MARS – Lessons Learned

MARS Report No 389 March 2025

MARS 202510

Restricted waterway bank effect

As edited from MAIB (UK) preliminary report https://www.gov.uk/maib-reports/grounding-of-general-cargo-vessel-baltic-arrow?

➔ A small cargo vessel was loaded and proceeding in a restricted waterway – a river with significant tidal range. The destination port allowed for vessels to a maximum of 83m LOA and 13m beam; the vessel in this case was 80m in length with a beam of 12m.

Two pilots had boarded at the sea buoy before entering the river. The Master and the two pilots completed a brief Master/pilot exchange before pilot A, who was under assessment by the senior pilot (pilot B), took the helm. The Master and pilot B remained on the bridge but, aside from monitoring the passage, did not have specific roles within the bridge team.

After passing the swing bridge, pilot A began to reduce the vessel's speed in preparation for the berthing manoeuvre. Noticing that the vessel was slightly to port of the planned track, he applied 30 degrees of starboard helm and 'kicked' the main engine ahead to correct the vessel's position in the narrow channel. The vessel's bow quickly swung to starboard. Within a minute, before the bridge team could take effective avoiding action, the vessel's bows grounded on the western bank of the river at a speed over ground (SOG) of 6 knots. The vessel's stern was then pushed onto the eastern bank by the flood tide, effectively wedging the vessel across the river.

Initial attempts to free the vessel were unsuccessful, but the ship was later refloated with tug assistance on the evening flood tide.

Vessel aground at low water

The preliminary investigation identified that:

- The vessel had probably experienced some bank effect. The pilot's attempt to counter with strong starboard helm and a kick ahead on the main engine was, in hindsight, an over-correction.
- At the time of the over-correction, the pilot had been at the con and helm within the confines of a very restricted waterway for nearly two hours. Having to sustain such a high level of attention for such a long duration probably resulted in a lapse of concentration on the pilot's part.

Lessons learned

- Bank effect is a pernicious but well documented hazard (see for example MARS reports 202413, 202425, 202138, 201830, 201703, 201704). While reducing speed is an excellent precautionary action to reduce bank effect, in this case the strong helm application and engine 'kick' was probably too much.
- The destination port authority has started simulator training for its pilots and has instituted a review of vessel suitability for transits to and from the port. Additionally, a risk assessment for vessel groundings was completed, including consideration of the benefits of requiring an escort tug.

MARS 202511

Mooring fatality

As edited from MAIB (UK) report 18/2024 https://www.gov.uk/maib-reports/mooring-deck-accident-on-bulk-carrier-mona-manx-with-loss-of-1-life (see QR code for link)

➔ Under pilotage, a bulk carrier was coming alongside a berth for loading. As they approached, the pilot explained to the Master the required manoeuvres. Two tugs would assist with the berthing operation. The vessel would be moored port side to the berth with two springs and four head/stern lines forward and aft, respectively.

Once the vessel was alongside with the first springs fore and aft fastened, the port control advised the pilot that the vessel needed to move 30m astern to align with the cargo loading arm. The Master instructed the mooring party crews accordingly. The vessel's engine control was set to dead slow astern, and it began to move back, eventually reaching a speed of 0.5 knots. During the manoeuvre, the forward mooring party heaved in the slack on the forward spring and the aft deck mooring party slackened the aft spring.

Position of victim just prior to spring line recoil

A few minutes later, the officer in charge of the aft mooring party positioned himself near the accommodation ladder and looked over the side rail directly above the slack spring line while using a VHF radio. At that moment, the spring line tightened, then slackened and then came under tension once more. A loud bang was heard as the line suddenly released and recoiled vertically upwards.

The officer was struck under his chin by the recoiling spring line. He was lifted and thrown backwards, his head striking the accommodation ladder behind and above his former position.

The victim was found lying in a large pool of blood and the alarm was raised. Within seconds, medical assistance was requested from the port and the tugs directed to hold the vessel alongside. The port's medical team boarded within minutes, but the victim was pronounced deceased at the scene.

The investigation found, among other things, that:

- As the vessel moved astern under its own power the aft spring line became trapped on the dock fendering.
- As the line tensioned and the vessel momentarily moved away from the jetty, the line released (like a bow string) upwards at an estimated speed of 65km/hr leaving the victim minimal opportunity to move out of its path.
- The use of engines while running lines is generally avoided during mooring operations to reduce the risks of mooring lines being drawn into a rotating propeller or rapid tensioning of a line.
- The terminal's mooring procedure specifically stated that there should be no ship running manoeuvres, implying that a vessel should not use its engines while positioning alongside. It is probable that the Master of the vessel was unaware of this requirement because a copy of the terminal mooring procedure had not been provided.
- Given that vessel's engines were apparently often used while manoeuvring alongside berths at this port, it is also probable that the pilots had not been provided with the mooring procedure either.

Lessons learned

- This accident is reminiscent of MARS 201870 where the victim, also at the aft mooring area, looked overboard to gain a better view and was struck by the released spring under tension.
- This accident is testament, once again, to the dangers of mooring work. Be aware of your environment and the potential hazards.
- The energy within mooring ropes can easily injure or kill. Always use extreme caution when working within the mooring area.
- If there is no clear, unimpeded path from fairlead to bollard, beware of increased tension in the line. If necessary, slacken the line until the obstruction has been cleared.

MARS 202512

Tagout but no lockout

➔ A crew member was told to verify the steering light on the forward mast while the vessel was under way. Before ascending the mast, the crew member radioed the bridge to inform the OOW and request that the Lock Out Tag Out (LOTO) tag be put on the bridge foghorn activator. The Master was also on the bridge and, as he went to the bridgewing, he remembered there were also foghorn activators there.

He informed the OOW and LOTO tags were installed on those activators as well.

Lessons learned

- Lockout/Tagout (LOTO) is an important procedure that can only be truly effective if both the 'lockout' and the 'tagout' have been completed. In this case, only the 'tagout' was accomplished.
- Putting 'tagout' signs on an activator may be reassuring, but this action alone does not prevent the stored energy from being accidently released. This practice surreptitiously undermines the goal of LOTO which is to prevent 100% of accidents related to accidental energy release.

MARS 202513

Unsafe gangway + impaired faculties = fatality

As edited from MAIB (UK) report 10/2024
https://www.gov.uk/maib-reports/fall-overboard-from-sail-training-vessel-pelican-of-london-with-loss-of-1-life (see QR code for link)

➔ A large wooden sail training vessel was moored at a shipyard ahead of a planned dry-docking. 'Holding off' lines were rigged and adjusted to keep the ship from touching the sides of the dock and the gangway was aligned with a gap in shoreside safety barriers.

A relief cook had joined the vessel while the permanent cook was away on leave. The relief cook received a handover from the permanent cook and an induction brief from the chief mate before starting his duties the next morning. On the following nights, the relief cook went ashore to a local bar where some of the other crew noted that he was drinking alcohol at levels that could be considered more than 'normal'.

One night, the relief cook joined his shipmates at the bar where, over the next two and three-quarter hours, he was observed to drink at least nine double whiskies and ice. The relief cook was the last customer in the bar when he left near 23:00. Walking back to the vessel alone, he arrived about 10 minutes later.

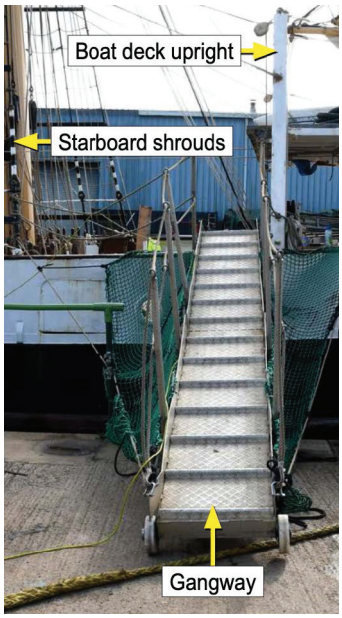
CCTV footage shows the relief cook slowly ascended the gangway, pausing for a few seconds to step down towards the deck via the bulwark ladder. Then he fell from the left-hand (aft) side of the top of the gangway, landing with a splash into the water. Another crew member heard the noise and ran up from their cabin to the well deck, arriving within seven seconds of hearing the splash. He looked to starboard, towards the gangway, then went to check the port side of the well deck; as he did so there was further movement in the water directly underneath the gangway. The crew member stepped up onto the gangway and looked around for the source of the noise but saw nothing.

The crew member then walked ashore and searched the area forward of the gangway. After a few minutes of searching and not seeing anything of concern he retired to his cabin. At breakfast the next morning the crew noticed the relief cook was absent and started searching for him.

After a review of the port's CCTV the police were called to search for the victim. Some hours later, his body was recovered to the jetty.

The investigation found, among other things, that:

- The vessel's gangway did not provide a safe means of access to/from the vessel. Specifically, inadequate fencing and an inappropriately rigged safety net exposed all gangway users to serious hazard as they traversed the gangway.



Gangway installation with netting each side

- There was a lack of guidance and training for those crew rigging and those inspecting the gangway before use.
- The victim was well above the legal limit of blood-alcohol content for duty on a vessel when he fell from the gangway. It is likely that he experienced cold shock on entering the water and that his state of intoxication hindered his ability to raise the alarm or attempt to self-rescue.
- There were early indications of a problem with the relief cook's alcohol consumption, but this did not result in an effective intervention by his shipmates.

Lessons learned

- Safe access/egress to and from your vessel is literally where a strong safety culture starts. Make sure yours is safe.
- One for all and all for one. Look after yourself but also look out for your shipmates.
- Alcohol abuse is usually easy to spot amongst shipmates. Help them get professional help and do not indulge their impaired behaviour.

MARS 202514

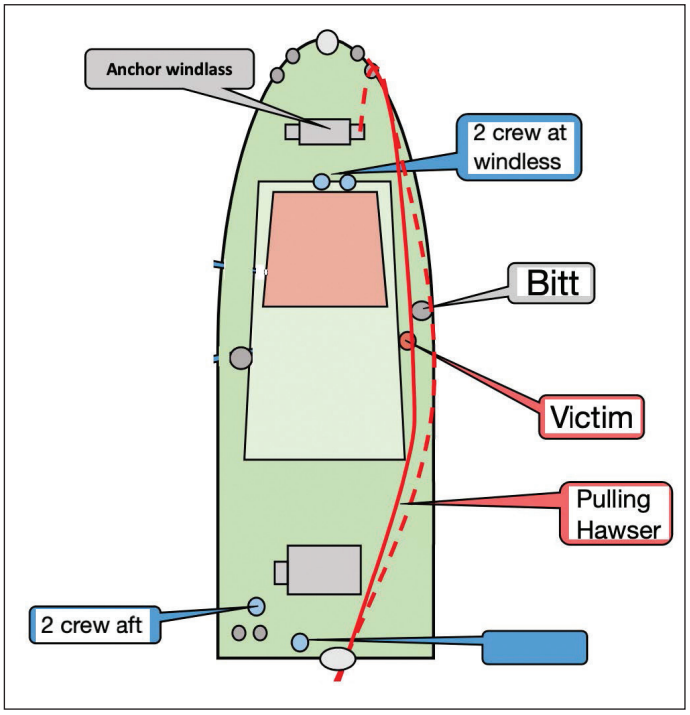
An improvised plan and an unsupervised unsafe act end in tragedy

As edited from Rostransnadzor (Russia) report 01/2016
Report available on the IMO GISIS website – free login required

➔ A tug assisted a tanker with a wire rope towline, and then went to anchor nearby in order to heave in the heavy line. This wire rope towline was not connected to the tug's towing winch aft, and it was decided to haul it in using the gypsy-head of the anchor windlass. The rigging went through the stern fairlead and along the starboard side of the tug to the windlass.

A polypropylene mooring line was attached to the wire rope towing line as a pulling hawser. A step-by-step transfer manoeuvre was employed to heave in the wire rope towline.

Crew were stationed fore and aft to monitor the operation. Crew member A was stationed between the two positions so he could assist at either end. At one point when transferring the pulling hawser, when there was no tension on the rope, crew member A put the pulling hawser outboard of the starboard bitt. Another crew member remarked that it was dangerous to have this line outboard of the bitt and he brought it back to the inboard position.



Tow line recovery arrangement and position of crew

As the tension was brought on the pulling hawser there was a loud sound and pulling was stopped at the windlass. Crew member A was found pinned against the tug's superstructure by the pulling hawser. Unknown to the other crew, who did not have a line of sight to the victim, crew member A had repositioned the pulling hawser back outboard of the bitt. When it came under tension, the pulling hawser slipped off the top of the bitt with accumulated energy and trapped crew member A against the superstructure.

First aid was administered and the victim quickly evacuated ashore. He was later declared deceased due to serious internal injuries.

The report enumerated an exhaustive list of labour regulations that crew member A had apparently breached.

Lessons learned

- Although the accident investigation was diligent in documenting the accident facts, the analysis is a litany of 'blame the victim'. The victim certainly acted against an agreed procedure by placing the pulling hawser outboard of the bitt, but what about the lack of supervision that allowed this dangerous act?
- The agreed procedure was that no one should be located on the starboard side next to the pulling hawser – yet crew member A was there, to everyone's knowledge, until his untimely accident. Again, what of the supervision?
- Why wasn't the tug's towing winch used for this operation – a safe and straightforward method to recover the towline. The report is silent on this matter and on the dangerous improvised method used.

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