

IMCA Safety Flash 34/16

December 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 info@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.

1 Offshore Crane Safety Systems

The UK Health and Safety Executive (HSE) has published the following safety alert covering two recent crane incidents in which the crane boom upper hoist limit systems failed to prevent the crane booms from being hoisted up too far and against the boom backstops. The continued hoisting resulted in the booms fully compressing the boom backstops, causing high loading on the boom upper main chords with the eventual catastrophic failure of the booms. Measures should be in place to verify the correct operation and the correct settings of all safety systems and limits on offshore cranes.

Incident 1

Pre-use checks on a diesel hydraulic crane fitted with a pneumatic control system failed to identify or question why the boom hoist upper limit system was not functioning in the manner detailed in the crane operation manual.

This malfunction was the result of an omission to fit a blanking plug in a pneumatic valve in the control system. A fault developed in the boom hydraulic pump actuator which allowed the boom to continue hoisting after the control lever was returned to neutral. This fault in the pneumatic control system allowed the boom to be hoisted beyond both the upper hoist operational limit and the upper hoist ultimate limit.

Incident 2

The boom upper hoist operational limit on an electric crane had been deliberately defeated to allow the boom to be hoisted up to a position which would allow the crane to be rotated through 360 degrees.

This activity may have been conducted on the basis that the boom upper hoist ultimate limit would provide protection.

Unfortunately, this ultimate limit had not been set to operate at the correct angle of the boom. The boom was therefore hoisted up too far and against the boom backstops, leading to the failure of the boom before this ultimate limit was activated.

The HSE alert suggests the following **actions**:

- ◆ Ensure that the inspection and the function testing of the safety systems on offshore cranes are sufficiently robust to verify that they operate in the manner described in the crane operation manual;
- ◆ Ensure that inspection and function testing includes verifying that the boom hoisting limits operate at the angles of the boom specified in the crane operation manual;
- ◆ Where cranes are fitted with ultimate boom limits advice should be obtained from the manufacturer or a suitably competent person as to the method and frequency of the tests required to verify the correct operation and setting of these limits. These tests – particularly if carried out by simulation – should be robust enough to ensure all operational components are tested and that the system operates at the correct angle of the boom.

The full alert can be found [here](#). Members may wish to refer to **IMCA SEL 019 – Guidance on lifting operations**.

2 Dropped Object Near Miss: Crane Rest Damage

A member has reported an incident in which a section of H-beam steel plate fell from a crane boom rest. The incident occurred during the booming up of the vessel's aft crane. The main hook "headache ball" or hook snagged the adjoining twin fall main block storage structure H Beam (Photo 1). This caused a 50 cm section of storage structure H-beam steel plate to be damaged (Photo 2). The H-beam section, weighing 20 kg, fell 40-50 cm into the main hook bucket which is 2 m in depth (Photo 3). There was a risk potential for the steel plate to have fallen 4.3 m to the vessel deck area below.



Aft crane



Section of H-beam (post collision with headache ball and hook)



Section of damaged H-beam

Further investigation of this incident is on-going. Our members' initial investigation revealed the following:

- ◆ No Banksman in place for removing the crane from the rest;
- ◆ Ineffective communications between the crane operator and the banksman.

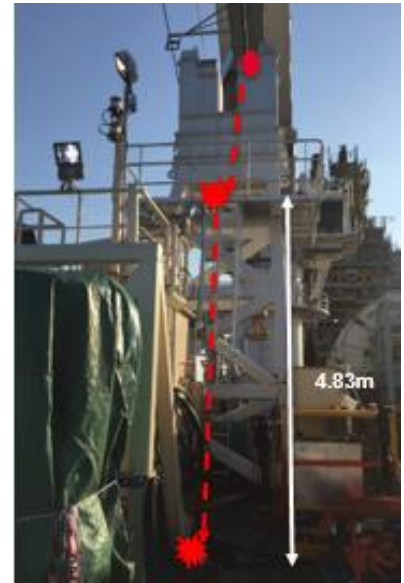
3 Near Miss – Dropped Steel Plate

A member has reported a near miss incident in which a steel plate weighing over 1kg fell at least 4.8m to the ground. The incident occurred when a vessel main crane was being prepared to recover a work basket from the seabed. A rigger (banksman) was assisting the crane movement by dogging the crane boom out of the crane crutch (boom rest) – in accordance with company lifting operations procedures. As the crane boom rose, the rigger heard two distinct noises of a dropped object.

Upon investigation, a steel plate (1.38 kg), later identified as sea-fastening dog plate, had fallen from the crane crutch, struck an access platform and fell a further 4.82m to deck. While there was no-one in the vicinity at the time, according to the Drops Calculator the falling steel plate had the potential to cause a serious injury.

Our members' investigation noted the following:

- ◆ Following examination of the crane crutch along with records of recent dropped object inspections of the area, it was concluded that the dog plate had been placed on the crane crutch Teflon pad and the movement of the crane boom as it was raised and lowered out of the crane crutch over a period of time, had 'rocked' the plate aft to the edge of the pad until it fell;
- ◆ The dog plate did not originate from the project and was of an unknown origin. The vessel had been in a shipyard for crane refurbishment work. This had included scaffold work around the crane crutch immediately before mobilisation;
- ◆ The dog plate had been used by the scaffold team that worked on the crane crutch. It was likely that the plate had been placed, inadvertently or otherwise on the crane crutch Teflon pad by one of the scaffold team;
- ◆ The **root causes** of this incident were an inadequate crane boom inspection process and inadequate control or supervision of the yard scaffold crew.



Conclusion and lessons learned:

- ◆ Dropped objects often can be attributed to a lack of access for proper dropped object inspection;
- ◆ Crane boom rests are a common source of dropped objects due to the dynamic nature of landing crane booms and the lack of easy access to the top of the crane boom rest for inspection of the pads and fittings;
- ◆ Crane boom rests and all items located on the rest should be subjected to regular and robust dropped object inspection through a planned maintenance system;
- ◆ Drops or Crane Boom Rest Inspections should be conducted in a manner where there is clear visual assess to boom pads either by direct access or other acceptable means;
- ◆ Drops inspection report sheets should provide clear instructions and guidance on conducting a robust drops inspection and should be added to Planned Maintenance Work Orders for completion;
- ◆ Supervisors controlling maintenance or refurbishment works of 3rd party contractors should be satisfied that the worksite is safe and in good order upon completion of all works.

Dropped object incidents or near miss incidents comprise 12% of all the incidents reported to IMCA during 2016. Members attention is drawn to [IMCA SF 33/16 – Incident 3 – Near miss: dropped object from crane](#), which includes a summary and links to all the dropped object incidents reported in the last two years.

4 Fatal Fall from Height

The UK HSE reports that an international engineering company has been sentenced following the death of a worker who fell 10m to his death from an electricity pylon. A rigger had been working with a colleague preparing the pylons in readiness for painters to carry out maintenance work. On the morning of the incident, he arrived at the job to find that the painters had already started painting even though the pylon had not been rigged.

He climbed approximately 10m up the pylon, when he fell backwards, narrowly missing one of the painters working directly below him. As a result of the fall, he sustained serious multiple injuries and died at the scene.

The investigation found a number of failures in the management of risks arising from work at height. Although the company had a system of work they failed to implement, monitor and enforce this system. This failing exposed their employees to the risk of death.

After the hearing, a HSE Inspector noted:

“The company were clearly aware of the hazards involved with pylon work and had a system in place to manage the risks. Unfortunately, they failed to implement, monitor and enforce this system of work. In addition, they failed to ensure the proper inspection and provision of safety critical personal protective equipment.”

The press release can be found [here](#).

This incident is passed onto members because it highlights the potentially fatal consequences of failing to properly manage risk at the worksite. Members may wish to refer to the following incident (search words: *failure, manage, risk*):

- ♦ [IMCA SF 07/16](#) – Incident 2 – *Mooring: port operator fined after worker injured by capstan.*



5 High Potential Near Miss: Failure in Safety Gate

Step Change in Safety has published the following safety alert regarding a near miss incident in which there was a potentially very serious failure of a safety gate at height. During a routine inspection, whilst stepping from a ladder onto a gantry, the crewman performing the inspection discovered that the safety gate bar was adrift from its hinge bracket. The crewman narrowly avoided a fall. He replaced the gate bar and immediately reported the event. There were no injuries.

Investigation revealed that a retaining plate and bolt were missing due to the bolt working its way loose. The bar was repaired immediately. Ongoing checks of all such safety gates took place to ensure they are functioning correctly and safely. In the long term, a review was arranged of the maintenance strategy of the safety gates.

The full report can be found [here](#). Members may wish to refer to the following incidents (search words: *gate, failure*):

- ♦ [IMCA SF 04/16](#) – Incident 1 – *Near miss: non-fatal man overboard incident.*

