IMCA Safety Flash 03/20

January 2020

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 Near Miss During Helicopter Operations

What happened?

During helicopter flight boarding, a member of the crew crossed a hard barrier (stairway access chain) with a restriction sign and approached the flight deck from the aft stairway while boarding activities were ongoing on the forward side.

A member of the helicopter emergency response team – an offshore helideck assistant – attempted to intervene by shouting. The warning did not prevent the crew member from approaching the helicopter from the uncontrolled or prohibited direction and from passing beneath the tail rotor blades.

The HLO was controlling boarding from the forward stairway. From CCTV records, it is estimated that distance between the crew member and the rotor tail was approximately 1.5–2m. No injury occurred during the event.

What went wrong? What were the causes?

- The crew member did not follow safety rules on helideck (i.e. to NOT pass under the tail rotor);
- The HLO lost control of situation;
- Employee removed a safety barrier (chain);
- There was no signalman available to guard the safety barrier (chain);
- Employee was not escorted when ascending the stairs.

Some contributory factors identified by our member were:

- The helideck readiness check was performed in an ineffective way;
- The helideck check list did not include a line item concerning how to correctly fold the foldable handrails in advance of helicopter landing and take-off. During the investigation, the foldable handrails had been found folded in the wrong direction;
- Passenger embarkation had been delayed by handover.

What lessons were learned?

- **Human Errors and Safety Barriers:** human error can reduce or even eliminate the effectiveness of a physical barrier (chain, handrail, safety tape, etc.). Human error occurs when an incorrect action takes place, but the person involved believes the action to be correct. A human error involves an incorrect judgment.
- In this specific case the passenger demonstrated full awareness of the safety barrier rules; however, the misleading evaluation of being left behind by other passengers allowed the passenger to make the mistake of removing the barrier. He was convinced that he was authorized to reach the helideck as part of the boarding passengers and the removal of the barrier was not thus perceived by the individual as a safety violation.
- The human factor should always be considered during the design of safety systems.

What actions were taken?

- Changes to risk assessments, procedures and safety management systems (SMS) are omitted as understood;
- During helicopter briefing, ensure passengers understand reasons for following the rules and the consequences for deliberately not following them;
- Improve clarity on access route to use (e.g. flashing lights or directional signs) to identify the access in use for helicopter embarkation and provide dedicated embarkation/disembarkation facilities for personnel and baggage.

Members may wish to refer to:

- High potential near miss: passenger on a CTV narrowly avoided being crushed between vessels [Same immediate cause, a passenger, for reasons of haste and anxiety, acted outside of his normal behaviour and put himself in considerable danger]
- Near Miss: Potential Fall Through CTV Hatch [similar causes, including passenger compromising his own safety by going back on board the CTV without alerting the crew]

2 Explosion and Fire On-board the Chemical Tanker *Stolt Groenland*

What happened?

The UK Marine Accident Investigation Branch (MAIB) has published its interim report into a serious explosion and fire on-board the chemical tanker *Stolt Groenland* on 28 September 2019 at Ulsan in South Korea. The incident occurred during ship-to-ship transfer of highly flammable styrene monomer, one of 20 different chemical cargoes the vessel was carrying in 37 of its 39 cargo tanks.

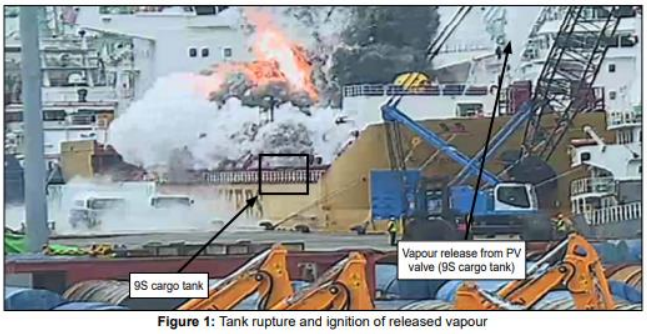


Figure 1: Tank rupture and ignition of released vapour

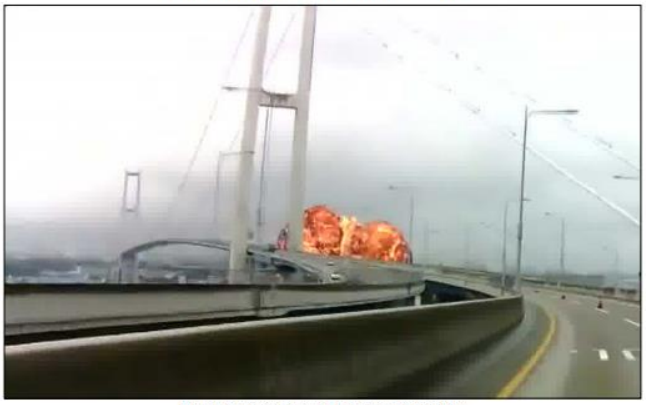


Figure 2: Fireball viewed from the Ulsan bridge

At 1043, vapour started to release from a pressure vacuum valve for the tank which contained styrene monomer. About two minutes later, a high-level alarm indicated that the level in the tank had reached 95%, soon followed by a 'high-high' level alarm indicating that the level had increased to 98%. By now, *Stolt Groenland*'s on-watch deck officer and chief officer had made their way to the cargo control room.

At 1050, two explosions were seen and heard in rapid succession in way of the tanker's cargo manifold. The resulting fireball passed very close to a road bridge above the quay.

The fire was fought from the shore and from the water and lasted until the early hours of the following morning. There was extensive damage to the vessel and a number of crew and firefighters were injured.

What went wrong?

The MAIB's initial findings were that the explosions were probably caused by the rupture of the deck above the cargo tank, followed immediately by the ignition of the styrene monomer vapour that was then released. The rupture was due to over-pressurisation and the likely sources of the ignition were static electricity, sparks or elevated steel deck plate temperatures resulting from the tank rupture.

The full interim report can be found here.

Members may wish to refer to:

- UK HSE Investigation Into Offshore Gas Explosion
- Near Miss: Cement Tank Hatch Failure

3 Worker Fell into Sea from Gangway and Drowned

What happened?

The Singapore Tripartite Alliance for Workplace Safety and Health (WSH) has published Accident Notification 1920060 relating to a fatal fall from a gangway. This incident is still under investigation.

On 23 October 2019 around 5pm, a worker embarking onto a launch boat from a vessel gangway lost his balance and fell into the sea. The body of the worker was subsequently found in the sea.

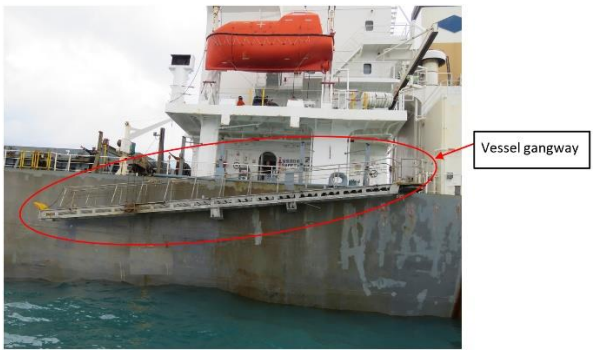


Figure 1: Photo of the vessel and its gangway.

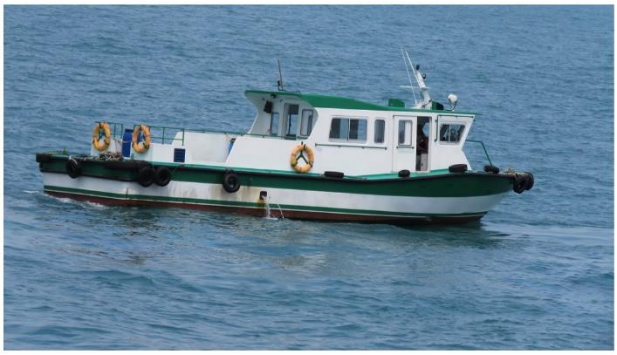


Figure 2: Photo of the launch boat

The WSH makes a number of recommendations including:

- Pre-embarkation briefing;
- Ensuring workers are physically fit for the transfer;
- Ensuring transfer takes place in favourable conditions;
- Ensuring all are properly briefed on safe use of gangways;
- Ensuring that there is sufficient and appropriate supervision of transfers;
- Wearing of appropriate personal protective equipment (PPE).

A fuller treatment of the incident is available here.

Members may wish to refer to:

- IMCA HSSE 025 *Guidance on the transfer of personnel to and from offshore vessels and structures*

4 MAIB: Fatal Man Overboard Incident Whilst Boarding Tug

What happened?

The UK Marine Accident Investigation Branch (MAIB) has published Accident Investigation Report 15/2019 into a fatality whereby a man fell overboard whilst boarding a tug at an oil terminal at Birkenhead, England.

At 1749 on 27 January 2019, the chief engineer on-board the tug *Millgarth*, fell into the water from the North oil stage at the Tranmere Oil Terminal at Birkenhead, England. He had released *Millgarth*'s mooring lines and was attempting to re-board the tug. His lifejacket inflated automatically on entering the water and his crewmates were able to recover him alongside the tug within 5 minutes. The crew were unable to lift the chief engineer out of the water because he had quickly become incapacitated in the cold water and lost consciousness. He was recovered at 1811 by the crew of rescue boat *Marine Fire Rescue 1*; he had suffered cardiac arrest and could not be revived.

Figure 3: Oil stage steps and *Millgarth*'s bulwark access gate (photograph taken during post-accident reconstruction)

What went wrong?

The MAIB notes:

- Accessing the tugs via the oil stage fenders at the Tranmere Oil Terminal was a common practice and was extremely dangerous, particularly in poor weather conditions;
- The lack of safe access to and from Svitzer tugs at Tranmere Oil Terminal had been recognised for at least 14 years prior to this accident and had been raised at safety committee meetings and during company inspections many times prior to this accident;
- Svitzer UK and Essar did not formally identify and evaluate the shared risks associated with access to and from an unmoored tug or discuss how these could be mitigated;
- The crew had not been fully prepared to deal with the emergency situation and were unfamiliar with the use of the tug's MOB rescue-sling

Recommendations

- On 14 June 2019, the MAIB carried out a preliminary assessment of a non-fatal man overboard incident on *Svitzer Victory*. Due to the similarity of this incident with the fatal accident on *Millgarth*, the Chief Inspector of the MAIB issued an urgent safety recommendation (2019/115) to Svitzer A/S concerning the safe conduct of tug access and egress;
- This report makes further safety recommendations (2019/121 and 2019/122) to Svitzer A/S regarding the dissemination and closure of audit findings, attendance at man overboard drills and the use of man overboard recovery equipment.

Members may wish to refer to:

- MAIB report 19/2016: fatal accident while manoeuvring *Svitzer Moira* alongside an unmanned tug Royal Portbury Dock, Bristol on 29 December 2015
- Near Miss: Unauthorised Release Of Shore-Controlled Mooring Lines
- Non-Fatal Man Overboard Incident

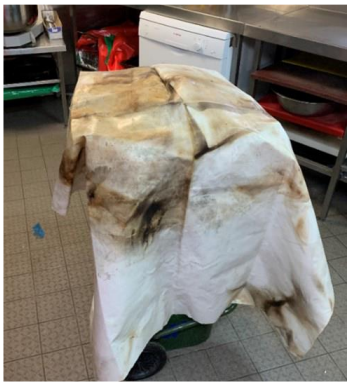
5 Poor Condition of On-board Equipment

What happened?

During 'safety walk arounds' on one of our members' vessels, certain equipment was seen to be in poor condition. In the first case, a fire blanket in the galley; in the second, a portable step ladder.

Fire blanket

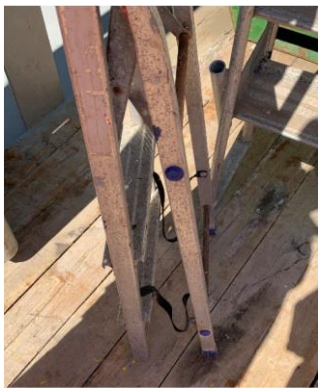
A galley fire blanket had been used for fire extinguishing and packed away again, but no incident report was made of a fire having taken place. It was clear that the fire blanket had not been inspected for a long period of time.



- **What were the causes – procedures not followed:**
  - our members' internal instructions for master's inspections and fire prevention requirements had not been followed
  - there had been no weekly inspection of fire blankets conducted by crew despite procedural requirements to do so;
- **What actions were taken:**
  - when conducting any inspection, ensure that all items on the inspection checklist are thoroughly checked – not 'just a tick box exercise'
  - any incident (such as a small fire in this case) however trivial should be reported immediately
  - further inspections of all on-board safety equipment was indicated in this case.

Step ladder

A damaged ladder was observed as in use on the vessel deck during vessel walk around. Further inspection revealed another ladder in similar condition in regular use.



- **What went wrong:**
  - signs of corrosion on ladder
  - plastic support missing on bottom of ladders legs;
- **What were the causes – procedures not followed:**
  - no regular and pre-use inspection of ladders established on-board
  - fall prevention requirements not followed: inspect all ladders and lifting equipment regularly and perform the required maintenance;
- **What actions were taken:**
  - all on-board ladders to be inspected, numbered and labelled on a monthly basis
  - all damaged ladders to be removed from vessels and replacements ordered
  - crew to be refreshed on the importance of conducting pre-start checks on all ladders.

Members may wish to refer to:

- Unsafe actions and conditions – inhibited alarm buttons
- Raising awareness on safety barriers such as railings and gratings
- Near Miss: Corrosion-related failure of bolts used to secure lifeboat winches
- Near Miss: Un-noticed expiry and deterioration of carbon dioxide absorbent material