IMCA Safety Flash 07/17

March 2017

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.

Theme: Vessel and Cargo Operations

1 MAIB: Two Recent Vessel Collisions

The UK Marine Accident Investigation Branch (MAIB) have published two reports relating to two vessel collisions which will be of interest to members.

Incident 1: Collision between general cargo vessel *Daroja* and oil bunker barge *Erin Wood*

When these two vessels collided, minor damage was caused to the larger cargo vessel, but the smaller bunker barge suffered breaches of the hull, resulting in flooding of the vessel and pollution from leaking fuel cargo.

The MAIB report concluded that the following issues directly contributed to the seriousness of the incident:

- The two vessels collided because a proper lookout was not being kept on either vessel;
- Complacency and poor watch-keeping practices;
- Failure to properly assess risk, particularly that of lone watch-keeping;
- Failure to secure and close watertight doors on the smaller vessel allowed flooding to occur;
- The crew of the smaller vessel were not competent, and an effective safety management system was not provided.

The full report can be found here.

Incident 2: Collision between the pure car carrier *City of Rotterdam* and the ro-ro freight ferry *Primula Seaways*

When these two vessels collided in the Humber river, both were damaged but made their way to Immingham without assistance. There was no pollution and there were no serious injuries.

The MAIB investigation identified the following:

- The outbound *City of Rotterdam* manoeuvred into the path of the inbound ferry;
- This manoeuvre had not been corrected because the pilot on board had become disoriented after looking through an off-axis window on the semi-circular shaped bridge;
- The car carrier was of an unconventional design (see photo) and the pilot's disorientation was due to 'relative motion illusion', which caused the pilot to think that the vessel was travelling in the direction in which he was looking;

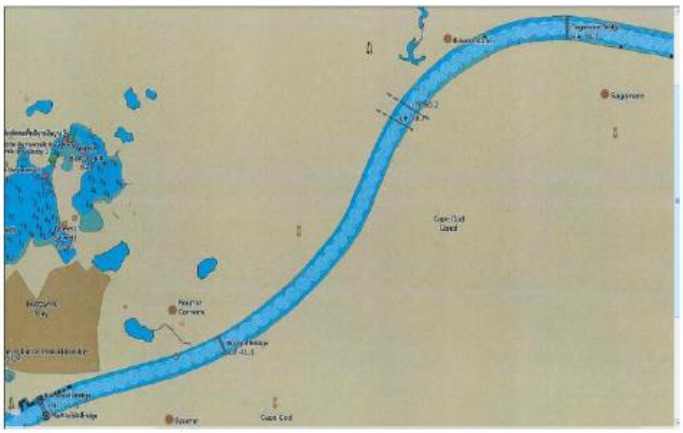
- Consequently, the pilot's actions, which were designed to manoeuvre the car carrier towards the south side of the channel, were ineffective;
- That this error was allowed to escalate to the point of collision was due to further factors, including the following:
  - intervention by the master of the *City of Rotterdam* was too late
  - challenges to the pilot's actions by the bridge team on *Primula Seaways*, and by the Humber Vessel Traffic Service was insufficiently robust
  - although *Primula Seaways* started to reduce speed about two minutes before the collision, a more substantial reduction in speed was warranted.

The full report can be found here.

2 Vessel Mast Struck Bridge – Equipment Damage

A member has reported an incident in which the aft mast of a vessel struck an overbridge and broke, damaging the navigation lights on the mast. The incident took place during a transit of a ship canal in the United States. The aft mast of the ship struck the lower span of a raised vertical lift railway bridge. The aluminium mast post broke just above the base. As a result, the navigational lights on the mast post were damaged beyond repair. The mast fell safely on the funnel top and no persons were injured. The local United States Coast Guard (USCG) Captain was notified of the incident and the vessel continued to its next port of call, where repairs were conducted.

Mast resting between the stacks



Canal Chart Showing Bridge and required clearance

Our members' investigation noted the following:

- **Causal factors**:
  - inadequate procedures – incorrect air draft used in Pilot-Master exchange, Pilot Card, Ship Particulars and Manoeuvring Poster
  - vessel not operated as per company procedures
  - inadequate communication – previously identified concerns relating to the transit through the canal were either not disseminated to current staff or were not taken into consideration during transit;
- **Root cause**:
  - confusing, contradictory or incomplete management system – vessel documents contradictory and partly incorrect with regards to air draft
  - enforcement issue – shipboard management failed to enforce proper use of company procedures;
- The bridge team were not familiar with their own company procedures or manuals, and when asked, took quite some time to locate it (hard copy or electronic version);
- The air draft for the vessel had not been calculated. A predetermined static figure was used and compared with the height of whatever structure they would be transiting under;
- The static figure used was the air draft of the vessel in summer conditions, even keel and with mast lowered. This figure was used as air draft on the Pilot Card and confirmed verbally between the Pilot and the Master. No mention was made of the need to lower any mast;
- The General Arrangement Plan posted on the bridge clearly indicates that the figure for air draft must be with the mast *down*. However, other documentation contradicted this, and no-one on the crew could provide any clarification;
- It was known by members of the previous crew that to allow the vessel to pass safely, there would need to be ideal tidal conditions and the mast would have to be lowered. It appears that this information was not passed to the bridge team.

In summary, there was incomplete planning of the voyage, inadequate communications, and a lack of understanding or proper assessment of all the risks involved. Of particular note is the fact that vessel air draft is a dynamic figure and should be calculated on a case-by-case basis.

3 Vessel Activities Near Platforms – Two Incidents

A member has reported a number of incidents involving vessels working close to fixed platforms.

Incident 1: High potential near miss – vessel blackout on approach to platform

A DP1 anchor handling tug supply (AHTS) vessel experienced a blackout and lost all power to its thrusters during the approach to a platform. The vessel started drifting and due to environmental forces and current, fortunately moved away from the platform.

Our members' investigation revealed the following:

- The **immediate cause** of the blackout was that the generators stopped due to an air lock in the fuel line, resulting in the generators tripping out;
- There was insufficient fuel in the day tanks;
- The fuel oil purifier was started without restoration of the fuel transfer system following bunkering. This caused Fuel to be drained from the day tanks into storage tanks, and tank low level alarms did not occur;
- There was inadequate handover/takeover of the watch. A post-bunkering checklist was not followed and, as a result, the fuel oil transfer system was not restored to the "normal" or sea-going condition;

- Freshwater transfer operations were carried out immediately without adequate completion or restoration of fuel systems;
- There was insufficient time allocated for smooth switching of successive operations, in particular, between fuel oil transfer and fresh water transfer to platform;
- The emergency diesel generator in this case did not come on load automatically and tripped upon starting due to a defective 24 V DC breaker;
- The **root cause** was determined to be failure to follow established procedures.

Our member took the following actions:

- Reiterated the importance of:
  - toolbox talks and job safety analysis being conducted before bunkering operations, covering the following:
    - all the anticipated risks and establishing safeguards to mitigate risks
    - bunkering plan, procedures, and sequence of valve operations for each activity involved in the transfer;
  - thorough handover/takeover between shifts and crews, particularly during critical operations;
- Appropriate notices outlining bunkering procedures, sequence of operations etc., to be posted in the engine room and near bunker manifolds;
- Extra attention to be paid to method of restoration of the fuel systems back to "normal" operation following bunkering or transfer;
- A nominated person (in this case, the 3rd engineer) to be responsible for starting and stopping fuel transfer and bunkering;
- Blackout drill to be conducted involving all concerned personnel, taking into consideration various possible scenarios, such as approaching platform, approaching jetty, approaching other moving vessel;
- Careful check of all aspects of automatic functioning of emergency generator.

Rather than draw members' attention to blackouts and failure of generators or engines with different causes, in this case members may wish to refer to the following incident with similar causes (search words: *procedure, handover*):

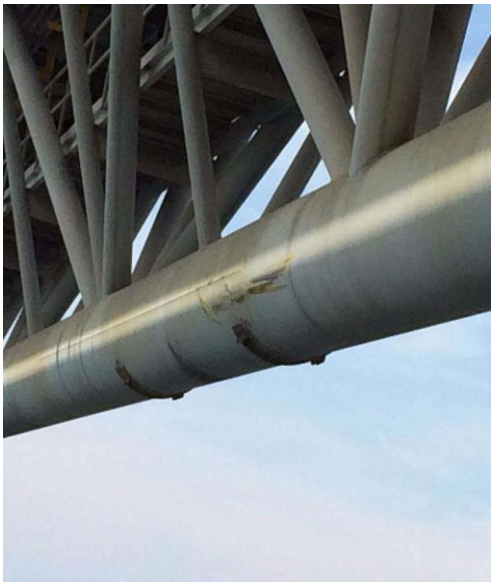
- IMCA SF 23/16 – Incident 3 – *Dropped object fell from crane – poor communication/lack of awareness/control of work* [quote: "Improved communication – particularly at shift handover – between all parties would have raised awareness of the operation"].

Incident 2: Loss of control of vessel leading to collision with platform

During personnel transfer operations with another vessel, one vessel came into contact with a fixed platform. The port side rudder failed causing the vessel to drift towards the platform flare bridge, making contact and causing slight damage to the flare bridge and the vessel's navigation lights.

The following points were noted:

- The vessel was attempting to come alongside another vessel to effect personnel transfer, in the vicinity of a fixed production platform;
- Control of the vessel was lost, due to failure of a pin in the port side rudder angle feedback unit;
- Sea currents caused the vessel to drift into and collide with the bottom side of the flare bridge, causing minor damage.



An important lesson on both cases is the importance of extra vigilance and appropriate care when undertaking operations in the 500-metre safety zone. Additionally, the following should be noted:

- Greater understanding and ownership of marine risk from an installation perspective;
- Strict operating discipline in compliance with established procedures and recognised operating limits;
- Better quality communications between installation and vessels.

Members may also wish to review IMCA SF 17/16 – Incident 4 – *Platform supply vessel involved in a near miss whilst on location.*

4 Step Change: Cargo Operations Offshore Causing Damage

UK Step Change in Safety has published a safety alert regarding a number of incidents which have taken place during cargo operations offshore causing damage to vessels, the cargo, and/or the offshore installation crane.

The incidents included:

- A CCU was being back loaded from an installation when it hit a container already back loaded. The impact on the CCU caused it to then swing into a safe haven where it caught on the anti-snag bar and damaged the bar;
- A drill pipe back loaded from an installation swung inside a safe haven doorway, the lifting slings broke and the pipe fell overboard (illustrated below)
- A PSV without anti snag bars and no 'tiger stripe' highlighting the cargo rail tops suffered several snagging incidents, causing damage to the vessel, cargo and offshore crane.

Step Change highlighted the following good practice guidance:

- Vessel Masters should satisfy themselves that all potential cargo snagging areas on the cargo deck have cargo snag bars fitted. The anti-snag bars should be regularly inspected to ensure they remain 'fit for purpose';
- Vessel Masters should satisfy themselves that the cargo top rails are sufficiently highlighted to ensure crane operators looking down from height can easily identify potential snagging areas;
- Offshore crane operators should be made fully aware of the significance of the highlighted areas on the vessels top cargo rails and when/where possible avoid loading small CCU's against these areas.

A Safety Moment prepared by Step Change can be seen here.

5 Pilot Ladder Requirements

A member has reported an incident in which a vessel was supplied with a new pilot ladder which did not meet International Maritime Organization (IMO) or International Organization for Standardization (ISO) standard. This substandard pilot ladder was noticed by a Pilot in an Australian port. He brought the matter up with the Master via the agent.

Showing knots in the steps (circled)

Members are reminded to ensure that:

- The technical specification of pilot ladders meets IMO requirements as per Resolution A.1045(27) – see below;
- Persons ordering or sourcing new pilot ladders should clearly know the IMO requirements and should specify to suppliers that every step on the ladder should be free of knots;
- New pilot ladders are thoroughly checked before use to verify quality and to ensure that the steps are clear from knots;
- Pilot ladders are always checked by the officer in charge before rigging and use to ensure it is fit for purpose, in good condition and secured properly to the vessel.

Please see the following documents:

- IMO Resolution A.1045(27) PILOT TRANSFER ARRANGEMENTS;
- SOLAS Regulation 23 Pilot Ladder transfer arrangements;
- IMCA SEL 025 – *Guidance on the transfer of personnel to and from offshore vessels and structures.*

Members may wish to refer to the following incidents: (search words: *pilot, ladder*):

- IMCA SF 17/13 – Incident 3 – *Pilot Ladder Safety;*
- IMCA SF 04/16 – Incident 2 – *Near Miss: Pilot Ladder Failure.*