

IMCA Safety Flash 14/18

July 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.

1 Man Overboard: Personnel Transfers by Swing Rope and Personnel Basket

The United States' Bureau of Safety and Environmental Enforcement (BSEE) has published [Safety Alert 331](#) on personnel transfers using swing rope and personnel basket. It relates to a swing rope transfer in the Gulf of Mexico between a platform and a boat, when a person fell into the sea. The person was recovered swiftly by a small boat but was injured and subsequently diagnosed with a torn ligament in his elbow requiring surgery.

BSEE subsequently revisited incident data to determine the frequency of personnel transfer incidents in 2017. The safety alert covers a number of recent incidents.



BSEE inspector's photograph of swing rope in place on a Gulf of Mexico facility

What actions were taken? What lessons were learned?

Due to the frequency of personnel transfer events noted, and their potential consequences, BSEE made recommendations which are summarised thus:

- ◆ Review the BSEE safety alert with all personnel who transfer to facilities via swing rope or personnel baskets;
- ◆ Before personnel transfer, inspect and test all hardware associated with the operation and report any deficiencies found;
- ◆ Stress the significance of patience, weather and sea conditions, and the use of the 'stop work authority';
- ◆ Consider developing fitness for duty requirements for personnel involved in transfers.

Safety Alert 331 can be found on the [BSSE website](#).

Members may wish to refer to [Guidance on the transfer of personnel to and from offshore vessels and structures \(IMCA SEL 025\)](#)

Members may also wish to refer to the following similar incidents:

- ◆ [Injury during personnel transfer capsule operation](#)
- ◆ [Fatality during basket transfer](#)

2 Stored Energy: Injury Caused by Failure of Expansion Joint in Fire-Fighting Equipment

What happened?

During a trial of fire-fighting equipment, a hose expansion joint or bellows failed. The release of pressurized water hit a crewman who was standing nearby, slamming him backward and knocking him unconscious. The fire pump was shut down and help was sought. CPR was administered; subsequently the injured person was medevaced.

This incident was considered by our member to be a potential fatality. The injured person was in hospital for some weeks.



What went wrong? What were the causes?

Some identified issues were:

- ◆ There was inadequate management of significant risk;
- ◆ There was no understanding of the life time of the expansion joint or bellows;
- ◆ There was no installation procedure provided for this bellows by the manufacturer;
- ◆ There was no preventive maintenance or inspection/testing of the failed equipment.

What actions were taken? What lessons were learned?

Our member drew the following lessons:

- ◆ There had been a similar rupture of a bellows some years previously; this earlier incident was not investigated. Had it been investigated, it might have helped in preventing reoccurrence;
- ◆ Engineering and design of critical equipment during new building should take into consideration personnel safety as well as equipment protection;
- ◆ There needs to be a better design review of pressurized equipment, particularly where different components are in use.

Members may wish to review the following incidents:

- ◆ [Ruptured Hydraulic Hoses](#)
- ◆ [Failure of a high pressure gas charging hose](#)
- ◆ [Working with hoses and pressure](#)



3 Three Fires

Incident 1: Property damage

A vessel was carrying two (working and loaded) deep freezers as deck cargo, destined for delivery to a platform. They were stored inside two metal baskets. A small fire/smoke was observed coming from one of the deep freezers.

The fire alarm was sounded. All crew mustered, initiated fire-fighting actions, isolated the electrical supply to the deep freezers, and put out the fire using a fire extinguisher. The client was informed.

What went wrong? What were the causes?

- ◆ The deep freezers were old and showed visible signs of lack of maintenance;
- ◆ Even the metal baskets did not have any wire mesh to promote air circulation;
- ◆ May have been due to over-heating due to poor air circulation between compressor and body of the metal basket.

What lessons were learned?

The deep freezers should have been placed so as to allow for adequate air circulation during transit.

Incident 2: Overheated Lead-acid batteries

Batteries for a remote valve control system were found overheated in an instrument room.

The batteries were immediately isolated, and the side covers of the battery bank opened. One bank of batteries had heated up and started smouldering.

What went wrong? What were the causes?

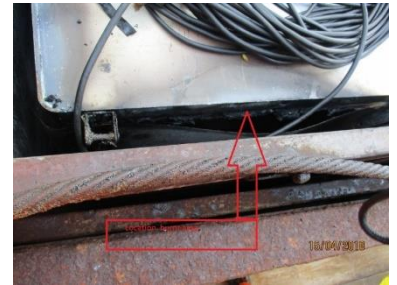
- ◆ Ventilation to the room was inadequate;
- ◆ There was no regular or adequate inspection of the batteries.

What actions were taken? What lessons were learned?

- ◆ The undamaged batteries were checked and found satisfactory. All clips on connectors were also checked for its tightness. Batteries of the affected bank were replaced;
- ◆ Advice was sought from the manufacturer;
- ◆ Inspection of these batteries to be part of planned maintenance system (PMS).

Incident 3: Property damage: minor fire in UPS

A fire alarm went off and smoke was discovered coming from a UPS (uninterruptable power supply) room supplying power to remote valves. The UPS was isolated from the main supply and the battery bank was isolated. A portable CO2 extinguisher was used on the UPS to prevent the possibility of fire. The vessel had to be removed for a time from location near a rig.



Operational guidelines for the equipment had not been followed. Planned maintenance procedures and manufacturer's instructions for maintenance of UPS should be followed at all times. The immediate cause of the incident in this case was wear and tear.



The risk of there being no UPS backup for the cargo valve control system, as a result of this kind of occurrence, should be taken into account.

A common theme in these four fires is overheating; though batteries and ventilation may also prove to be useful 'search words' when looking for similar incidents.

Members may wish to look at the following incidents:

- ♦ [Fire in vessel accommodation – overheating notebook computer](#)
- ♦ [Diver helmet hat light](#) [overheated owing to lack of cooling]
- ♦ [Mobile phone charger failures](#)

4 Vessel Engine Block Blown Open in and Around Cylinder

What happened?

A severe engine failure occurred during a major vessel overhaul. The connection rod on cylinder #12 parted from the connecting rod cap and punched a hole in the engine block. The engine had been running for 17 hours, carrying approximately a 20% load.

Parts of the engine block were found spread around the engine room, indicating that the outcome of the event could have been much worse, with potential for personnel injuries and a fire. At the time of the event, the engine room was vacated for lunch. No injuries were sustained, there was no spill of fluids and no fire.



Showing the connection rod on the cylinder blown through the engine block



Debris found spread around the engine room

What went wrong?

Failure to change out and correctly torque up four temporarily installed connection rod bolts. The four bolts were temporarily installed. Preliminary investigation revealed high pressure on work schedule, poor handovers, lack of checklists and incorrect marking of cylinder #12.

What actions were taken? What lessons were learned?

Our member noted the following:

- ◆ Focus on correct and sufficient management of change (MoC) and handovers processes;
- ◆ Use of checklists and marking/signage during work on engines;
- ◆ Limit personnel exposure during start-up of overhauled engines.

Members may wish to review the following incident:

- ◆ [Exhaust valve cage assembly blow-out](#)

5 Accidental Activation of Expired Pyrotechnics (hand flare)

What happened?

During a vessel dry dock, smoke was observed coming from a forepeak store, which was also accessible from the mess room. Expired hand flare pyrotechnics, boxed and packed up for landing ashore, had been accidentally activated by yard personnel on board for cleaning and chipping the chain locker.

The alarm was raised and the necessary steps were taken for the safety of the crew and yard personnel.

What went wrong? What were the causes?

- ◆ Procedures were not followed:
 - the third-party contractor personnel had been briefed regarding the company's safety management system (SMS) but this incident still took place
 - where third-party personnel are working, the area should be thoroughly checked for any unsafe practices that can take place.

What actions were taken? What lessons were learned?

- ◆ It was noted that since the forepeak store was also a provision store with access from the mess room, the risk of theft or pilferage could not be neglected;
- ◆ The expired pyrotechnics were sent back to the approved vendor.

Members may wish to look at the following incidents:

- ◆ [Lost time injury \(LTI\) caused by inadvertent activation of expired line throwing device](#)
- ◆ [Exploding light and smoke marker](#)
- ◆ [Disposal of pyrotechnics](#)



6 Hangar Door Failure and Collapse

What happened?

Whilst a vessel was working, there was a failure and collapse of the moonpool hangar doors. Deck crew were working in the area of the moonpool, when they heard a loud bang. When they turned around they could see that the hangar door had fallen down and folded in the guide rails. The door was 7.2 meters wide, 13 meters high and weighed approximately 200 kg. There were four crew members in the hangar at the time of the incident.



What went wrong? What were the causes?

The suspension points for the hangar door leaf had failed.

The causes were:

- ◆ Inadequate and weak design for holding hangar door leaf to head box;
- ◆ Increased wear and tear because there were no formal instructions or procedure for the operation of the hangar door;
- ◆ Possible additional wear and tear due to suction from the moonpool;
- ◆ Hangar doors were not part of the recommended planned maintenance system (PMS), and it was not possible to inspect the suspension points holding the door leaf.

What lessons were learned?

- ◆ Highlight the importance of knowing the operational limitations or requirements for any equipment;
- ◆ Ensure that personnel operating equipment (e.g. hangar doors) are properly familiarized with it;
- ◆ Consider further possible risk of potential dropped or falling objects, especially where inspection of condition is not possible.

What actions were taken?

- ◆ Implemented proper instructions for the operation of hangar doors and updated familiarization;
- ◆ 6mm stainless steel flat bar was installed inside an aluminium profile holding the folding door to header box in order to make the construction more rigid and solid;
- ◆ Installed safety lashings to prevent the folding door upper mount from falling to deck if overloaded.

Members may wish to refer to the following incident:

- ◆ [Container door hinges failure: container door fell on deck](#)

