions recently. Members may wish to look into this, particularly where corrosion may be hidden, difficult to access or otherwise likely to be overlooked.

4 Near Miss: Rigging Recovered with Missing Nut from Tri-Plate Shackle

A member has reported an incident in which rigging was recovered to deck with missing parts. The incident occurred when a rigging composed of two tri-plates was recovered to the vessel deck, and crew noticed that a nut was missing from one of the shackles. The installation rigging included two tri-plates, one in the lower section of the rigging arrangement just above the suction pile, and the second one on the upper end of the rigging arrangement connected to the crane's auxiliary block. The shackle from which the nut was missing was one of the three installed in the upper tri-plate which was used to transfer the pile from the crane auxiliary block to the Abandonment & Recovery (A&R) winch when lowering the pile to the seabed.



Showing cotter pins (split pins) not spread open as they ought to be. These pins were loose and could be moved back and forth easily

Our member's investigation noted the following:

- ♦ The cotter pin (split pin) was incorrectly installed (not opened out enough);
- ♦ There was no thorough visual inspection of tri-plate shackles by rigging crews (onshore or offshore);
- ♦ The tri-plate was secured on deck with shackles facing downward;
- ♦ The pre-sail-away checklist did not include checks of tri-plate shackles;
- ♦ The offshore rigging crew were unaware of observation following previous pile installation;
- ♦ There was a lack of training of onshore rigging team provided for barge mobilization.

The following **root causes** were identified:

- ◆ Environment – rigging arrangement not allowing straightforward inspection of cotter pins;
- ◆ People – lack of communication between onshore/offshore and project/vessel teams. Onshore project team were aware of the prior observance of a similar hazard. A presentation was developed and meeting held on shore but no evidence could be found that it was ever shared with the teams on board the vessel;
- ◆ People – lack of attention/due care/poor work practice. Lack of pre-lift check of shackles by riggers, and failure to fully check rigging prior to barge sail-away;
- ◆ Organization – failure to vet the onshore rigging team supplied by co-contractor’s subcontractor.

Our member took the following actions:

- ◆ Inspection of all rigging arrangements on the other piles;
- ◆ Reviewed pre-sail-away checklist and integrated into it all specific checks such as nuts and securing cotter pins;
- ◆ Updated the risk assessment and lift plan to reflect the hazards of missing/incorrectly installed pins in shackles;
- ◆ Onshore and offshore riggers to check thoroughly the presence of securing cotter pins after installation and before lifting operations;
- ◆ Project team to ensure that subcontractor’s rigging teams are properly vetted for competency prior to future barge mobilizations.

Members may wish to refer to the following incident (search words: *missing, lifting*):

- ◆ [IMCA SF 02/15](#) – Incident 4 – *Near miss: missing nut and split pin on shackle*

5 Mobile Phone Charger Failures

IMCA brings to members’ attention two recent incidents relating to failures of charging equipment for mobile phones and other small portable equipment using lithium batteries.

Incident 1

A member has reported an incident in which a charging cable for a mobile phone was discovered smouldering. A shore-based member of staff was at work at their work station when they noticed that their phone adaptor charger, which was plugged in and charging their phone, began smouldering. The employee immediately turned off and unplugged the charger and reported the occurrence.

On inspection of the phone charger, it was noticed that the charger cable was damaged and in an old and worn out condition which lead to it overheating.



A summary of actions:

- ◆ The stop work policy actually worked: The adapter was immediately unplugged and the burned cable was removed from use, and the occurrence was immediately reported;

- ◆ A safety stand down was conducted with office personnel to discuss the importance of being more attentive to the condition of electrical appliances;
- ◆ A monthly office inspection schedule was established and implemented, emphasizing the checking of electrical equipment, fire detection equipment and fire-fighting equipment.

Lessons Learnt:

- ◆ The importance of checking the condition of personal electrical equipment;
- ◆ Electrical hazards are all around us not just on the vessel but in the office as well. The following points may be useful:
 - all electrical appliances being used should be genuine and in a good working condition
 - plug sockets and extension leads are to be used correctly and not overloaded
 - care should be taken when dealing with different styles of plugs and sockets from different countries
 - ensure all electrical appliances are switched off after use or before leaving the place of work
 - ensure all electrical appliances are clear from any liquid spillage
 - ensure all extension leads are tidy and do not constitute a trip or fall hazard
 - if you notice or suspect any electrical hazard in the work place report it immediately.

Incident 2

The Marine Safety Forum has reported a small fire in a crew member's cabin on a vessel. It was thought to have been caused by the overheating of a battery. The crew member who was not in his cabin at the time, had left a power bank (battery pack for charging small appliances) charging and unattended. This unit appeared to be a cheap unit purchased online.

See [here](#) for details.

Members should take great care with mains battery chargers, lithium battery 'power banks' and USB cables that are not "OEM" (Original Equipment Manufacturer). It is particularly important to ensure that USB cables are appropriate to safely handle the higher levels of current delivered by some modern chargers.

Portable electrical equipment brought on board vessels should be checked and rated against the ships power supply by qualified personnel. Electrical items should not be left charging, or on standby, in unoccupied spaces (such as cabins.)

