

IMCA Safety Flash 23/16

September 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

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Focus: Dropped Objects

This safety flash covers five dropped object incidents. In the first, complacency during routine loading operations was the root cause of a dropped pallet spilling of hundreds of kilos of groceries. In the second, a hood came loose from an automatic rolling door in a workshop location – **root cause**: failure to identify maintenance requirements.

In the third, a CCTV camera under repair fell from a crane when the crane was moved, following lack of communication during the repair process. The fourth incident covers failure of bolts resulting in dropped objects in pipelay operations.

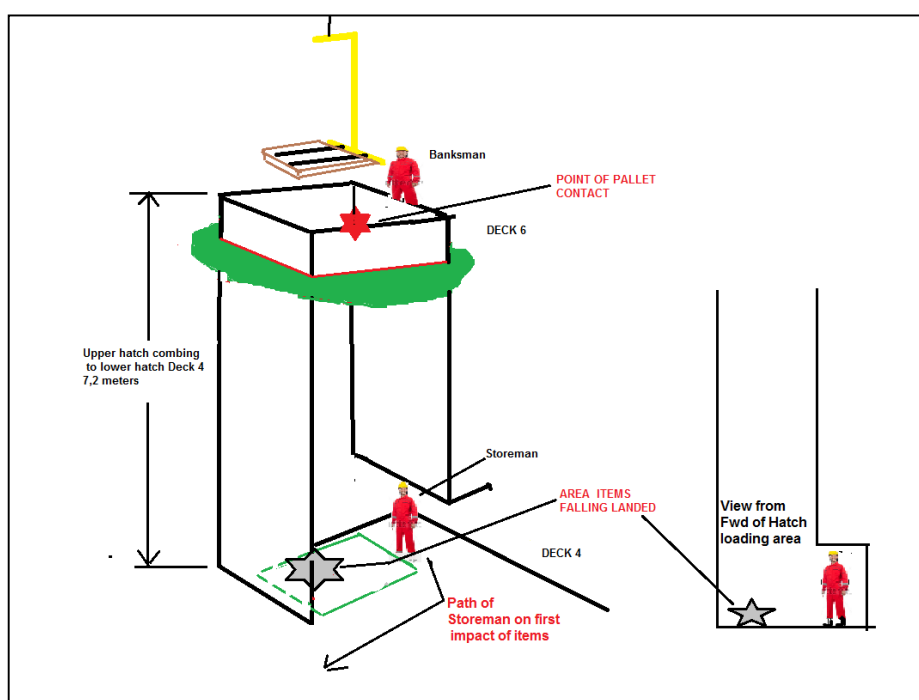
The fifth covers the risk of dropped objects – particularly parts of wooden handled hammers – when working at height.

1 Dropped Pallet During Loading of Stores

A member has reported an incident in which a pallet shed its load during lifting operations, resulting in 900kg of groceries falling 7m to the deck below. The incident occurred during a routine lifting operation from quayside to vessel. Whilst attempting to lower a pallet laden with stores through a deck hatch, the load contacted the corner of the hatch, damaging the pallet. The cellophane wrapping split near the bottom, and the majority of the 902kg contents fell 7.2m to the deck area below. The front right corner of the pallet was hanging off but did not fall.

Although the pallet contained multiple items, the individual weights of the goods dropped were significant. Had a person been under the load and struck by a falling item, the potential severity could have resulted in a fatality.

No one was harmed during the incident – however, the storeman who was receiving the load at the designated landing site had run from the area once the items had dropped to deck and had



inadvertently slipped on cooking oil which had spilled from the damaged supplies, causing him to fall to the deck onto his hands and knees.

Our members' investigation revealed the following:

- ◆ Personnel responsibilities had not been adequately established at the tool box talk (TBT) before the lifting operation;
- ◆ A number of crew members had arrived on the worksite late, failing to attend the TBT. This resulted in confusion as to who was responsible for the load at what point during the lift;
- ◆ In preparation for the lift, and unlike the previous loads, the bosun neglected to use the load securing chain on the pallet lifting frame. This oversight had been noticed by the crane operator who did not report it – the crane operator felt it was his supervisor's responsibility and did not want to challenge his superior's action;
- ◆ A pallet lifting box was on-board the vessel. The pallet involved was too large for this box. Had the pallet lifting box been capable of accommodating the pallet in question, it could have prevented the incident;
- ◆ On lowering the pallet into the stores hatch, the crane operator was expecting instructions from the banksman who conversely believed that the crane operator had control at this stage. Because of the incorrect understanding and lack of control from the banksman, the load was lowered into the blind hole in one slewing motion and not in a staged progression – this did not allow for the load to be stabilised and centralised before it was lowered through the hatch;
- ◆ The risk assessment did not make reference to the practice of a staged progression;
- ◆ As a result of the above, the load had a sufficient degree of freedom to contact the side of the hatch and damage the pallet, resulting in the contents dropping to the deck below.

Our member identified the following **causes**:

- ◆ There was insufficient detail recorded in the lift plan and task risk assessment;
- ◆ Personnel responsibilities were not adequately established during the TBT;
- ◆ The load was not sufficiently secured on the pallet – a lifting chain was not used;
- ◆ The crane operator took no action when he noticed the pallet lifting frame chain was not being used;
- ◆ There was no pause above the hatch to secure and centralise the load before lowering.

The **root cause** was found to be **complacency** during "routine" tasks.

The following **contributory factors** were noted:

- ◆ Self-imposed/perceived time pressures;
- ◆ No additional rigging was used to secure the contents of the pallet;
- ◆ Pallet lifting box held on-board did not fit the pallet size being used;
- ◆ Not all personnel involved in the operation attended the TBT;
- ◆ Culture-driven behaviours influenced the crane operators' decision not to report, as he felt it was inappropriate to challenge his supervisor.

Our member required the following immediate actions:

- ◆ Ensure all personnel involved in an operation attend a toolbox talk (TBT) before taking part in the activity;
- ◆ The TBT should sufficiently outline roles & responsibilities of those involved;
- ◆ Reinforce the 'STOP THE JOB' philosophy to work teams prior to conducting an operation;
- ◆ Review lift plans and task risk assessments for routine lifting operations, ensuring they are up to date and there is sufficient detail surrounding:
 - control of loads
 - roles & responsibilities of personnel involved
 - securement of loads

- lifting of pallets
- “Line of Fire” and confirmation of clear areas during blind lowering;
- ◆ Review the method for securing pallet loads ensuring it is adequate for the proposed lift;
- ◆ When lowering through a blind hole, adopt a staged progression to the lift allowing for the load to be stabilised and centralised before lowering;
- ◆ Communicate with your work team that time constraints should not impede the safe progress of an activity. If there are concerns regarding time constraints and the viability of completing a task, this should be raised with the offshore management team or supervisor.

Members may wish to refer to the following incidents (search words: *complacency, lifting*):

- ◆ [IMCA SF 05/11](#) – Incident 3 – *Lack of safety awareness: crush injury during lifting operations*;
- ◆ [IMCA SF 14/15](#) – Incident 5 – *Dropped object near miss: lifting*.

2 High Potential Near Miss – Dropped Object

A member has reported a high potential dropped object near miss incident. The incident occurred in a workshop location ashore. A section of metal panelling, which weighed 5.6kg, came loose from the hood of a large industrial automatic rolling door and fell 7-10 meters to the ground. It landed right in front of the fire exit of the workshop.

The Dropped Objects Preventions Scheme (DROPS) calculator tells us that an object of that weight falling from that height could have resulted in a potential fatality.



Item dropped approximately 7-10 meters from above the main roller shutter door



Hood panelling had dropped in front of the main fire exit



One of the rusted fastening brackets

Our members’ investigation revealed the following **causal factors**:

- ◆ Fastening brackets were rusted; this rusting was caused by water ingress;
- ◆ There was no secondary retention fitted - a practice advocated by DROPS;
- ◆ Whilst the rolling door itself was subject to planned maintenance and inspection, the system did not extend to the hood above the door, which had not been inspected since its installation approximately 15 years before;
- ◆ No dropped objects survey had taken place, which could have identified the actions required to ensure the safety of the item.

The **root cause** of the incident was found to be **failure to identify the requirements** to ensure the safety of this large automatic rolling door – including maintenance, inspection and secondary retention.

Our member took the following actions:

- ◆ Fallen panel was replaced and appropriate secondary retention (self-tapping screws) installed;
- ◆ The remaining panels were all examined and self-tapping screws were fitted as secondary retention;
- ◆ A preliminary dropped object survey was carried out, and annual checks on the hood panel were introduced.

Dropped objects as a result of corrosion is an important and recurring issue, and members may wish to focus attention on it. Members may wish to refer to the following incidents (search words: *dropped, corrosion*):

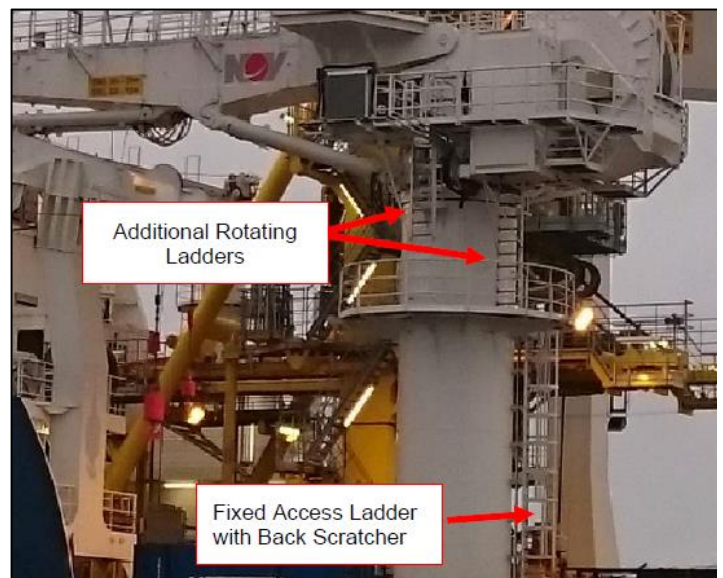
- ◆ [IMCA SF 01/12](#) – Incident 5 – *Dropped object: injury resulting from failure caused by corrosion*;
- ◆ [IMCA SF 21/15](#) – Incident 1 – *High potential near miss: safe working load (SWL) plate fell from crane auxiliary block*.

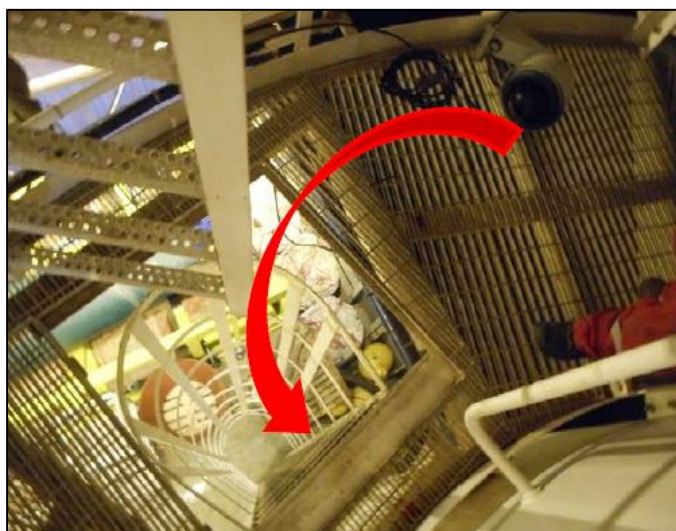
3 Dropped Object Fell from Crane – Poor Communication/Lack Of Awareness/Control Of Work

A member has reported a dropped object incident in which a CCTV camera (weighing 5.8kg) fell approximately 3m down a crane pedestal ladder before being arrested by its data cable, which prevented it falling on to the main deck. A 50Te crane was tasked with the recovery of subsea equipment. During this operation the crane was started and rotated outboard portside in order to deploy the hook to seabed.

This 50Te crane was designed with a fixed access ladder, complete with a “backscratcher” from the main deck to the first level walkway on the crane pedestal, a height of 7.4 meters. From this walkway, there are three additional ladders fixed to the crane, two of which are for maintenance purposes and the other leads to the crane operators control cabin. These additional ladders rotate with the crane as it is slews in the required direction.

As the crane was rotated, one of these ladders caught the CCTV camera that had been secured to the walkway following maintenance during the previous shift, pulling it approximately 1 meter to the access hatch, where it fell before being arrested by the data cable.





Our member's investigation noted the following:

- ◆ The CCTV camera had been removed from its mountings the day before the incident to allow investigation of reports that it was not working properly;
- ◆ The faulty camera could not be repaired at the time and as such, was secured to the crane walkway using tie-wraps;
- ◆ The access hatch located on the walkway was left in an open position while crane operations were ongoing. This is common practice and is done to allow suitable access/egress to and from the crane in the event of a crane breakdown or if a rescue operation is required. The crane design prevents the hatch from being opened when one of three ladders are positioned over it, restricting access/egress;
- ◆ The work conducted on the camera and the status in which it was left was not communicated to the crane operator or the project construction crew at shift handover/TBT. The on-shift crane operator was not made aware that work had been conducted on the crane pedestal and did not identify the CCTV camera during the pre-use inspection;
- ◆ The CCTV repair was considered to be covered under a company "routine duty for work on low voltage systems";
- ◆ The correct process for approving "routine duties" had not been followed which resulted in this particular routine duty being absent from the appropriate register of such duties kept on the vessel.

Lessons learnt, actions taken, and conclusions:

- ◆ There was a lack of awareness and risk perception of the hazard presented by the rotating ladders;
- ◆ A more thorough pre-use inspection of the walkway would have discovered the potential dropped object;
- ◆ Improved communication – particularly at shift handover – between all parties would have raised awareness of the operation;
- ◆ Had this operation been conducted under a permit to work (PTW) or the correct process followed for routine duty activities, awareness of the operation would have been greater. It is important to highlight that control measures had been implemented by those conducting the work to ensure safe execution of the task and that these were removed when the worksite had been deemed safe;
- ◆ Personnel were clear of the crane pedestal at the time of the incident due to the task being conducted and member's procedures for controlling access to the crane when in use. Our member reviewed processes for controlling access to ensure they were robust in protecting personnel from injury. The safe system of work for all ladders on worksites, both permanent and temporary was reviewed, with consideration being given to suitability of design, position and access/egress.

Members may wish to refer to the following incident (search word: *crane*):

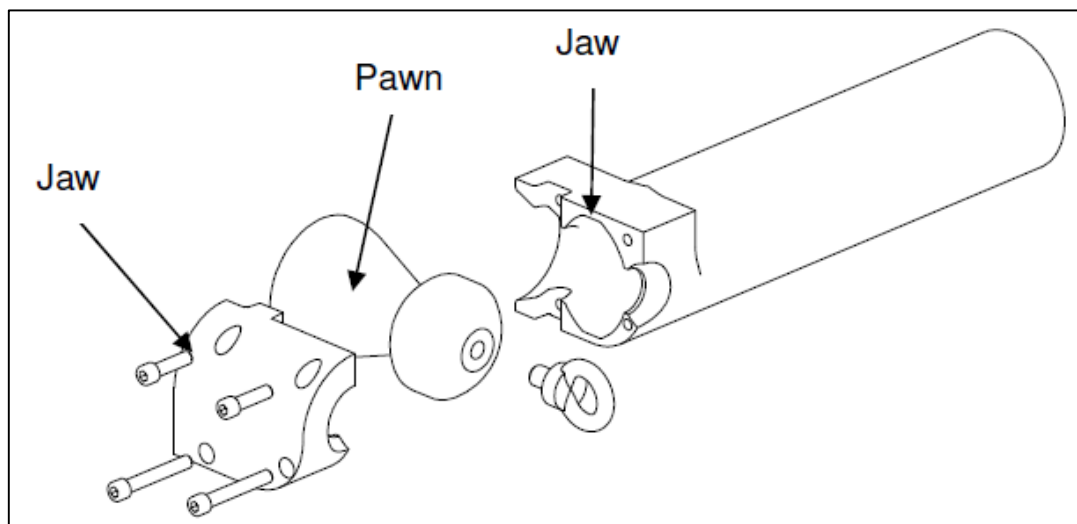
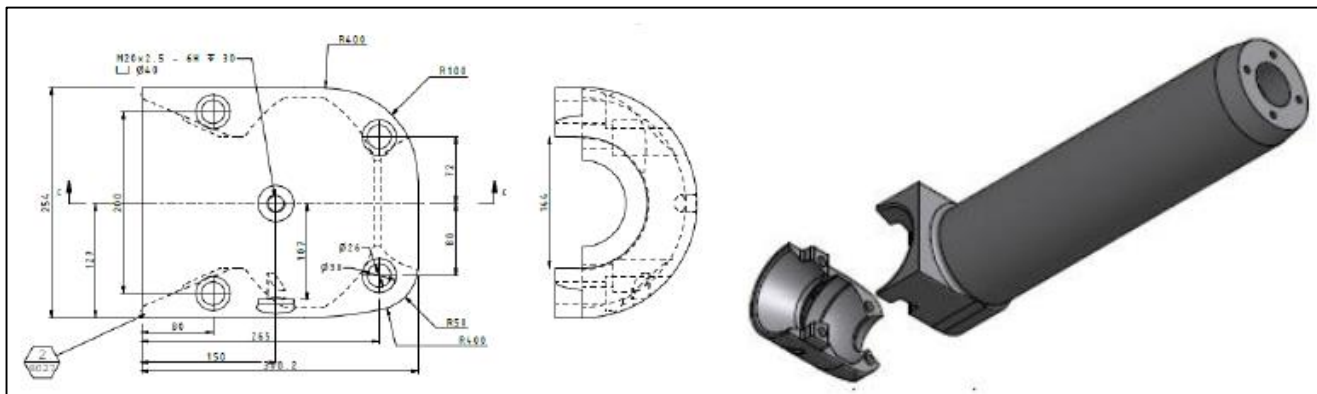
- ♦ **IMCA SF 07/11 Incident 4 Near miss: personnel almost caught between crane house and scaffold pipe:**
 - In this rotating crane incident, a **direct cause** was failure to communicate - the crane operator was not informed at the start of the work. Also, a 'last minute risk assessment' by the non-destructive examination (NDE) inspector did not reveal the actual risks; there was inadequate initial instruction, and information was not communicated properly to all the involved parties. The TBT process was not conducted in accordance with established procedures and the work process was discussed without involvement of all parties (deck crew/crane operator).

4 Dropped Object – Failure of Split Head Elbow on Bolts

A member has reported two failures of bolts on the split head elbow resulting in two dropped object incidents this year and similar incidents in recent years.

During pipelay operations, the split head elbow is assembled around the pipeline pawn head for attachment of the product (pipe) to the storage reel. The elbow is a two-part socket bolted equipment that is fitted by the construction crew on deck before being pulled in to the reel insert and secured.

These bolts have failed on a number of occasions during spooling or laying operations resulting in dropped objects. One contributing factor being considered is the suitability of these bolts for the activity.



Our member considered the following actions:

- ♦ Use of a brand new set of bolts for each spooling operation;
- ♦ Careful checks to be made to ascertain that all bolts are new and inspected for defects before each assembly operation;

- ◆ Further close attention to be paid to the engineering details of the bolts and the torque settings of the split head elbow.

Members may wish to refer to the following incident:

- ◆ [IMCA SF 01/15](#) – Incident 5 – *High potential dropped object.*

5 Working at Height – Use of Wooden Handled Hammers

A member has drawn to IMCA's attention a number of incidents involving the use at height of wooden handled hammers. All of these incidents involved the hammer head separating from the handle, and had the potential to cause major injury or fatality.

Our member took the following actions:

- ◆ Required crews not to use hammers with wooden handles when working at height;
- ◆ Required crews to use composite design hammers (single piece with integrated handles) when working at height;
- ◆ Ensured that tools are regularly checked to ensure they are in a serviceable condition and free of homemade repairs, and defects (loose heads, etc.);
- ◆ Ensured removal of all wooden handled hammers which were used for work at height.

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

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

Members may wish to refer to the following incidents (search words: *tool, working, height*):

- ◆ [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 14/14](#) – Incident 5 – *High potential dropped object incident.*