IMCA Safety Flash 27/18

December 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 Third-Party High Potential Near Miss – Dropped Gangway

What happened?

During barge operations at a spool fabrication yard, a high potential near miss occurred when a gangway positioned between the quayside and barge fell 2.4m, landing on the barge. At the time of the incident, there were no personnel in the vicinity of the gangway. However, only minutes earlier, personnel had been using the gangway to access the barge.

Gangway secured at the high end on the quayside using a cargo strap (cargo strap in direct contact with abrasion point).

Gangway secured at low end (roller end) using a cargo strap.

What went wrong? What were the causes?

- The method used to secure the gangway securing took no account of a tidal range of 7.5m;
- The position of the cargo straps securing the gangway on the quayside meant that the straps were in direct contact with the quayside edge, an abrasion point, at low tide;
- The task was perceived as ‘routine’; the personnel involved did not identify the potential for the cargo straps being exposed to an abrasion point and thus failing;
- The gangway was designed with a roller on its lower end to enable free movement, but this was incorrectly secured, producing tension and failure of the upper securing method;
- Inspections of the gangway were conducted; however, they failed to identify the potential for the quayside cargo straps to be exposed to abrasion, or that the gangway had been secured at both ends.

What lessons were learned?

- A task risk assessment should consider and assess the following:

- identification and communication to all stakeholders to establish who is responsible for setting up, monitoring and inspecting gangways
- expected tidal changes and potential vessel movements (due to sea state/weather/vessel traffic in the vicinity) when setting up and securing gangways
- appropriate rigging of gangways (gangways which are designed to be free moving are not to be secured at the roller end and should have sufficient space to travel and accommodate the tidal range and any barge movements)
- regular inspection of the gangway to include free movement of any rollers, checking that the securing method is free from obstructions and abrasion points.

Members may wish to refer to:

- Guidance On The Transfer Of Personnel To And From Offshore Vessels And Structures (IMCA SEL 025)

2 *"Don't forget about gangways and ladders"* – USCG: Pilot Dies in Gangway Accident

The United States Coast Guard (USCG) has published Safety Alert 14-18 regarding a fatal gangway accident.

Whilst boarding, the gangway separated from the vessel and two individuals fell into the water. Investigations into this incident are still taking place, however it is a reminder that everyday equipment onboard vessels can become hazardous when boarding and departing.

Risks and hazards need to be properly recognised and appropriately mitigated on commercial vessels. Hazards can be presented by:

- Rotating machinery;
- Electrical systems;
- Severe weather or potential fire.

Mariners could become complacent in recognising hazards, and therefore not appreciate the hazards that a gangway could present. Some organisations have recognised the risk of injury and/or fatality, and have appropriately developed gangway safety standards, requirements and best practices to be implemented onboard.

The USCG have named the following as having put forward requirements and best practices to improve gangway safety:

- Occupational Safety and Health Administration (OSHA);
- International Maritime Organisation (IMO);
- Protection and Indemnity Clubs;
- Owners and Operators
- Others.

Due to the above-mentioned fatality, the USCG has strongly recommended:

- "Owners and operators, captains and mates review and implement the best practices as presented in the above links and comply with all the regulations applicable to your vessel;
- For vessel pilots, crews, vendors, or anyone boarding or departing a vessel, condition yourself to take a moment to examine the gangway, accommodation or pilot ladder. Look for potential hazards or deficiencies and report them to senior personnel onboard the vessel."

The USCG notes: *never assume that a gangway crossing is 'routine' – if there are any concerns regarding the safety of a crossing, do not cross – report your concerns.*

The full safety alert can be found on the USCG website.

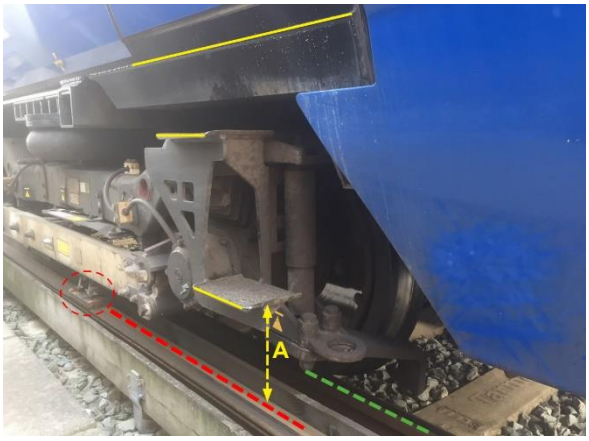
3 Crisis Management: Rail Industry High Potential Near Miss

"Thirty centimetres of safety"

The UK Rail Accident Investigation Branch (RAIB) has published its report into the detrainment of passengers onto electrically live track near Peckham Rye station on 7 November 2017.

What happened?

A train with 450 passengers on board failed just outside a railway station during the evening rush hour. The fault on the train had caused the brakes to apply and the driver was unable to release them. The driver took advice over the radio and, following this, began to evacuate the passengers to track level. This involved passengers climbing down vertical steps to ground level, to within 30 centimetres of the live electric conductor rail (750 V direct current), and walking along the side of the line for about 30 metres to the station.



Although no-one was hurt in the incident, the close proximity of the energised conductor rail to the evacuating passengers posed a significant risk of serious harm.

What went wrong? What were the causes?

- Causes identified by the RAIB:
  - the train driver was given **instructions by control room staff who had misunderstood** the actual location of the stranded train (the control room staff thought the train was actually in the station)
  - the train driver and the signaller **did not reach a clear understanding about the actions that were required** to safely detrain the passengers
  - the delay caused unrest among the passengers on the train and contributed to **stress and task overload of the driver, which affected his decision making**
  - the driver's experience and skills did not enable him to cope with these demands, and **those responsible for the track did not effectively implement their own procedures** for managing an incident involving a stranded train;
- Underlying factors identified:
  - railway management and signalling staff were not adequately prepared to manage the incident
  - railway industry standards and procedures relating to stranded trains *place little emphasis on the need for practical training* for those involved.

What lessons were learned?

- The importance of following the correct procedures when preparing for incidents and/or emergencies;
- Ensuring that communications are properly understood;
- Ensuring that details of incidents are promptly and effectively communicated.

Although this safety flash incident is not directly related to the offshore industry, the learnings are central to the way IMCA members do business, in particular with relation to crisis management, dealing with incidents, and with crewing levels, training and competence of staff in a lean market.

The UK Rail Accident Investigation Branch report can be found here.

An article on the incident from London transport website www.londonreconnections.com can be found here.

4 BSEE: Failure of Crane Hydraulic Boom Cylinders

The US Bureau of Safety and Environmental Enforcement (BSEE) has published Safety Alert No. 342, regarding two crane failure accidents, identical in incident. Both accidents occurred during operation on a platform in the Gulf of Mexico during 2018.

Incident 1

Incident 2

In the first incident, a hydraulic boom cylinder recently installed was compromised when the cylinder rod separated from the cylinder rod eye. This caused the cylinder to drop to the deck below. As there were two cylinders on the crane, the failure did not cause the boom to collapse.

In the second incident, a replacement for the above-mentioned failed cylinder suffered the exact same failure. In this second instance, the replacement cylinder fell and hit a handrail.

Both failed cylinders and the remaining attached cylinder were sent to a hydraulics/cylinder specialist for inspection. The specialist found the following:

- In the cylinders that failed, the pin-to-pin lengths were different – this was due to different rod lengths;
- The difference in rod lengths meant that when the cylinders were working in tandem, the shorter length cylinders experienced stress at the rod pin coupling;
- The stress, alongside an inferior weld, resulted on a failure of the rod pin coupling and rod connection. This failure led the rod to separate from the rod pin coupling, causing the cylinder to fail.

BSEE recommended that operators consider the following in the future:

- Ensure equivalent eye-to-eye rod length of hydraulic boom cylinders, when repair of one is necessary;
- Review crane cylinder configurations;
- Make the original equipment manufacturer aware of the failures (regardless of the manufacturer) – BSEE recommends that operators obtain any replacement hydraulic boom cylinders from the original equipment manufacturer, or a certified manufacturer.

The full safety alert can be viewed on the BSEE website.

5 Pipelay Technician Sustained Cut to Wrist Whilst Handling Testing Equipment

What happened?

During pipelay operations, two non-destructive testing (NDT) technicians were handling a 'scanner belt', which is used to connect the automated ultrasonic testing (AUT) scanner to the pipe for testing pipeline welds. On completion of weld testing, the scanner belt (approx. 10kg) was released by one of the technicians, and it 'slipped

off' the pipe and made contact with the other technician's wrist. This resulted in a laceration which required 8 stitches. The injured person was wearing full personal protective equipment (PPE). However, the scanner belt made contact with his wrist which was exposed through the gap between the coverall-sleeve and glove.

Image 1: Showing position of Technicians when handling scanner belt (note: full-length gloves shown in image not worn at time of incident)

Image 2: Scanner belt end section, following removal of sharp edges & corners of scanner belt

Image 3: Recommended Kevlar/cut proof arm sleeves, to protect the forearm & wrist areas from potential sharp edges

What went wrong? What were the causes?

- The equipment design did not account for sharp edges and potential risks during manual handling;
- Personnel involved in the task did not identify the potential for exposure to sharp edges on equipment, and had perceived the task as 'routine';
- The injured person did not have clear communication or eye contact with the other technician who released the scanner belt. It was also found that language barriers between the technicians contributed to poor communication;
- The injured person's coverall sleeve had 'crept up' when his arms were reached out, exposing his wrist to contact with equipment.

What actions were taken? What lessons were learned?

- Review of tasks that involve repetitive manual handling of equipment, to ensure that potential sharp-edge hazards are identified and appropriately controlled;
- Communicate safe manual handling techniques for tasks that involve more than one person dealing with equipment at the same time. This should include focus on good communications to prevent loss of control;
- Review of similar tasks and associated PPE controls, to identify potential exposure to forearms or wrists, when arms extending outwards or upwards. Consider use of cut proof arm protection, as shown in images above;
- Reinforce the need for the continual review of controls associated with 'routine' tasks, during toolbox talks (TBT) and hazard inspections.

Members may wish to review the following incidents:

- Crewman suffers cut to hand – but gloves prevented it being much worse
- Lost Time Injury (LTI): finger injury whilst working in engine room
- Worker sustained severe facial injuries during vessel maintenance