Mariners' Alerting and Reporting Scheme

MARS Report No 352 February 2022

Fishing for lessons learned!

That may be an apt heading for this edition of the MARS supplement. In each of the following reports we look at the unsafe conditions and underlying factors that set the scene for a collision between a cargo ship and a smaller vessel. Some of these accidents finished with only some bent and twisted metal; others, tragically, in fatalities. The old adage that 'a collision at sea can ruin your whole day' may be true to some extent for those on a commercial vessel involved in a collision with a fishing vessel. But it can be a cruel and twisted irony for those on the fishing vessel.

MARS 202205

Collision with a fishing vessel in a TSS

As edited from official FEBIMA (Belgium) report 2020/005040

➔ A general cargo vessel was sailing in a Traffic Separation Scheme (TSS) at night in calm seas and good visibility. The vessel was under autopilot, on a course of 249 degrees at approximately 10.5 knots. The Officer of the Watch (OOW) noticed four fishing vessels on the radar that were crossing the TSS and appeared to be sailing as a group. The fishing vessels were approximately 10.5 nm away and approaching on the port side, showing Closest Point of Approach (CPAs) of between 0.1 and 0.6 nm. The Time to Closest Point of Approach (TCPA) was approximately 50 minutes.

Some time later, the OOW set the radar to a 6 nm range. The radar indicated three CPA/TCPA limit alarms from the group of four fishing vessels. One of the fishing vessels altered course approximately 30° to port in order to cross ahead of the cargo vessel with a CPA of 0.4 nm.

Two of the other fishing boats, A and B, kept a course of approximately 006 degrees. At one point, fishing boat B altered course slowly towards 011 degrees to pass astern of the cargo vessel, but fishing vessel A did not follow this move. Its CPA to the cargo vessel was approximately .05 nm. In the following minutes, the OOW of the cargo vessel noticed that the CPA of fishing boat A had decreased to zero.

By this time another officer had arrived on the bridge of the cargo vessel for the change of watch. Before the handover could be accomplished the OOW on duty realised that fishing vessel A was not taking avoiding action. The OOW sounded the horn to warn fishing vessel A and then put the rudder hard to starboard. About 40 seconds after sounding the horn, the two vessels collided. Fishing vessel A ran into the port side of the cargo vessel amidships and then slid aft. Both vessels sustained structural damage but there were no injuries.

It was discovered during the investigation that the lone watchkeeper on board fishing vessel A did not realise the cargo vessel was there until it was too late. The investigation also found that the 'apparent intentions' of the four fishing vessels contributed to the accident. Some of the fishing vessels did take action to avoid the cargo vessel but in the end, one did not. The OOW on the cargo vessel assumed all the fishing vessel crews had observed his ship, but he was wrong.

Lessons learned

- When in doubt and always when a very small CPA is detected, establish early communications with the other vessel and ensure everyone knows what actions are to be taken.
- Sound navigation practices and a good lookout would have avoided this accident as the Master of the fishing boat would have realised there was a stand-on cargo boat on his course with a zero CPA.

MARS 202206

Collision with a fishing vessel in a restricted waterway

As edited from official NTSB (USA) report MAB 21/21

➔ A loaded tanker was inbound under pilotage, making 11 knots in a restricted waterway. Visibility was initially low at about 0.5 nm, but the pilot told the Master that visibility was clear in the harbour and had been clearing for the last few hours. They agreed to continue the inbound transit. The pilot set up two portable pilot units (PPU) and informed the Master that he would hail outbound vessels to arrange port-to-port passages. A crew member was sent to the bow as lookout/anchor standby. The fog horn was sounding from the forward mast.

Meanwhile, an outbound fishing vessel ahead had turned to starboard and was heading towards the channel at an angle of intersection of about 30°. On the tanker at this time, the pilot planned to meet an outbound commercial vessel by moving to the extreme right side of the channel, giving the centre channel to the outbound ship.

At 1535, the tanker's pilot hailed the fishing vessel twice on VHF radio. Although the operator of the fishing vessel did not respond, electronic data shows that, shortly after the first attempted hail, the fishing vessel came 19 degrees to port. The predicted vector from the new heading, just north and slightly parallel to the outskirts of the channel boundary, indicated that the fishing vessel would continue to enter the channel at a very shallow angle, crossing ahead of the inbound tanker at about 8.4 knots. About one minute after the failed VHF communication with the fishing vessel's operator, the tanker's pilot sounded five short blasts. Electronic data shows the fishing vessel maintained its heading nonetheless.

About 90 seconds after the first danger signal and some 10 seconds after a second danger signal, the tanker collided with the fishing vessel, which capsized almost immediately. One crew member from the fishing vessel was rescued from the water alive. Another crew member was recovered from the water and pronounced deceased. The bodies of two other crew members were found within the wreck.

The subsequent official investigation could not determine why the fishing vessel's operator did not slow or take substantial action to avoid transiting into the channel directly in front of the tanker, or what the captain of the fishing vessel was doing in the minutes leading up to the collision. It is possible the captain was away from the conn, was distracted, fell asleep, was unsure of what action to take, or was otherwise unable to respond to the developing situation. The captain's failure to slow his vessel, act on his ARPA's information or respond to the tanker pilot's communications may have been due to a medical event.

Lessons learnt

- Much as in the previous MARS report, early communication can be an effective measure in averting close quarters situations. The use of VHF radio can help to dispel assumptions and provide operators with the information needed to better assess each vessel's intentions.
- Never assume the actions of another vessel will be coherent or logical. Many jurisdictions still do not require small vessel operators to pass competency requirements. Small boats should be watched carefully by professional mariners.
- In near zero visibility, slow down. The resultant approach speed of the tanker and the fishing vessel was nearly 22 knots.

MARS 202207

Collision with a fishing vessel while outbound from a port

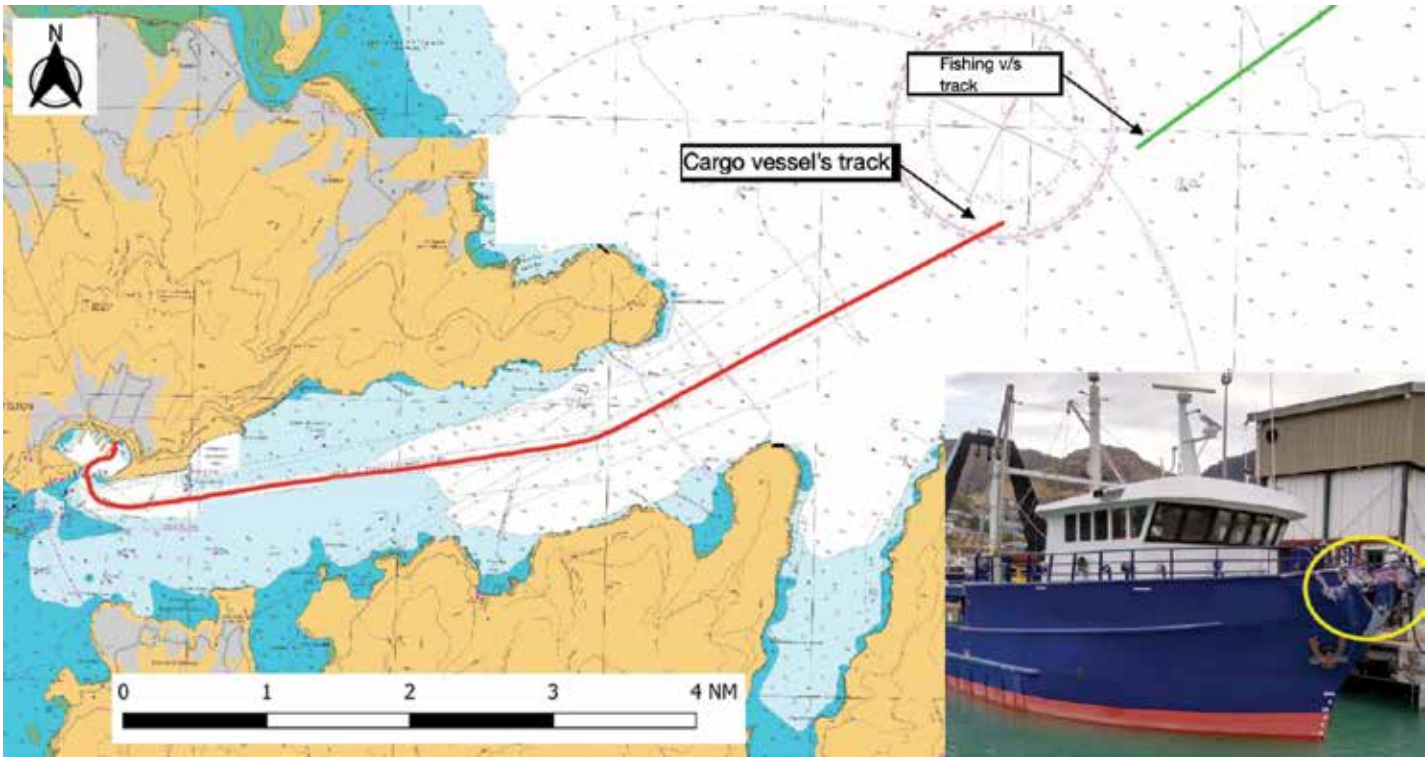
➔ As edited from official TAIC report (New Zealand) MO-2020-201

A cargo vessel was leaving port under pilotage, in darkness but with good visibility. The bridge team comprised the pilot who had the con, the Master, OOW and a helmsman. Also on the bridge were three representatives of the vessel charterer who were making an observation trip to the next port.

As the vessel exited the port, the pilot handed the conduct of the vessel to the Master in preparation for disembarking. There was no discussion about traffic in the area during the handover, and the bridge team had not noticed the presence of an inbound fishing vessel some 5 nm ahead. The OOW accompanied the pilot to the main deck and observed as the pilot boarded the pilot launch.

When the OOW returned to the wheelhouse the Master was in discussion with the three passengers. The OOW then observed a small vessel fine on the port bow. Viewed through binoculars, both the port and the starboard navigation lights were visible. The OOW informed the Master of the small vessel's presence.

At this point, the fishing vessel was approximately 3.5 nm away, but it was not yet showing as a target on the radars because they were still set to the 3 and 0.75 nm range scales used to exit the port. The fishing vessel had a speed over ground (SOG) of about 7.8 knots. The SOG of the outbound cargo vessel was 8.2 knots. As the cargo vessel came clear of the port channel, the Master ordered the engine speed to be increased, giving a new SOG of about 11.8 knots. At this point, the vessels were about 10 minutes apart.



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A few minutes later, the OOW interrupted the discussion between the Master and the passengers to inform the Master of the developing situation with the fishing vessel. The Master acknowledged the OOW and continued the conversation with the passengers. The fishing vessel was now 1.5 nm away and on an apparent collision course, yet neither vessel had altered course.

The OOW now informed the Master that the fishing vessel's CPA would be 0.047 nm. Soon after this, he told the Master that the fishing vessel's Course Over Ground (COG) was 230°. The Master first confirmed with the helmsman that own ship's course was 060°, then ordered the helmsman to alter course 10 degrees to starboard to avoid a collision. Soon after, the OOW informed the Master that the bow crossing range was 0.089 nm. At this point the Master ordered hard starboard and sounded one continuous long blast on the vessel's whistle. Within seconds the cargo vessel and the fishing vessel collided.

The fishing vessel's bridge was manned by a lone watchkeeper who was not sufficiently familiar with the Colregs to stand a watch. He had left the bridge about one minute before the collision to wake the Master, unaware that they were running into danger. As the crew and the Master regained the wheelhouse of the fishing vessel they heard the whistle of the approaching cargo vessel. The Master attempted to steer to safety but the two vessels collided shortly afterwards. Only minor injuries were sustained by the Master of the fishing vessel and the vessel sustained bow damage.

The official report found, among others, that;

- The bridge team on board the cargo vessel, both during the pilotage and immediately after the pilotage ended, had low situational awareness of other marine traffic in the vicinity due to distractions (passengers on bridge) and the absence of long-range scanning to obtain an early warning of the risk of collision.
- The sole watchkeeper on board the fishing vessel had low situational awareness of the risk of collision with the cargo vessel because the radar equipment was not used to plot the target's track. Also, the watchkeeper on board the fishing vessel was not sufficiently familiar with the Colregs to undertake a sole watch.

Lessons learned

- Distractions on the bridge will ALWAYS lead to lower situational awareness. Unnecessary personnel or passengers on the bridge, portable phones, sundry other tasks other than navigation; these will erode your safe navigation.
- Early warning of an impending collision by radar can only be achieved by long range scanning and target acquisition.

Fishing for lessons learned – Conclusion

Collisions between commercial ships and small vessels are unfortunately still a relatively common occurrence. Statistics from an Australian study (1990 to 2017) revealed 63 reported collisions of this type. The occurrences that were investigated found that a proper and effective lookout and taking early avoiding action in accordance with the Colregs could have prevented those collisions in almost every instance.

It is worth quoting an insight published in one Australian report of such an occurrence (ATSB/333-MO-2017-007):

"Human performance aspects that are relevant to some of these collisions include expectancy and confirmation bias. Expectations are based on past experience and other sources of information, and they strongly influence where a person will search for information, what they will search for and their ability to notice and recognise a target or relevant aspect of a situation (Wickens and McCarley 2008). If the expectations are incorrect, then a person will be less likely to detect the target or a relevant aspect of the target (such as the heading or speed).

People generally seek information that confirms or supports their hypotheses or beliefs, and either discount or do not seek information that contradicts those hypotheses or beliefs. When the available information is ambiguous, it will generally be interpreted as supporting the hypothesis. This confirmation bias is an inherent aspect of human decision-making and has been demonstrated to occur in a wide range of contexts (Wickens and Hollands 2000).

If an assessment of another vessel's heading and speed is based on limited or incomplete information, there is a significant likelihood it will be incorrect. However, aspects such as expectancy and confirmation bias mean an initial incorrect assessment may not be effectively identified and corrected.

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