IMCA Safety Flash 21/18

September 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.

Equipment failures

All the incidents here arise from failure of equipment for one reason or another. No persons were injured in any of these incidents. Members may wish to look at the risk and hazard of equipment failure, arising from (and not limited to) the following immediate causes: poor or inadequate maintenance, inadequate parts, corrosion, extremes of temperature, and failure to follow procedures.

1 Unplanned Deployment of Free Fall Lifeboat

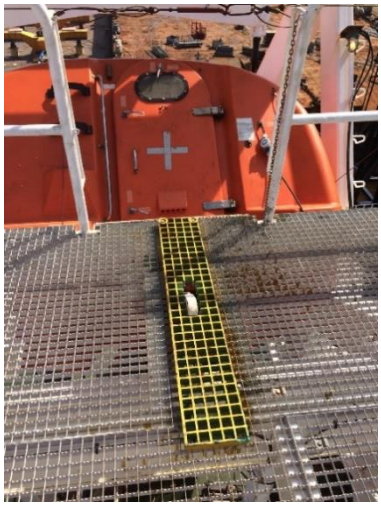
What happened?

On a vessel alongside there was an unplanned deployment of a free fall lifeboat (FFB), which no-one was aware of. There were no witnesses to the inadvertent launch, which occurred within a three-hour time window between 1500 and 1800 hrs.

A crew member noticed the boat in the water and investigation began. Crew boarded the lifeboat and it was found that the release hook was still in the locked position and safety pin was in position. Also, the master link in the hook was in good condition. It was not understood how it could have happened. The bow of the lifeboat sustained damage, coming from collision with a barge moored about 20m behind the vessel. The barge was undamaged.

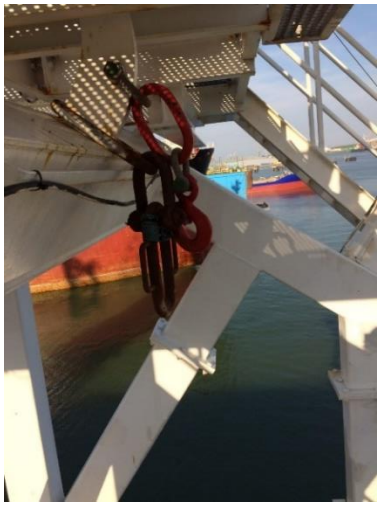
There had been an inspection of the lifeboat earlier in the day but nothing unusual had been noticed. The inspection team did not enter the lifeboat as the maintenance hook was disabled, but no unusual hook configuration was noticed.

The vessel had in recent days come out of dry dock, when there had been an annual inspection of the lifeboat by the manufacturer. That inspection had included a check & test of the boat and the hook. At the end of the docking period, the FFB was placed back on the vessel. Thereafter, the vessel had a short (calm) sea voyage (1 day) to her next port.



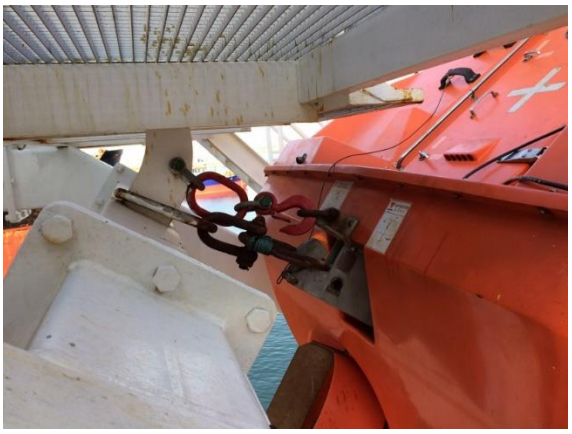
Normal stowage position

Location after accidental release

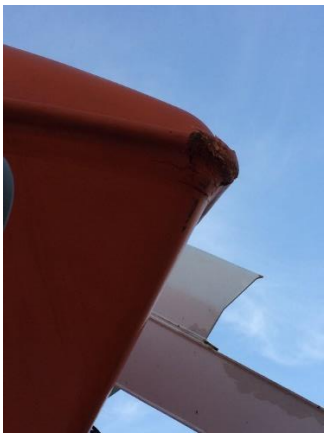


Master Link and maintenance hook (red painted) after release

Lifeboat retrieved back in cradle



Close up of connection after retrieving back (maintenance hook applied for security)



Damage to the bow

What went wrong?

Investigation by both company safety professionals and by the manufacturer revealed no clear root cause or technical defects which might have contributed to the incident. The lifeboat was four years old and complied with all legislation and certification.

What were the causes?

By eliminating the technical failures or human intervention, the only possible explanation is that the master link was not properly placed on the release hook, and gradually slipped out of the hook over time.

What actions were taken?

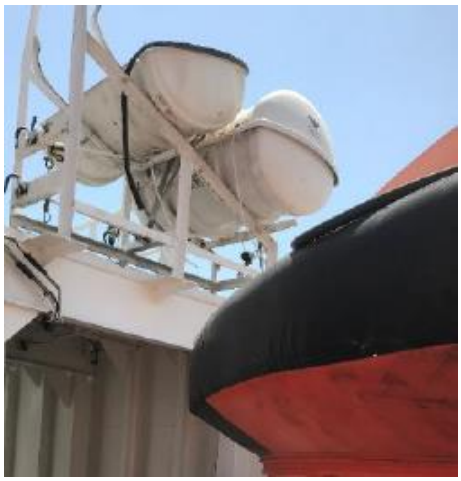
- Re-assessment and careful positioning of the master link when replacing the lifeboat;
- Temporary downgrade of lifeboat safety certificate (fewer POB);
- Assessment of risk for maintenance (securing) hook to be permanently on the lifeboat when the vessel was at sea (there was no objection from Class). However, it was decided not to do so. The reason for this was the risk following from a more complicated emergency procedure for the crew in emergency was considered too high;
- The maintenance hook to be used always when in port, or during maintenance at sea.

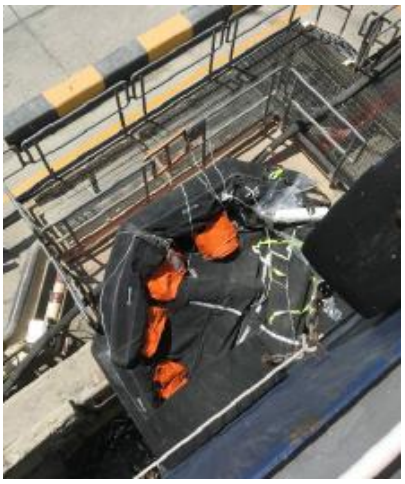
Our member is not satisfied with the current root cause and brings this safety incident to the attention of all IMCA members.

2 Life Raft Self-Activates and Falls to the Quayside

What happened?

A life raft self-activated and fell from its cradle from the vessel deck, 8m down onto the barriered quayside bollard area. The weather temperature at the time was 44°C.





The life raft securing straps, pennant line and life raft station security belts were inspected, and no signs of external impact observed. Investigation identified that the life raft self-inflated following sudden release of gas from the gas cylinder. Further inspection of the cylinder by a third-party showed no damage or corrosion to the bushing disc or the circular piece cut; internal inspection of the cylinder found no excessive surface corrosion.

There were no personnel injuries, and no property damage.

What were the causes?

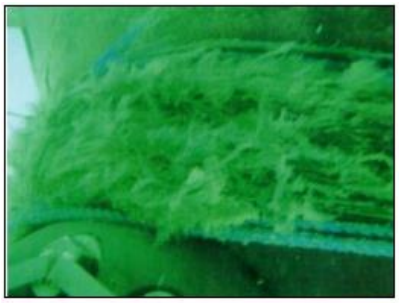
- The gas cylinder was not properly serviced by a third-party service provider;
  - investigation identified that improper torque force was applied to cylinder valve disc bushing
  - the disc was not wound back while the cylinder was being filled. This bent the disc towards the anvil and pushed it hard against it. This could have damaged the disc and then failed as the pressure rises on a hot day
  - potential damage to diaphragm and overfilling of cylinder, added to build-up of pressure due to the extreme heat over a sustained period, could have led to the diaphragm failure.

What lessons were learned?

- When servicing OEM supplied equipment, manufacturer's service manual requirements should be complied with at all times;
- When making use of third-party providers, ensure that there is proper communication and ensure an effective service provision assurance process is implemented.

Members may wish to consider such issues as control of sub-contractors and third parties, in addition to the technical cause here relating to equipment failure in extreme heat.

3 Costly Damage to Azimuth Thruster Caused by Fishing Gear



What happened?

A vessel equipped with two azimuth thrusters, was performing operations alongside an offshore platform, when inappropriate vibrations were noted from the starboard azimuth thrusters and its hydraulic pump.

Investigation revealed the presence of seawater in the thruster oil system. The vessel left the platform using the port engine only and an underwater survey of the propellers was carried out on location. That underwater inspection showed rope and fishing nets fouling the starboard propeller and azimuth unit. The presence of oil around the propeller hub was also noted. The vessel had to go into dry dock, and the thruster assembly, including propeller blades and Kort nozzle, had to be removed for repair.

Repairs cost hundreds of thousands of dollars and the vessel was off hire for nearly ninety days.

What went wrong? What were the causes?

- Rope and fishing net fouling found on the starboard azimuth thruster;
- The seal was damaged by the fishing net;
- Seawater presence was observed in the hydraulic system;
- Reduced lubrication quality of the hydraulic oil caused damage to thruster components;
- Vibrations were noted on the hydraulic pump. Suction filters were found clogged with water and oil residues.

During the overhaul, additional delays were caused by:

- Some parts which were not included in initial order for the full overhaul scope;
- Delay in spares delivery by the manufacturer.

What lessons were learned?

The thruster manual states the hydraulic oil should be visually inspected daily; this was arranged by crew, but the task was not present in the planned maintenance system (PMS).

What actions were taken?

- Crew should check equipment manuals and ensure correct maintenance intervals have been added to the PMS;
- Manufacturer to study the possibility of installing a net cutter on the propeller shaft;
- In order to recognize water ingress caused by leakage quickly, equipment to facilitate random chemical sampling to determine water content should be installed.

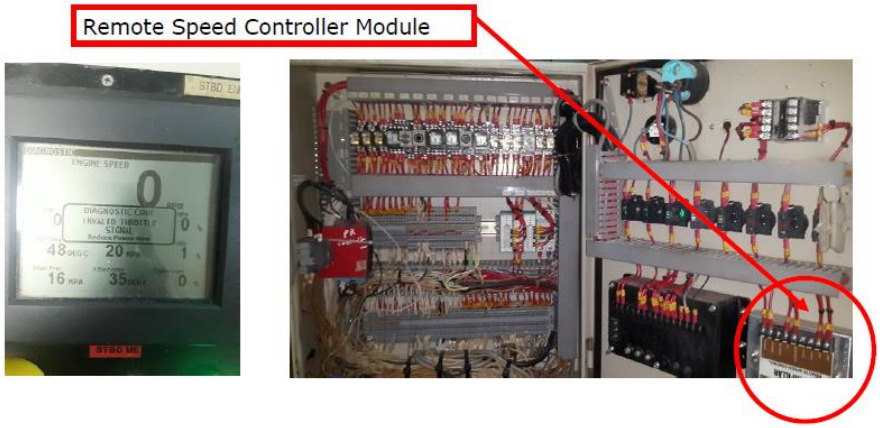
Members may wish to review the following:

- Mooring rope fouled the propeller and parted
- Rope on propeller causing partial loss of propulsion

4 Control Module Failure Caused Main Engine Sudden Reduction to Idle Speed

What happened?

An offshore support vessel (OSV) was underway to field loaded with cargo when a sudden drop of starboard main engine RPM was observed. The main engine dialog screen gave the error message <invalid throttle signals>. The engineers informed the bridge immediately. Investigation began; the onshore office and the client were also informed. With the client, it was decided to take the vessel back into port as a quick fix was not available.



What went wrong? What were the causes?

- The remote speed controller module had failed;
- The cause was overheating for a prolonged period;
- The root cause was assumed to be extremely unfavourable conditions (hot and humid) in the engine room, leading to unexpected and unpredictable failures of electronic components because of high temperatures.

Recommendations

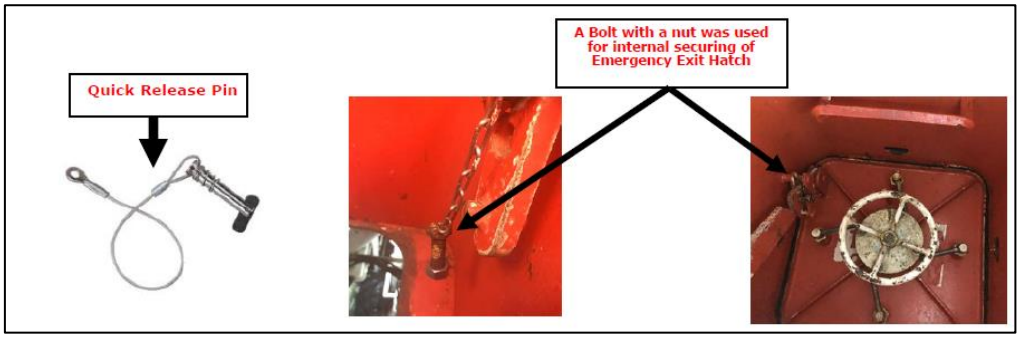
- Crew should remain aware of and alert to the likelihood of unexpected equipment failure under extreme conditions of heat;
- Sufficient spares of potentially vulnerable electronic items should be carried and stored appropriately.

Our member started a fleet-wide study of the effects of high engine room temperatures on electronic control equipment.

5 Inadequate Maintenance and Securing Arrangements of Emergency Exit Hatches

What happened?

The port side emergency exit to deck from the steering gear room failed to open during an inspection by shore-side management. In addition, inappropriate locking arrangements (bolt with a nut) were found used for various emergency exit hatches located on both sides of the main deck.



What were the causes?

- There were inappropriate locking arrangements for emergency exit hatches – these should not be used. This practice could have led to a potentially hazardous situation where the hatch could not be opened.

What lessons were learned?

- As per company planned maintenance schedule, the correct and full operation of all watertight doors and escape hatches should be checked on a weekly basis;
- Safety inspections and maintenance of critical equipment should be conducted in an effective manner.

Members may wish to refer to the following incidents:

- Engine Room Emergency Hatch Damage
- Lost Time Injury (LTI) and restricted workday case (RWC) following failure of diving bell door system