

IMCA Safety Flash 04/18

February 2018

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.

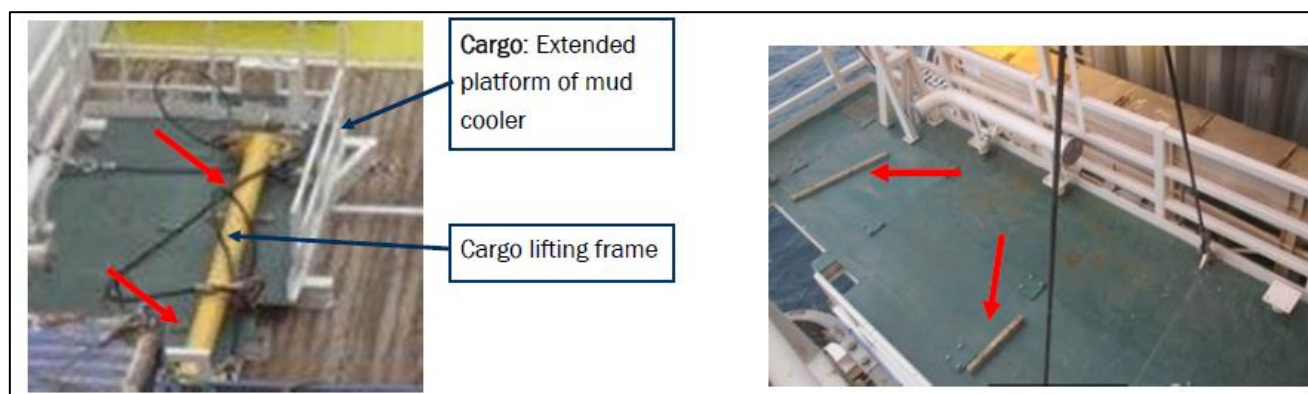
Dropped Objects

This safety flash brings five dropped object incidents to your attention. In the first two, we look at the recurring and very serious issue of objects falling from cargo. This remains a grave concern for our industry. The other three incidents cover infrastructure falling from height. In the first case, a spark arrestor falling 16m from the funnel. The other two incidents are both broadly similar occurrences in which satellite antenna domes have fallen from the mast.

1 Near Miss: Potential Dropped Object Left on Top of Cargo

What happened?

During deck cargo loading operations from a vessel to an offshore platform, two pieces of unsecured timber were inadvertently lifted from the vessel onto the platform, on top of the lifted cargo – a mud cooler module. This was discovered and reported by the deck foreman on the platform, who immediately informed all involved parties. There were no injuries or equipment damage.



What went wrong? What were the causes?

Investigation revealed that the two timbers were initially placed as dunnage under the lifting frame (“spreader bar”) after loading onto the vessel at the quayside. Third party shore-side stevedores originally placed them to prevent damage to the lifting frame and its slings being caused by movement during the voyage.

When the platform hooked the frame, it was anticipated (by the third-party workers) that the crew would go under the suspended load to remove the dunnage. However, the vessel crew correctly declined to do so and left the timbers in situ. However, the vessel crew did not identify the further hazard left by leaving the timbers on the roof of the mud cooler module.

What lessons were learnt?

In this specific case, a possible solution could have been a pre-lift for repositioning the spreader bar, allowing removal of the timbers by using a hands-off approach, using push/pull poles.

What actions were taken?

- ◆ Task risk assessments for lifting operations were reviewed to include risk and controls related to potential dropped objects while handling bulky/heavy loads where cargo lifting frames are used;
- ◆ Permit to work checklist was reviewed to include a specific requirement to check for potential dropped object (PDO) associated risks;
- ◆ The incident, investigation and outcome to be shared with the quayside lifting authority, such that future lifting plans take into account the offshore environment.

Members may wish to remind their offshore personnel of the following guidance and promotional material:

- ◆ [Guidelines for lifting operations](#) (IMCA SEL 019);
- ◆ [Safe lifting](#) (IMCA SEL 030).

Members may also wish to refer to the following incidents:

- ◆ [Near Miss: Dropped object from cargo](#);
- ◆ [High potential dropped object near miss: object fell from cargo](#).

Dropped objects from cargo are a significant source of incidents reported to IMCA and to other industry organisations including Step Change and the Marine Safety Forum (MSF).

2 Potential Dropped Objects Left on Loaded Cargo

What happened?

A member reports numerous instances of potential dropped objects being found on containers and equipment being loaded from port and offshore facilities.



What went wrong? What were the causes?

Items of significant weight, such as a bag of fittings weighing 15kg, loose rocks, scissors, crow bars, large pieces of wood and loose lumps of steel affected by corrosion, have all been found when loading cargo.

The primary causes were poor housekeeping and failing to conduct inspections of loads before, during and after lifting operations.

What lessons were learnt?

- ◆ Containers and equipment being loaded and unloaded have been prepared by a third party. Great care and caution should be exercised when accepting these loads;
- ◆ ALL parties in the supply chain have a responsibility to inspect loads before first lift, during transit and when unloading;
- ◆ Ensure good housekeeping on and around all containers/equipment;
- ◆ Never stand under a load;
- ◆ Establish exclusion zones during lifts.

Members may wish to refer to the following incidents:

- ◆ [Near Miss: Dropped object from cargo](#)
- ◆ [High potential dropped object near miss: object fell from cargo](#)

Dropped objects from cargo are a significant source of incidents reported to IMCA and to other industry organisations including Step Change and the Marine Safety Forum (MSF), and remain a grave concern.

3 High Potential Near Miss: Dropped Object – Spark Arrestor

What happened?

An 18kg spark arrestor fell 16 metres from the funnel stack and landed on the FRC deck. No-one was injured but this was considered a serious near miss. The spark arrestor was installed at the direction of the charterer only days before the incident. It was installed by a third-party sub-contractor; it was a requirement for working in the field and was new to the vessel.

What went wrong?

- ◆ The spark arrestor became dislodged due to exhaust pressure and vibration;
- ◆ The clamp was not secured tightly enough;
- ◆ The mechanism of securing was pop rivets;
- ◆ Vessel management did not manage the quality control of the third-party work when the spark arrestor was installed.

What were the causes?

- ◆ A causal factor was:
 - installation (fixing) of the spark arrestor was not adequate or to industry standards and not quality checked by the vessel crew or management;
- ◆ Root causes were:
 - failure of vessel operator to conduct a management of change (MoC) process for spark arrestor being installed
 - the vessel operator did not follow contractor management procedures as the third-party installer was not contracted by the vessel.

What lessons were learnt?

- ◆ There should be a management of change (MoC) process applied to all significant modifications or additions to vessel plant and equipment. This should include quality control to verify installation meets industry standards;



- ◆ Contractor management principles still apply even if there is no actual contractual relationship between the vessel operator and the third party doing the work.

What actions were taken?

- ◆ Review and update of safety management system (SMS) documentation (management of change (MoC) and Contractor Management processes) to ensure this scenario involving third parties is properly dealt with;
- ◆ Additional MoC training provided to vessel management teams.

Members may wish to refer to:

- ◆ [Guidelines for management of change \(IMCA SEL 001\)](#).

Members may also wish to refer to the following incidents:

- ◆ [Control of sub-contractor personnel: unplanned and uncertified lifting operations](#);
- ◆ [Two near misses: loads fell from height to deck](#).

4 High Potential Dropped Object – Satellite Dome Fell from Mast

Note: this incident happened recently and is still under investigation.

What happened?

During a vessel transit in moderate seas, when the vessel was rolling and pitching, the Sat C dome fell from the main mast on the deck – a fall of approx. 17 meters. This incident could have been much more serious had crew been in the area when the dome fell. Understanding the reasons for, and following, a Clear Deck Policy, made a difference; reducing exposure of personnel on open deck areas during a sea passage in moderate weather conditions.



What went wrong? What were the causes? – Preliminary

There was severe corrosion inside the Sat C dome, but this was hidden and *had not been spotted* in previous visual inspections carried out as part of the planned maintenance system (PMS).

Any additional lessons learnt identified will be communicated following the investigation completion.

Members may wish to refer to the following incidents:

- ◆ [Dropped object near miss: antenna parts worked loose and fell to deck](#);
- ◆ [High potential dropped object near miss: antenna fell to deck](#).

5 Galvanic Corrosion Causes Dropped Object – Satellite Dome Fell from Mast

This incident is not the same incident as the previous one, though similar.

What happened?

A vessel was sailing in its assigned standby location during heavy weather when the VSAT satellite antenna dome mounted on the vessel's mast fell off and landed in the monkey island above the wheelhouse. The fallen equipment was secured and the vessel master informed. The event was duly reported to shore side management. There were no injuries.

What went wrong?

Preliminary investigation revealed corrosion as the cause of the failure. The corrosion was discovered in the bolts and the mounts and was due in part to the use of galvanically-incompatible materials.

Deeper investigation looked at weather conditions, the securing arrangements of the VSAT satellite antenna dome, maintenance of the mast and its attachments, activities associated with the mast and the area above the wheelhouse. The investigation team found to be unsuitable, the arrangements by which the pedestal was attached to the mast:

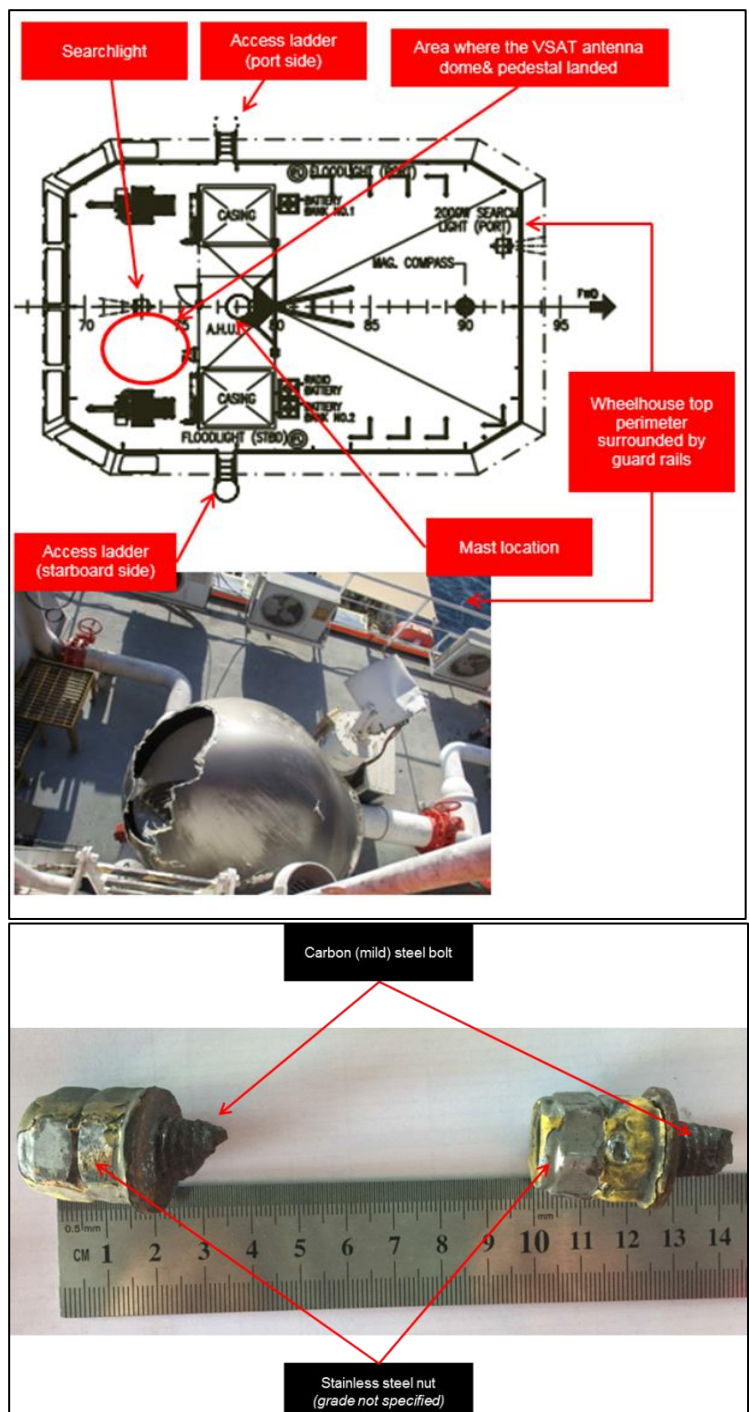
- ♦ The bolt sizes were deemed insufficient for the static and dynamic loads that would be imposed on a VSAT antenna assembly while in service, particularly at the mast location, particularly given that corrosion is a long-term concern;
- ♦ The materials used for securing the pedestal to the mast were galvanically incompatible for the environment, i.e. mild carbon steel bolts used in combination with stainless steel nuts.

What were the causes?

The use of dissimilar metals in the nuts and bolts anchoring the pedestal of the VSAT satellite antenna dome to the mast allowed gradual galvanic corrosion of the mild steel bolts and eventual failure. The location of the dome on the mast would have exacerbated the problem, as the dome would be exposed to both windage effects and tangential g-forces as the vessel responded to wave movement.

Lessons learned

- ♦ The securing arrangement was very difficult to inspect properly, as the nuts and bolts were almost invisible;
- ♦ Welding the dome pedestal to the vessel structure should be of benefit;



- ◆ Where nuts and bolts are used, careful consideration should be given to ensuring the nuts and bolts are both the correct material for the environment in which they are used, and that they are the correct size.

What actions were taken?

- ◆ Inspections and maintenance – revise the vessel planned maintenance system to provide:
 - specific guidance as to what equipment to check when performing a visual inspection, and
 - clarity as to what common concern(s) to look out for;
- ◆ Improvements to the design process:
 - consider the use of a welded solution where practical
 - where a nut and bolt arrangement is practicable then the mounting material applied should be commonly used (and suitable for) in the marine environment, such as galvanized steel bolts and nuts. Mounting materials of different composition should be avoided to minimize corrosion in a marine environment.

Members may wish to refer to the following incidents:

- ◆ [High potential near-miss: SWL plate fell from crane auxiliary block;](#)
- ◆ [Near miss: corrosion-related failure of bolts used to secure lifeboat winches.](#)