MARS

MARS Report 405 | July 2026

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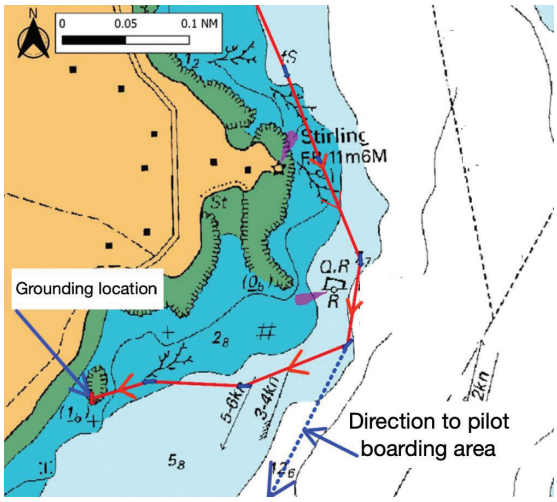
MARS 202623

Blind pilotage techniques in a pilot boat

A pilot boat Master was finishing his port departure checks before taking a pilot out to board an inbound cargo ship. By 0420, the pre-departure checks were completed and about five minutes later the pilot boarded. The pilot boat left the berth at about 0430.

The pilot boat's captain estimated that the visibility at ground level was less than 0.5 nautical miles, so they steered the vessel parallel to the town docks as they headed out. Soon, they passed north of a buoy and the captain turned the pilot boat into the main channel. They followed the starboard side of the channel and increased speed to about 15–18 kt speed over ground (SOG).

Because of the restricted visibility, the pilot boat's deckhand stood in the forward part of the wheelhouse as lookout. At about 0435, they altered course to starboard to continue towards the pilot boarding area. The captain was looking for the silhouette of a local promontory as the next visual reference to steer by.



Shortly after the alteration of course to starboard, the deckhand noticed that the chart plotter and radar screens showed the vessel heading towards the land and he told the captain. The captain looked down to check the screens and realised that the vessel was not where it should have been. A few seconds later, the vessel ran aground with both engines still running. The captain attempted to back off by putting both engines astern, but realised that would be ineffective when they saw rocks on both sides of the vessel and astern.

At about 0603, a Coastguard vessel towed the pilot boat off the rocks. Once the pilot boat was afloat and clear of the rocks, it became apparent that the steering was not functioning and only the port engine was running. The pilot vessel was towed into port by an attending vessel.

The investigation found, among other:

- The Master's situational awareness was significantly reduced by the state of the visibility and their navigation methods. As a result, at a certain point the boat turned too far to starboard and the vessel ran aground.
- The vessel had sufficient electronic navigation instruments to support navigation in restricted visibility. At the time of the accident, these instruments were switched on, but the captain was not using them to verify the vessel's position and progress.
- At the time of the accident, the pilot boat operating company did not require assessment of the ongoing proficiency of pilot vessel captains. This omission meant that there was no formal verification that navigation practices on board the pilot vessel continued to meet industry best practice.

Lessons learned

- Navigating using exclusively visual means in reduced visibility, even in well-known waters, is a recipe for an accident. See MARS 202154 for a similar situation.
- Speed through the water should be proportional to the quality of your situational awareness. This accident was in part due to ignoring this rule; that is, proceeding at high speed with a low situational awareness.

As edited from TAIC (New Zealand) report MO-2024-207 https://taic.org.nz/inquiry/mo-2024-207

MARS 202620

Fatigue implicated in fatal collision

Tanker A was underway in a traffic separation scheme (TSS) in good weather and with visibility of about 10 to 12 nautical miles (nm). At approximately 0224, the Master handed over the con and navigational watch to the OOW but remained on the bridge. The OOW on duty had joined the vessel the day before and this was his first watch.

At about 0430, satisfied with the OOW's familiarity with the vessel and the situation, the Master left the bridge. About 30 minutes later the vessel was transiting a high-density traffic route and approaching a planned waypoint which required a course alteration to port of about 50 degrees. The OOW delayed the course alteration to allow a ship on a reciprocal course to pass. Once the ship had cleared, the OOW instructed the lookout to switch to manual steering and alter course.

At around 0530, the OOW saw several targets ahead. The OOW consulted the X-band radar and visually identified a ship directly ahead, about 7.6nm away, with deck lights on but without navigation lights. Two additional ships on reciprocal courses were seen on the starboard bow. The OOW decided to maintain the current course of 018° to allow the vessels to pass safely.

At about 0540, the OOW entered the chartroom to prepare various reports. By about 0545, the vessel directly ahead was acquired on X-band ARPA, showing a CPA of 0.18nm in 17 minutes. The OOW informed the lookout/helmsman that as soon as the ship on their starboard side, identified as Target 47, had passed, a course change would be made to increase the CPA of the vessel ahead. The OOW again entered the chartroom.

At about 0551, the OOW returned to the wheelhouse. He confirmed Target 47 had cleared to starboard. The vessel ahead (Target 46) was now at 2.9 nm distance, with a CPA of nearly zero in approximately 12 minutes. The OOW made a minor course adjustment of two degrees to starboard. About three minutes later, after confirming that they would clear the vessel ahead by less than 200m, the OOW observed another radar target, Target 53, about two points on the starboard bow, with CPA of eight cables in six minutes. At that time, the OOW intended to pass between the vessel ahead (Target 46) and Target 53, which were approximately 0.7nm apart from each other. The OOW then returned to the chartroom.

At about 0558, the OOW was still in the chartroom. The lookout pulled the curtain and called the OOW urgently. On his return, the OOW saw a large ship at anchor less than a cable ahead with the deck lights on. This was Target 46. The OOW immediately switched to manual steering and applied hard starboard rudder. Despite the manoeuvre, and still making 14 knots, a collision was unavoidable. At approximately 0602, Tanker A's bow contacted Target 46's port anchor chain. The anchor chain entangled with their port bilge keel drawing the vessels closer. Target 46's bulbous bow breached Tanker A's shell plating and caused a fire on both ships. Target 46's bow flare also struck the tanker's port bridge wing, partially detaching it. The Master of Tanker A arrived on the bridge to a near apocalyptic scene of fires on deck and a partially destroyed bridge. He broadcast a MayDay distress call requesting immediate assistance.

The Master soon issued an abandon ship order. Flames engulfed the port side of the accommodation, and smoke spread to the starboard side. Initial attempts to launch the life rafts were stopped after fire was observed on the sea surface. Later, evacuation was possible and all 22 crew were eventually rescued.

Meanwhile, Target 46, also a tanker, was now

Damage to the vessel underway after collision and fire

adrift, its anchor chain broken from the impact, and the crew were fighting fires on board. Eventually, all crew were rescued from this vessel as well but one shore worker that had been on board died of injuries.

The investigation found, among other things, that the OOW had had only about two hours of rest in a 38.5-hour period since leaving his home and joining the vessel, and was likely experiencing fatigue. This could have reduced his performance and judgement during the developing close-quarters situation. The investigation also found that the anchored vessel had attempted to warn the oncoming tanker with the ALDIS lamp and sound signals, but these were ineffective. Despite the escalating risk, VHF was not used as an additional means of communication, which could have supported situational clarification.

Lessons learned

- Two vessels underway colliding may end in an even distribution of responsibility, but colliding with an anchored vessel is usually more one sided against the vessel underway.
- Why did the OOW feel it necessary to attend to administrative duties while navigating at night in a busy waterway? Are vessels adequately manned to account for administrative burdens imposed by today's maritime environment?
- Attending to any other duties except navigation while in charge of a watch is a recipe for disaster.
- With only about two hours of rest in a 38.5-hour period before the collision (due to travel to the ship among others), it is almost certain the OOW was experiencing fatigue, which negatively affects performance and judgement. At a minimum, travel time to join a ship should be counted as time on board for the purposes of work/rest calculations.
- Given that:
  ISM requires companies to establish safeguards against all identified risks;
  Sufficient restorative sleep is the only antidote for fatigue;
  It follows that, over and above work/'rest' calculations, companies should endeavour to ensure, through manning levels, procedures and safety culture messaging, that their crew have had sufficient restorative sleep before working.

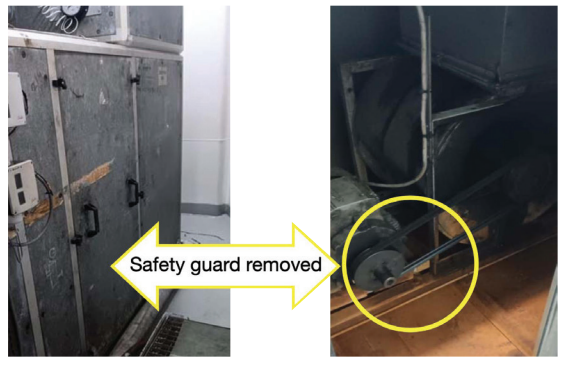
As edited from TSIB (Singapore) report TIB/MAI/CAS.173

MARS 202625

LOTO failure leads to injury

A vessel was underway in bad weather and was pitching and rolling. An engineer was tasked with a routine check of an A/C compressor. He removed the safety guard of the still running compressor, but the motion of the ship caused him to lose balance. He instinctively grabbed forward to steady himself, but his left hand came into contact with the moving belt of the compressor and was badly injured.

The next day he was evacuated to shore facilities for expert attention.



Lessons learned

- Before any intervention, machinery should be fully stopped and isolated (Lock out/tag out).
- Effective risk assessment, work planning meetings, and toolbox talks are essential. They should include specific consideration of vessel motion, weather conditions, and human factors.
- Crew members shall be encouraged and empowered to exercise Stop Work Authority whenever unsafe conditions are identified.

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