Mariners' Alerting and Reporting Scheme

MARS Report No 356 June 2022

MARS 202222

Lookout offline

As edited from MAIB (UK) report 14/2021

➔ A small general cargo ship left port in the mid-afternoon in foggy conditions. After the pilot disembarked, the Master set the autopilot to steer 129°, increased the ship's speed to 8 knots and released the helmsman to other duties on deck.

Soon afterwards, the Officer of the Watch (OOW) arrived on the bridge and the Master handed him the con. The OOW called a crewmember to the bridge as a lookout as visibility was now reduced by fog. He then checked the radar and AIS and saw no traffic of concern, so he went to the bridge computer/chart table and undertook administrative duties.

Meanwhile, a wooden fishing vessel was inbound for the same port. The captain had set a course on the vessel's autopilot of 229°, with a speed of about 5 knots. He was using his radar, switching between various range scales for detection of other vessels, but did not see any. As the vessel approached port, the captain left the wheelhouse and went to the aft deck to check on the deckhand.

At about this time, the OOW on the general cargo vessel observed a target on the radar at less than 1nm, about 30° on the port bow. He reduced the radar range scale to 3nm and checked the AIS for any signal from the target, but did not see any. He instructed the lookout to look for a contact and then joined him on the port side by the closed bridge wing door. They both searched visually, the OOW using a pair of binoculars.

Suddenly, they both saw the fishing boat emerge from the fog, 30° on the port bow. The OOW sounded one long blast on the ship's whistle and then switched the helm to manual control and put the rudder hard-to-starboard. This action was too late, and the fishing vessel struck the cargo vessel's port side. The fishing vessel's captain and deckhand were thrown to the deck by the force of the collision. The crew of the fishing vessel were rescued, but the fishing vessel eventually sank due to an ingress of water.

The report found, among other things, that neither vessel was making sound signals, which could have alerted them to the other's presence. Of course, with the captain of the fishing vessel not even in the wheelhouse, an effective lookout was impossible on that vessel. The report also found that, due to administrative duties that distracted from his navigation, the OOW of the cargo vessel became aware of the fishing vessel's radar return only when it was less than 1nm away. At that range, and with a closing speed of about 11 knots, it gave him only about five minutes to assess the risk of collision and take avoiding action.

Lessons learned

- Navigating in fog is not a time to undertake administrative duties in lieu of navigation.
- Some fishing vessels, especially those made of wood, can give poor radar returns. Constant attention to the radar is needed in poor visibility to detect small targets such as these as soon as possible.
- AIS is a useful tool for detection but not all vessels, especially fishing vessels, are so equipped.
- This lesson learned is a recurring one for MARS reports ... When in doubt, slow down.

MARS 202223

Bottom touch while under pilotage

➔ In good weather and in darkness, a tanker took on two pilots for port entry in the early morning hours (03:00). According to reports, there was a perfunctory Master/Pilot exchange (MPX) after which one of the pilots took the con. The inbound passage plan had been prepared by the crew, and the ECDIS charts marked with 'No Go' areas and parallel indexing. However, the actual pilot boarding area differed from the one in the original plan. As a result, after pilot boarding, the vessel was not on the planned route – it was significantly to the east of the leading lights that indicated the safe entry course.

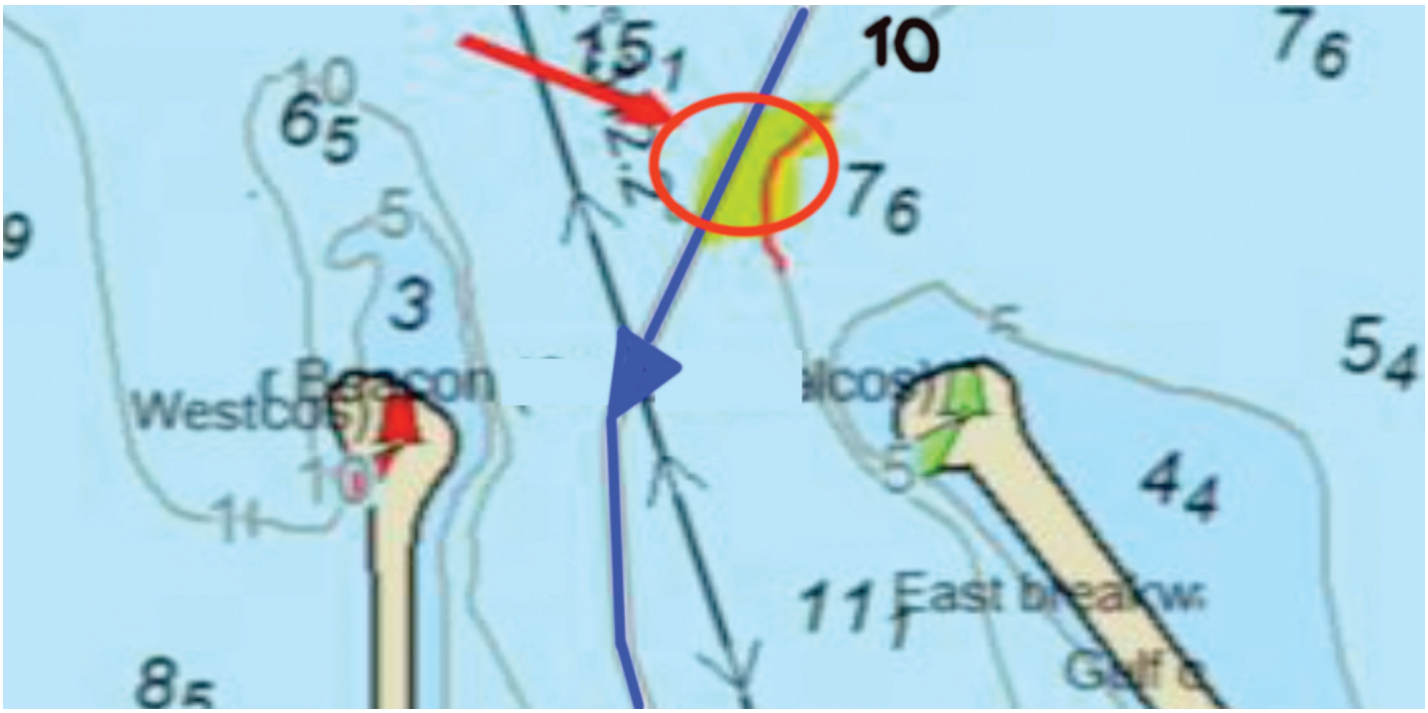
Soon after the MPX, the Master noticed that the vessel was approaching the 10 metre shallow contour and reminded the pilot that vessel's maximum static draft was 10.6 m. The pilot replied, 'Yes Captain' and soon after ordered 'port 10' followed quickly by 'hard to port'. The helmsman confirmed both orders. Then the orders 'midship', 'steady', 'port 10' and 'port 20' were given in rapid succession by the pilot and were confirmed accordingly by the helmsman.

Almost immediately a strong vibration was felt throughout the ship and the vessel started swinging to starboard. The pilot ordered 'Stop the engine'. The bridge team now knew they had touched bottom and the depth sounder was turned on. It showed 1m.

Tanks were sounded and water ingress was discovered in the port side ballast tanks.

Lessons learned

- Once again we have the classic question of when and how to challenge a pilot. In this case the Master warned the pilot but it appears this was already too late. Being too far to the east of the port entry leading lights from the beginning was a red flag that should have been resolved before the vessel came close to the breakwaters.



MARS 202224

Lack of physical barriers invites a tight squeeze

As edited from MSIU (Malta) report 02/2022

➔ A small hopper-dredger equipped with a deck grab crane was working on refurbishing a port breakwater. The work involved lifting boulders from the cargo hold with the deck grab crane and positioning them at the breakwater. The chief engineer was on the bridge overseeing the operation, and maintained direct contact with the crane operator via a portable radio.

The Master, who was new to the ship and had joined only two weeks earlier, was occupied with administrative tasks. At one point he decided to go on deck and check on some recent maintenance work at the bow. He took the access way on the starboard side of the cargo hold to reach the forecastle (the port side access way had been cordoned off). The crane operator, who was placing a boulder in position at the breakwater, noticed the Master in the proximity of the paint locker.

After checking on the maintenance, the Master decided to check the status of the boulders in the cargo hold. He climbed the starboard stairs to the cargo hold and looked inside the cargo hold. At this time,

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the crane operator had the crane's boom in line with the cargo hold and was picking up a boulder from the hold. Within a matter of seconds, the crane turned clockwise towards the breakwater, trapping the Master between the body of the crane and the cargo hold coaming. (Photo is a reenactment – the red and white danger tape was not present at the time of the accident.)

The crane operator heard a scream and turned the crane back towards the cargo hold. He immediately noticed the Master lying on deck. He raised the alert and the chief engineer called for shore medical assistance.

The Master was admitted to the local hospital, where it was found that he had suffered a massive hematoma, muscle laceration of the right abdominal wall, and a fractured vertebra. The victim was discharged from hospital the next day and received further medical treatment once home.

The investigation found, among other things, that although access to the forecastle from the port side of the cargo hold had been cordoned off by physical barrier system (a chain), access to the forecastle from the starboard side was unobstructed. Black and yellow 'hazardous area' markings were painted in a semi-circle on the deck around the crane, extending from port to starboard. But paint markings are a symbolic barrier system and therefore require interpretation to be effective (as opposed to a physical barrier system).

Lessons learned

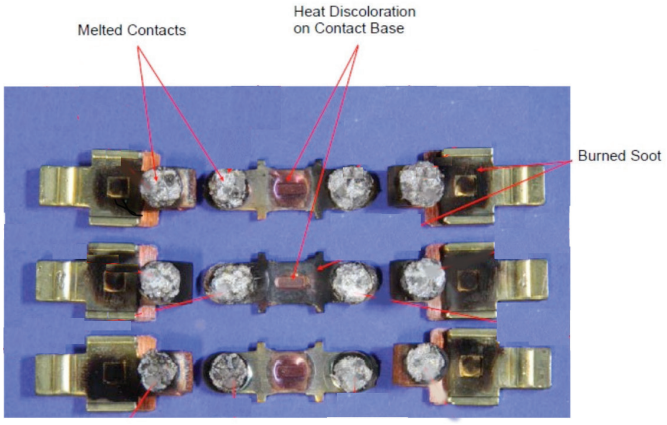
- While symbolic barriers are better than nothing, their effectiveness is debatable. Physical barriers are much better. And an excellent complement to physical barriers are administrative barriers documented in a vessel's SMS.
- MARS report 201851 documents a very similar accident but one with more serious consequences as the victim, new to the ship, died of his injuries. In that case, not only was there an absence of physical barriers but there were no danger warnings.

MARS 202225

Rescue boat davit winch unable to stop hoisting

As edited from USCG Safety Alert 03-22

A rescue boat was being recovered after normal deployment and maintenance. When the davit operator tried to stop the raising operation, the hoist button, emergency stop and limit switch circuits all failed to stop the winch from hoisting. Thankfully, personnel were able to disconnect the electrical power via the 480V main breaker before the boat contacted the davit, avoiding serious damages and injury to personnel.



Disassembled contactor during forensic analysis (Image courtesy Chevron North America)

Metallurgical analysis carried out after the event found that the failure occurred when the winch control contactors fused together due to the duty rating being exceeded. Additionally, it appears that the contactors were not rated for intermittent cycling (repeated start/stop sequences) of the winch. After inspection on other installations, several contactors showed evidence of overheating and indications of welded and scorched contacts were found.

Intermittent cycling is a common practice during recovery of a lifeboat or rescue boat into the stowed position. For example, a winch may be cycled after the boat has cleared the water to verify release gear condition. Or again, it may be cycled as the boat approaches the davit guides/stops to reduce momentum. While intermittent cycling is commonly employed for a safe recovery process, it may in fact cause power to exceed design and duty ratings of the electrical components.

Lessons learned

- Verify the condition of winch motor contactors and replace any contactors that show signs of excessive wear, overheating, or welding.
- Check the duty cycle ratings of lifeboat and rescue boat davit electrical components and compare those ratings to recommended and commonly-practised boat recovery procedures/processes.
- Confirm the design of the davit safety devices (ie, E-stop and limit switches) to see if they will secure electrical power to the motor in the event of welded contacts.
- Implement training for all personnel that operate the davits to ensure awareness related to electrical duty cycles and the actions needed to isolate power in the event of a welded winch motor contactor.

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