MARS – Lessons Learned

MARS Report No 374 December 2023

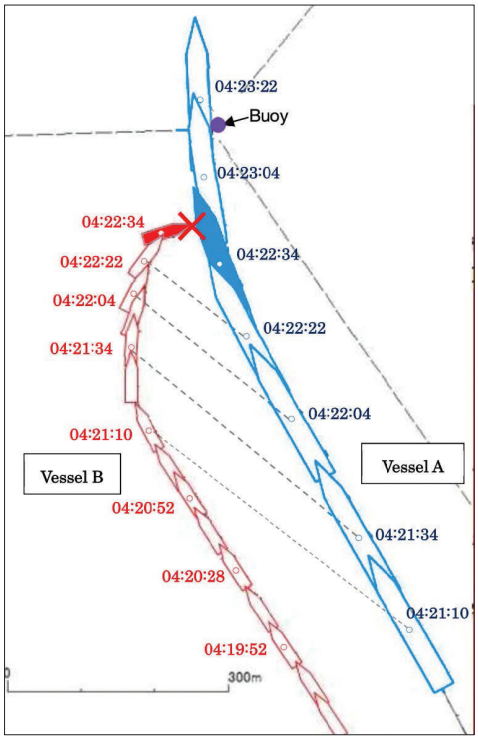
MARS 202354

Low situational awareness has high impact consequence

As edited from JTSB (Japan) report MA2021-3
Full report: https://tinyurl.com/mars202354

➔ At night and in good visibility, two vessels were approaching a port.

Vessel A, under pilotage, was bound for the port and had been assigned a berth. It was making way at about 13 knots, gaining slowly on Vessel B which was making about 10 knots. The pilot of Vessel A observed Vessel B cross their bow from starboard to port about 0.5nm ahead. Based on this action, the pilot assumed the vessel was headed for the North exit of the Traffic Separation Scheme (TSS). Up to this point there had been no VHF communication between the two vessels. Vessel A continued to gain on Vessel B, and it appeared they would pass Vessel B on their port side at a distance of about 200 metres.



Meanwhile, on Vessel B, the lone watch keeper was contacted by the local Vessel Traffic Services (VTS) on VHF. VTS inquired if they were headed to 'K' anchorage. The OOW, although unsure of the exact anchorage, responded in the affirmative. The VTS then informed the OOW that in order to make 'K' anchorage they were required to navigate the Traffic Separation Scheme (TSS) on their starboard side. The OOW was surprised, but took the VTS advice as an order. He knew he had to act quickly to enter the TSS, so he informed VTS he was coming to starboard. He knew there was a vessel astern, but without verifying, he assumed it was still some way behind.

The local VTS immediately called Vessel A on VHF and informed the bridge team that Vessel B was destined for an anchorage and that the vessel would take the appropriate TSS to starboard. At about the same time, the pilot of Vessel A saw Vessel B begin to turn sharply to starboard, which meant that this vessel would cut in front his vessel. He attempted to call Vessel B on VHF but there was no response. He ordered the main engine be put to stop, while the Master simultaneously ordered hard to starboard. At the same time the OOW of Vessel A blew a long blast on the whistle. Despite all this, a collision was now unavoidable and Vessel B collided with the port side of Vessel A. The starboard bow of Vessel A then struck the navigation buoy that had been close to starboard.

Lessons learned

- Assumptions made by both vessel operators on the actions or position of the other vessel contributed to this accident. Keep your situational awareness honed sharp and communicate with other vessel operators to augment understanding and shared mental models.
- When passing another vessel close by, as in this case about 200m, it may be advisable to have a mutual understanding of the manoeuvre.

MARS 202355

Severe injury while leaving berth

As edited from report BEA-mer (France) published July 2022

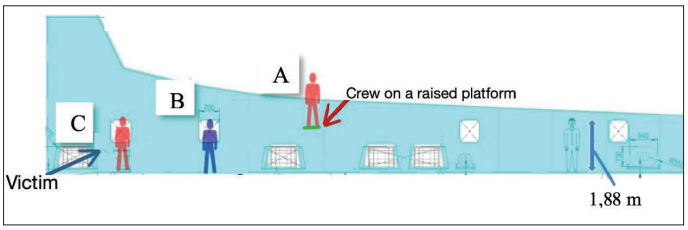
➔ A RoRo ferry had finished loading and was leaving the berth. A strong onshore wind was pushing the ferry against the quay, and two bow thrusters were working at 100% to push the bow off the berth. Meanwhile, forward, the seamen were preparing the lines for the next berthing.

In order to set the berthing lines with their appropriate heaving lines, the deck crew were passing the heaving line outboard from position A, where the deck crew was standing on a platform due to the high bulwark, to position C, via position B. A gaff was used to catch the line through a bulwark port at position B. The line was then passed outboard to position C. A deck crew at position C had his arm out of the bulwark port holding a gaff to catch the heaving line.

A few seconds before the line passing manoeuvre began, one of the bow thrusters came offline due to an overpower surge. There was no alarm to warn the bridge team of this situation. The ferry was quickly pushed back to the berth, and the bridge team, realising the situation too late and preoccupied with the manoeuvre, gave no warning to the deck crew, who were unaware that the ferry was closing on the

berth. The ferry's starboard side struck a berth fender at the level of the bulwark port at position C just as the deck crew had his arm outstretched and outboard. His arm was instantly severed.

The victim was treated immediately for profuse bleeding. Within minutes the vessel was re-berthed and the victim sent ashore for professional medical attention. The official investigation found that, among other things, the ferry, which was a new build still under guarantee, had suffered numerous bow thruster and electrical problems since beginning service a few months prior.



Lessons learned

- Following the accident, a task analysis made it possible to establish a work method which eliminated the risks due to the use of a gaff outboard.
- Everyday practices, when conditions are benign, can hide hazards in plain sight. Take the time to re-analyse current work methods using the 'what if' risk assessment methodology. Can risks be further reduced by eliminating hazards or questionable procedures?
- New vessels can be subject to a 'breaking in' period where numerous minor or even major anomalies are discovered. These should be corrected as soon as possible to avoid unwanted negative consequences.

MARS 202356

Fouled anchor in a designated anchorage

➔ A loaded tanker had dropped anchor in a designated anchorage in depths of 30 m, using six shackles in the water. Upon receiving clearance to berth the deck crew began recovering the anchor but the windlass was experiencing considerable strain. The hydraulic motor was damaged due to the heavy load, so the operation was stopped and VTS informed accordingly. A spare hydraulic motor was installed and about 12 hours later clearance was again received to heave anchor.

On this attempt the anchor was successfully lifted out of the water. The crew observed the vessel's anchor was fouled with another anchor and chain. After careful consideration and with the exercise of good seamanship, this abandoned anchor and chain was freed from the vessel's gear and the vessel continued normal operations. The local VTS was informed.

Anchor fouled with abandoned anchor and chain

Lessons learned

- If you lose an anchor and/or chain in a designated anchorage always report such an incident to local VTS, as it will then be identified as a possible foul ground area.
- If your windlass is struggling to lift the anchor in otherwise normal conditions consider the possibility of it being fouled. Divers may be needed to inspect.

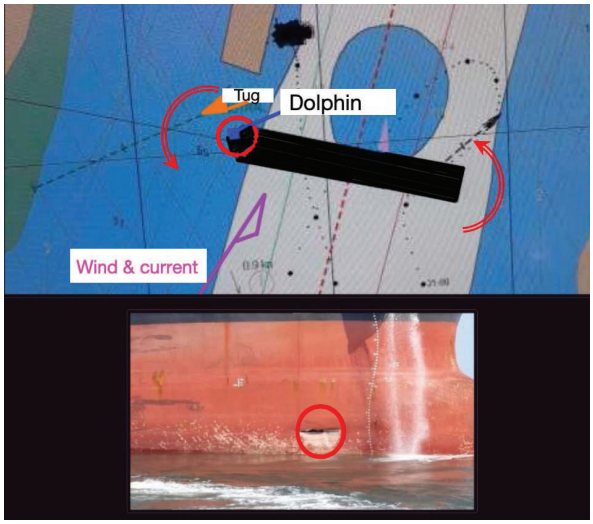
MARS 202357

Departure damage in very restricted waterway

➔ A tanker in ballast was departing from a river port, from a position which required a turn of approximately 180°. There was one pilot on board and one tug (the only one available) made fast aft. Winds were from the south at about 20-25 knots and there was a northerly current setting. Once all lines were clear the vessel was taken off the berth and a turn to port was initiated.

The tugboat aft was ordered to move to vessel's starboard bow to better assist in the rotation. With the tug pushing at the starboard bow, the vessel was now moving aft with a Speed Over Ground (SOG) of 2.4 knots. Soon, the vessel had turned about 60° to port, but the current and wind were moving the vessel to the north. The main engine was set to half ahead while rudder was hard to port.

As the vessel achieved approximately 90° of the turn, it was reported to be 10 metres from a dolphin on the starboard bow. The tug was at full power, but could not control the vessel's set toward the dolphin and had to abandon its position for fear of being crushed. The vessel's main engine was set at full astern, but the starboard bow brushed against the south corner of the mooring dolphin. Within minutes the vessel completed the turning manoeuvre and commenced the outbound passage to the anchorage, where damage to the hull was observed.



Lessons learned

- In a very restricted waterway and with wind and current conditions that made for a complicated 180° turn, the use of one tug is, in retrospect, a hazardous decision.
- Only one tug was available in this port, so the hazards were 'normalised' by the Master and pilot as 'acceptable'.
- Plan a manoeuvre beforehand and think about the forces acting on your vessel. In this case the vessel had to come 180° after leaving the berth and at one point was perpendicular with the current in a restricted channel. The tug could not overcome the forces acting on the hull pushing it to the North.

MARS 202358

Collision in good visibility

➔ An LNG tanker was proceeding in the open sea at a speed of approximately 21 knots in good visibility. At 05:14 the lookout spotted a light and reported it to the OOW as a 'fishing boat', approximately 5 degrees to port. About 22 minutes later, the lookout reported that the fishing boat was right ahead and that he believed that it was close to their vessel.

The OOW used his binoculars to try and estimate the distance of the fishing boat. He believed that it was still quite some distance away. However, the lookout's assertion that the fishing boat was close raised some doubts in his mind. As a result, the OOW made a small alteration of course to starboard to avoid having the fishing boat right ahead and to clear it visually from the vessel's vent masts.

Five minutes later the lookout reported the fishing boat ahead once more and suggested to the OOW that it was now crossing from port to starboard. The OOW determined visually that the fishing boat was indeed crossing from port to starboard and made a two-degree alteration of course to port to put it fine on the starboard bow. A few minutes later the OOW again altered course to port a few degrees to a new course of 239°.

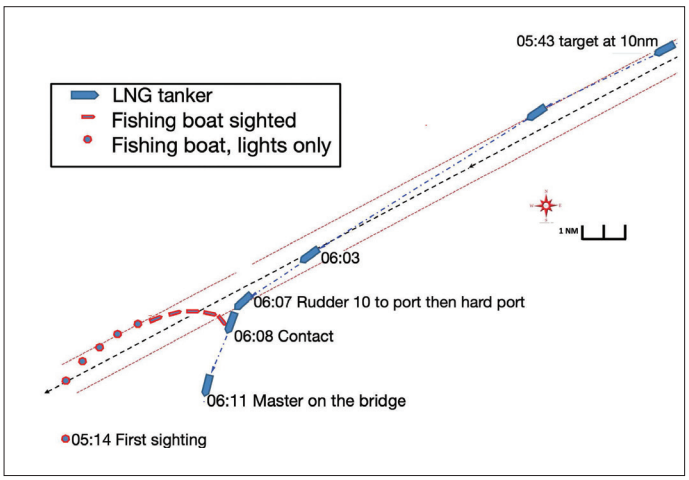
The fishing boat now appeared on the radar right ahead and was acquired. It was 7.6 nm away, making a speed of 5.5 knots. Soon, clearer visual contact was made with the fishing boat and both the OOW and the lookout observed green and red navigation lights. The OOW started giving light signals to the fishing boat using the bridge Morse light as per the collision regulations.

At 06:03, the fishing boat now only 1.7nm away, was seen to alter course further to starboard showing only its red light. The OOW deemed this to be an attempt by the fishing boat to cross ahead of them. Finally, the OOW ordered hand steering engaged and ordered 10 degrees to port and then hard port. Shortly after the fishing boat disappeared from view from the conning position.

The OOW went out onto the starboard bridge wing and observed the fishing boat in contact with their vessel mid-ships. He ordered the helm hard to starboard to help move the stern away from the fishing boat. The fishing boat's port bow came in contact again in way of the tanker's starboard engine room water ballast tank and then cleared. The OOW called the Master, and it was confirmed that the fishing boat was intact, and the crew were not injured.

Lessons learned

- The OOW did not use all available means to determine if risk of collision existed. For example, he did not take compass bearings of the light when it was first reported to port and as the range decreased.



- At a critical decisional moment, with the fishing vessel 7.6nm away and clearly on a reciprocal course the OOW decided to alter course to port – but only by a few degrees. With a closing speed of about 26 knots this meant the vessels would meet in about 3.5 minutes. Now was the time for an alteration to starboard large enough to be readily apparent to the fishing vessel.
- Hand steering was not engaged until virtually the very last moments before contact. Given the situation and the levels of risk, it would have been more appropriate to do so much earlier.

Editor's note: This incident brings to mind an excellent edition of *ALERT!* (issue No.16) from some years back. In one of the articles we read that 'Experimental studies show a strong bias to take avoiding action late in the chain of events, rather than early. This seems to be a hard-wired approach to danger. It is only with considerable experience including near misses and accidents, that avoidance action is taken earlier in the chain of events.' Readers are invited to review the entire publication here:

https://www.nautinst.org/uploads/assets/dc1cef62-79d2-41d8-be1b9ceddadb5f78/Rogue-behaviour.pdf

LETTERS FROM READERS

Re: MARS 202302

➔ I read with great interest report 202302, and the related report from the Belgian Investigation Department 2021/004987, which explains a very serious accident that occurred on a VLCC where the C/O and the Bosun passed away when blue water washed across the deck. This incident caused a stir and debate among us officers because the VLCCs we work on are twins of the accident vessel.

The conclusions written in both the January MARS issue and the flag state report are absolutely spot on but many questions remain unanswered. For example, why choose to pass so close to the coast? If you look at the well-known *Ocean Passages of the World* (NP136), it is clearly written that 'The risk of freak waves is present here'.

The Captains I sailed with when I was 3/O and 2/O always told me to stay as far away as possible from the 200 metre bathymetric due to the risk of freak waves. In fact, during my last passage of Cape Horn (September 2016) with a fully loaded suezmax oil tanker, the captain instructed the 2/O to plan a crossing of the Cape further south in order to avoid this risk.

On the other hand, it should be noted that NP136 suggests a waypoint which in latitude is not so different from that where the accident occurred, and this can be problematic especially if the navigating officer and/or the Captain have never passed Cape Horn (in short, lack of experience).

It is very important that the shorebased routeing companies are aware of the possibility of freak waves and any dangerous event for planned navigation. However, it is true that there are no dedicated wave observation buoys and that the Chilean hydrographic service has not received any reports or observations regarding freak waves.

I think it might be a good idea to inform the Admiralty about the freak wave risk in this area by including this incident plus the other two listed in the final report issued by FEBIMA.

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Gard
www.gard.no

The Gdynia Maritime School
https://www.morska.edu.pl/en

Green Bow Maritime
https://www.greenbowmaritime.com/

IAMI
http://iami.info

IMAT
https://www.imat2006.it/

IMCS
www.imcs-group.com

Iridium
www.iridium.com

JMP Marine Surveyors
https://jmpmarinesurveyors.com/

KASI GROUP
www.kasimalaysia.com

Louis Dreyfus Armateurs
www.lda.fr

Marine Society & Sea Cadets
www.ms-sc.org

Maritime Training Services
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Ocean Technologies Group
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www.pla.co.uk

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https://www.poseidon-maritime.com/

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