# IMCA Safety Flash 02/15

February 2015

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

## 1 Dropped Object Near Miss: Falling Crane Block

A member has reported an incident in which a crane wire parted and the hook block then fell to deck (approximately 15 metres) landing in close proximity to the deck crew. The incident occurred when a vessel was engaged in cargo operations with an offshore rig, requiring the off-loading of a food container. The rig crane was fitted with two wires; one heavy duty (which was used to off-load the container) and another wire of smaller diameter which was left hanging approximately 6 metres below the crane boom and not connected for the operation.

The rig crane attempted to lift the food container but the container was found to be too heavy, and was immediately returned to deck. Upon safe landing, the heavy duty wire was then disconnected by the deck crew. However, upon disconnection and before the deck crew had cleared the area, the crane driver started to retrieve the smaller wire instead of the heavy duty one. The smaller wire was heaved all the way up to the crane boom, at which point the hook block came into contact with the end of the boom, causing the smaller wire to part. The hook block then fell to deck and landed close to the crew on deck. There were no injuries.

Had the crane block hit anyone, the consequences could have been fatal.

*Figure: showing damage to deck*

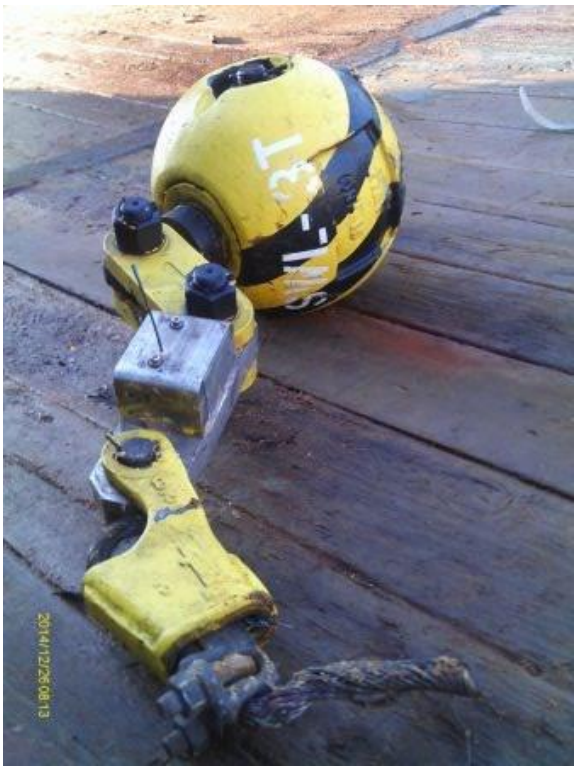

*Figure: crane block that fell*

Investigation is still underway, but the following points may be noted:

- Actual damage: the crane block destroyed sections of wood planks on main deck and damaged the bunker tank top underneath;

- The rig crane's limit switches/stops were apparently not fully operational, thereby allowing the hook block to be heaved all the way up to the boom.

Our member took the following immediate actions:

- "Time Out for Safety" at the earliest opportunity to discuss this incident; emphasized the importance of a clear deck policy, and to remain clear of any suspended load or work;
- Reminded their crew to remain vigilant to human error that may affect the work being undertaken, or other works in the vicinity;
- Be aware of the operation and condition of third party equipment – see above;
- Ensure effective and immediate forms of communication were established at all times with equipment operators, to ensure safe operational practices were maintained and the Stop Work Policy could be rapidly executed and communicated if an un-safe condition occurs.
- Further inspection and testing of limit switches to ensure that no similar technical failure exists onboard;
- Emphasised the need to prepare to exercise the Stop Work Policy if third party equipment is not safe, or there are concerns about its condition and/or operation;

Members should be aware of IMCA guidance and IMCA safety promotional material on lifting equipment, as follows:

- IMCA SEL 019 – *Guidelines for lifting operations;*
- IMCA SPC 04 – *Lifting operations*;
- IMCA SPC 05 – *Lifting equipment.*

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

- IMCA SF 13/11 – Incident 3. *Near miss: winch wire parted and crane block dropped into small boat*;
- IMCA SF 01/12 – Incident 1. *Near miss: crane hook block dropped to deck*;
- IMCA SF 01/13 – Incident 2. *Damage to crane winch.*

## 2 Dropped Object Near Misses

The Marine Safety Forum has published the following two safety flashes regarding a number of dropped object incidents.

In the **first incident**, a piece of timber which was approximately 300mm x 100mm, fell 15 meters from the crane jib support to a mezzanine deck area below. After an initial inspection, it was discovered that the dropped object was not a loose item that had been displaced but was in fact a section of the jib stowage arrangement, which had apparently split and come lose from the jib support arrangement. The incident occurred during very poor weather conditions which may have contributed to the incident.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-15.01.pdf.

In the **second incident**, a single whip line headache ball and hook assembly detached from the crane and landed on the top of the safe haven damaging the deck. Fortunately the deck crew were standing clear and were approximately 4 metres from the point of impact. Although shaken, there were no physical injuries. The assembly weighed 160kg and fell approximately 50 meters giving an impact force of 784KN, which would most certainly have resulted in a fatality had it struck a crew member.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-15.02.pdf.

## 3 Dropped Object – Failure of Lump Hammer

A member has reported an incident in which a wooden hammer shaft failed and the head fell to deck. Two personnel were located at the upper main tensioner level of a pipelay tower, removing dowels from the tensioner gear boxes using a spanner wrench, dowel removal tool and the 2kg lump hammer. During this process the personnel were striking the spanner wrench with the lump hammer. On a downward swing of the hammer and at impact with the spanner wrench, the hammer head detached from the shaft and fell approximately 25 meters vertically through the tensioner to the deck below. There were no injuries. Had the falling hammer head struck a person, according to the DROPS calculator it would have caused a fatality.

The purpose of this safety flash is to highlight the hazards of using tools at height which are not specifically designed for use at height, and to reiterate the importance of preventive measures to eliminate the risk of dropped objects.

*Figure: pipelay tower showing where hammer fell*

*Figure: broken lump hammer*

Our members' investigation noted the following:

- This particular brand of hammer had been ordered in 2011 following a similar incident in which a wooden hammer shaft failed and the head fell to deck. These hammers were deemed suitable for use at height at that time due to the design of the wedging system for the hammer head giving a high degree of securing. This particular hammer had been stored on the vessel and brought into service six months prior to the incident;
- The area below had been barriered off and sentries were posted to prevent personnel entering the area;
- The hammer appeared to be sound and the head was not loose prior to use;
- The hammer was not specifically designed for use at height, and the head can (and did) separate from the shaft;
- The reason for the failure was not yet known, the manufacturer claimed to have a design that requires 20% more force to pull the head from the handle than a conventional wedged hammer, but it had nevertheless failed whilst in use;
- Despite inspection prior to use, the hammer showed no defects. A specifically designed hammer for working at height such as from Stop-Drop Tooling, would not have failed in this way as the head cannot come free from the shaft;
- The shaft of the hammer was fitted with a lanyard, there was however no way to prevent the head dropping with this type of hammer.

Our member took the following actions:

- Ensured that this particular brand of hammer was NOT used at height subsequently;
- Supervisors to ensure that tools used for working at height offer complete dropped object prevention, and liaise with their Health & Safety Executive (HSE) Superintendent for advice if new tools are required;
- Continued liaison with hammer manufacturer regarding the failure.

Further information on safe working at heights can be found in the following IMCA safety promotional material:

- IMCA SPC 06 – *Working at height*;
- IMCA SPC 12 – *Avoiding dropped objects*;
- IMCA SPP 04 – *Avoiding dropped objects;*
- IMCA SEL 009 – *Working at height* including subtitles in Arabic, Filipino, French, Indonesian, Italian, Malay, Portuguese and Spanish.

Members may wish to refer to the following similar incidents (key words: *dropped, tool, hammer*):

- IMCA SF 01/06 – Incident 4. *Hammer dropped from height;*
- IMCA SF 12/11 – Incident 2. *Near miss: dropped object: 6kg sledge hammer head*;
- IMCA SF 02/12 – Incident 1. *Equipment at height not properly secured*.

## 4 Near Miss: Missing Nut and Split Pin on Shackle

A member has reported an incident in which rented lifting equipment was returned to the vendor (a winch supplier) with important parts missing. Rental equipment was returned to the winch supplier from a recent project, and the hydraulic winch set was delivered from the vessel with the split pin and nut missing from one of the 3.25Te shackles which were part of the winch lifting set.

When the equipment arrived at the supplier's base on the back of a truck, the winch supplier offloaded the equipment safely via a forklift truck using the forklift pockets. They then carried out a visual inspection of the equipment and discovered the missing split pin and nut. No incident occurred, however, it is not known whether the lifting set was used in this degraded condition during vessel demobilisation, i.e. without the shackle being properly installed. This could have resulted in a dropped load incident. Additionally, there was the potential for a dropped object incident at the supplier's base during offloading from the truck had the shackle bolt worked loose.


*Figure: condition in which lifting equipment was left – showing missing nut and split pin*

Our members' investigation noted the following:

- There was no evidence that the rigging arrangement was incorrect during the demobilisation of the equipment from the vessel. However, this could not be ruled out and therefore it was vital that the importance of carrying out rigging checks prior to lifting is reiterated;
- It was possible that the split pin and nut worked themselves loose as a result of vibration on the back of the truck during road transportation. This would indicate that either the split pin was incorrectly fitted, or was missing.

Our member took the following actions:

- Subjected all rigging arrangements to a thorough visual inspection prior to carrying out any lifting, ensuring that split pins are securely in place to prevent nuts and bolts from working themselves loose;
- Ensured that lift supervisor inspects all loads thoroughly for potential dropped objects and to ensure correct rigging and slinging arrangements are in place and correctly secured;
- Reiterated importance of thorough visual checking of lifting equipment before use, before mobilisation and demobilisation.

Members should be aware of IMCA guidance and IMCA safety promotional material on lifting equipment, as follows:

- IMCA SEL 019 – *Guidelines for lifting operations*;
- IMCA SPC 04 – *Lifting operations*;

- IMCA SPC 05 – *Lifting Equipment*.

Members may wish to refer to the following similar incidents (key words: *missing, lifting*):

- IMCA SF 05/11 – Incident 1. *Near miss: security of equipment in transit*;
- IMCA SF 01/13 – Incident 1. *Near miss: shackle configuration*.

## 5 Near Miss: Man Overboard

A company has reported a man overboard incident in which the person who fell overboard was recovered onboard uninjured within several minutes. The incident occurred when one wind turbine crew transfer vessel (CTV) went to assist another such vessel which had reported propulsion problems.

The master of the assisting vessel offered to transfer to the disabled vessel and attempt to resolve the propulsion problem. The two masters discussed how the transfer should take place, and agreed that the two vessels should dock bow to bow with their 'push on' fendering. The master of the disabled vessel, transferred to the assisting vessel without incident and took over the controls of the assisting vessel. The manoeuvre was then repeated but whilst the vessels were docking, the master of the assisting vessel slipped from the bow and fell into the sea.

His lifejacket inflated immediately and as he swam towards the other vessel, the master onboard carried out a man overboard recovery procedure and the casualty was recovered onboard uninjured within several minutes. The vessels then went alongside each other and the transfer was completed successfully. As the crew were subsequently unable to effect a repair, one vessel towed the other back to port.

The investigation noted the following, some of which was drawn from CCTV recordings from the forward facing camera onboard the assisting vessel:

- Although the master of the disabled vessel reported his mechanical problems to the marine co-ordinator, neither master on either vessel discussed their subsequent intentions with the co-ordinator or the company office;
- The initial approach of the assisting vessel to the disabled vessel as slow and measured and the vessels docked bow to bow with little movement, and the master of the assisting vessel was able to transfer safely;
- The deck supervisor onboard the assisting vessel took station on the transfer platform on the vessel but was not wearing a lifejacket;
- The master of the disabled vessel was wearing a lifejacket but the crotch straps were not correctly secured;
- The assisting vessel moved clear to allow the master of the disabled vessel to take control of the vessel before it made a second approach. This approach was not completed before the master of assisting vessel (who was waiting to do just this) attempted to transfer across the bows, and although he was wearing a lifejacket, the crotch straps were not properly secured;
- The recovery of the man overboard was very effective; he was only in the water for a few minutes;
- The deck supervisor onboard the disabled vessel alerted the marine co-ordinator ashore of the situation and kept them informed of developments;
- The deck supervisor onboard the assisting vessel responded quickly carrying out proper man overboard recovery procedures;
- The master in command of the assisting vessel handled the situation well, manoeuvring the vessel to recover the man in the water before putting the engines to neutral and assisting the deck supervisor to bring the man aboard.

The conclusions drawn were as follows:

- The initial mechanical problems onboard the disabled vessel were later investigated and rectified by a technician who found and replaced defective relays. It was possible that the crew of the vessel could have been talked through this process successfully if they had contacted support staff at the company office – and so avoided the man overboard incident;
- Although the decision of the master of the assisting vessel to board the other vessel was done with good intentions, it was not a sound decision to leave his own vessel and to carry out vessel to vessel transfers to effect a repair;
- Whilst the man overboard recovery was carried out in a very efficient and professional manner, it should be noted that both masters and one deck supervisor failed to follow correct procedures regarding the correct use of personal protective equipment (PPE) – in this case, life jackets.

Members may wish to refer to the following man overboard incidents which were not near misses: (key words: *man overboard*):

- IMCA SF 16/13 – Incident 2. *Fatality – Man overboard*;
- IMCA SF 12/14 – Incident 5. *Fatality – Man overboard*.

In both cases fatality followed from the man overboard not wearing a lifejacket.

## 6 Fatality: Worker Crushed by Engine Piston Assembly

The Workplace Safety and Health Council of Singapore has published the following safety flash regarding an incident in which a worker was fatally crushed by a piston assembly within the engine room of a marine vessel docked at a shipyard. The accident occurred during engine overhaul works. During the installation of the piston assembly, a worker entered the crank case to carry out alignment work. While doing so, the piston assembly suddenly fell, crushing the worker who was positioned directly beneath the assembly. He was immediately extricated by fellow workers and sent to the nearest hospital, where he succumbed to his injuries about two hours later.

The incident can be downloaded from here.

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

- IMCA SF 18/09 – *Fatal [crush] incident onboard a dive support vessel.*