IMCA Safety Flash 13/20

April 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.

Summary

The first two incidents in this Safety Flash come from the UK's Marine Accident Investigation Branch. The Marine Accident Investigation Branch (MAIB) examines and investigates all types of marine accidents to or on-board UK vessels worldwide and other vessels in UK territorial waters. Its role is *"to contribute to safety at sea by determining the causes and circumstances of marine accidents and, working with others, to reduce the likelihood of such causes and circumstances recurring in the future."*

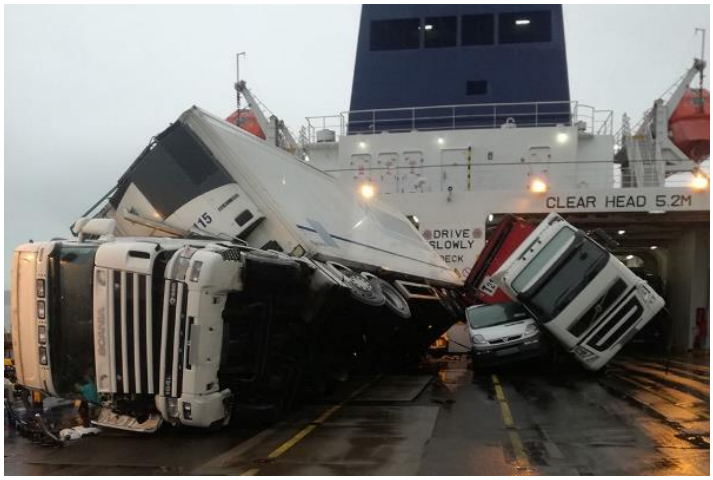
The MAIB has published a Safety Digest which draws the attention of the marine community to some of the lessons arising from investigations into recent accidents and incidents.

1 Recent UK MAIB Investigations (Shifting of Cargo and Loss of Cargo)

The UK MAIB (Marine Accident Investigation Branch) has released two reports recently relating to incidents involving the shifting of and loss of cargo.

Cargo shift and damage to vehicles on board ro-ro passenger ferry *European Causeway*

A roll-on/roll-off (ro-ro) passenger ferry rolled heavily in very rough seas and very high winds during its voyage from Larne, Northern Ireland to Cairnryan, Scotland. The violent motion caused several freight vehicles to shift and nine to topple over. This resulted in damage to 22 vehicles, some damaged severely. At least six freight vehicle drivers had remained in their cabs on the vehicle decks during the crossing and four were found in cabs of vehicles that had toppled over. One driver was trapped and had to be freed by the emergency services when the ship arrived in Cairnryan.



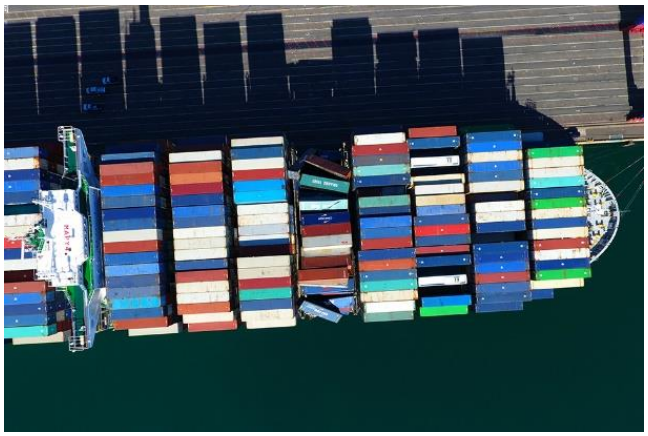
What went wrong?

- The route being followed had not been adjusted sufficiently to mitigate the effects of the sea conditions and reduce the likelihood of severe rolling;
- The sea fastenings for the vehicles were insufficient for the forecasted weather conditions;
- The vessel's approved cargo securing manual provided limited guidance to crew;

- Drivers remaining in their vehicles during the ferry's passage, in contravention of international regulations and company policy.

See here for full Accident Investigation Report 3/2020.

Loss of cargo containers overboard from container ship *CMA CGM G. Washington*



A container ship unexpectedly rolled 20° to starboard, paused for several seconds, then rolled 20° to port. The ship was experiencing very heavy seas in the North Pacific Ocean while on passage from Xiamen, China to Los Angeles, USA. In daylight the following morning, the crew found that three container bays had collapsed, with 137 containers lost overboard and a further 85 damaged.

What went wrong?

- There were non-standard 53ft containers with reduced structural strength;
- There were inaccurate container weight declarations, mis-stowed containers and loose lashings.

See here for full Accident Investigation Report 2/2020

Members may wish to refer to:

- Near Miss: Cargo Shifted In Heavy Seas Whilst Alongside Platform
- Near Miss: Cargo Shifted On Deck In Heavy Weather

2 Grounding of Ro-Ro Freight Vessel *Seatruck Performance*

The UK MAIB (Marine Accident Investigation Branch) has released Accident Investigation Report 4/2020 into the grounding of a freight vessel.

This roll-on/roll-off (ro-ro) freight vessel ran aground while transiting the Greenore Channel in Carlingford Lough, Northern Ireland, soon after departing Warrenpoint for passage to Heysham, England. The ferry quickly developed a 7° list but was able to return to Warrenpoint without assistance. There were no injuries to its 11 passengers and 22 crew, nor any pollution. Subsequent survey and dry dock identified that a tank and a void space on the ferry's port side had been breached. The ferry was out of service for 3 weeks.

What were the findings?

- The potential for **squat** was not considered when calculating the ferry's under keel clearance before departure, or when considering its speed;
- Shallow water effects were experienced as the ferry approached the intended alteration, which affected both heading and speed, due to the under keel clearance and the proximity of a charted bank on the south side of the channel;
- The Master was steering by hand, which reduced his ability to maintain an overview of the situation, and a lack of support from the bridge team made him a single point of failure;

- The navigational practices being used by *Seatruck Performance's* bridge team did not fully incorporate the electronic aids available and were insufficient to assure the vessel's safe outbound passage, at night.

What were the recommendations?

- Raise awareness of shallow water effects and improve on-board passage planning;
- Take further measures to optimise the use of electronic navigation systems and enhance bridge resource management training.

Members may wish to refer to:

- Grounding And Flooding Of Ferry – Complacency
- Guidelines for the use of multibeam echosounders for offshore surveys (IMCA S 003), Section 3.9

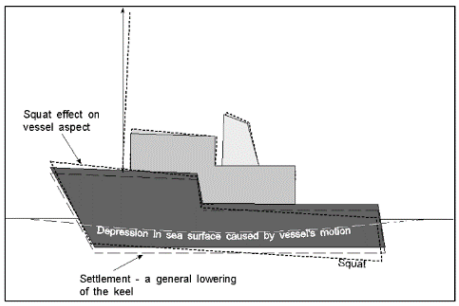


Figure 3 – Squat and settlement effects

'Squat' refers to changes in trim of a vessel underway and is generally marked by a lowering of the stern and a rise at the bow. Major factors that influence squat are hull shape, location and mass of load or ballast, vessel speed, and depth of water under the keel.

3 Vessel Flooding Incident

What happened?

A vessel suffered flooding and loss of integrity, caused by sea water ingress into the engine room, due to a hole developing in the box cooler bulkhead.

A high level bilge alarm occurred at night. It was found that there was significant water ingress in the engine room. The Master raised the alarm and the crew were mustered. A little over an hour later a hole with diameter 1cm was found on a box cooler bulkhead. The flooding was brought under control using hand pumps. The Master and Chief Engineer assessed the situation as an emergency and decided to return the vessel to port immediately. Continuous monitoring and double watch was maintained in the engine room.

The vessel had to be dry-docked for repairs which were estimated would take two days.

Water ingress temporary repair

Showing condition of sea chest


Additional anodes installed

What went wrong? What were the causes?

Subsequent inspection in dry dock revealed that the aft bulkhead and inboard longitudinal bulkhead for the aft of the two forward box coolers had more corrosion problems than the one hole in the aft bulkhead. The inboard longitudinal bulkhead was severely pitted over (approximately) its upper half. The aft bulkhead had isolated areas of deep corrosion, also predominantly at its upper half. All other sea chests were internally examined, and no substantial corrosion found.

There was no indication at survey that the insulators of the copper anodes of the marine growth prevention system (ICAF) had failed or that the power supply wires had failed leading to the possibility of stray currents from the system. It was not possible to verify the correlation between the reported malfunction of the ICAF system (marine growth protection) and the observed substantial corrosion.

What actions were taken?

- Following repairs, additional sacrificial anodes were installed;
- Possible installation of an impressed current cathodic protection (ICCP) system, which further improves corrosion protection.

Galvanic corrosion

Levels of galvanic corrosion depend on several factors such as the degree of damage suffered by the coating on the box coolers' tubes (aluminium brass tubes are coated), the amount and quality of sacrificial anodes, paint type with its thickness and quality and the salt content and temperature

Our member notes that box coolers are sometimes assumed to be maintenance free. However, the incident has shown that a particular attention should be exercised to the area in connection with dry-docking and the system condition and performance should be regularly verified.

Members may wish to refer to:

- Galvanic Corrosion causes dropped object – satellite dome fell from mast
- Near Miss: corrosion-related failure of bolts used to secure lifeboat winches
- Aluminium Fresh Water Tanks: near collapse due to serious corrosion
- Failure of pipework in fuel tanks

4 UK HSE: Worker Fell into Lift Shaft – Safety Controls Bypassed

What happened?

The UK HSE prosecuted a company after a 34-year-old employee was moving a loaded lift trolley in the tool department of a hangar when he fell into the lift shaft to the bottom floor and suffered life-changing injuries. See here for HSE press release.

What were the causes? What went wrong?

Although the exact cause of the incident could not be established, the HSE investigation found that the lift doors had a fault which meant that they defaulted to locked. As a result, the *emergency door release key was being routinely used by employees to bypass the fault and therefore the lift's safety devices*. (IMCA italics)

The HSE inspector said:

"Despite a fault, busy workers who were moving parts and tools felt compelled to keep the lift in use. The safety features of the lift were therefore made redundant. The lift should have been taken out of service or an alternative system of work should have been in place, and this should have been communicated."

Members may wish to refer to:

- Fatal fall from height on-board *Seatruck Pace* in Liverpool in December 2018
- IOGP Life-saving rules report 459