



Mariners' Alerting and Reporting Scheme

MARS Report No 331 May 2020

MARS 20202

Fatal fall into water

As edited from official MAIB (UK) report 15-2019

→ A tug was about to depart a berth that it often used. One crew member was on the dock to let go the lines. He was wearing a full set of personal protective equipment (PPE), including an auto-inflating lifejacket with a personal locator beacon (PLB) and crotch strap, which was fastened. Once the lines had been let go aft, he went forward and released them. He then walked back towards the tug's bulwark gate, which was now aligned with the centre of a berth fender. The over-riding was damaged, and as he stepped over it and lowered himself onto the top of the fender, he fell into the water.



His lifejacket immediately inflated and he started to drift clear of the berth and tug with the tidal current. The tug's Master immediately moved the tug away from the berth and alerted local VTS of the accident. The victim was floating on his back about five metres off the tug's port bow with his head out of the water. Another crew member tried to throw him a rope, but the wind blew it back on board. A lifebuoy with a lifeline attached was thrown. After several attempts, it landed close to the victim, who put an arm through it.

The two crewmen then used the attached line to pull the victim to the foot of the tug's port side rescue ladder and gate, which were located approximately midships. He had now been in the water for about five minutes and was able to hold on to the recessed ladder, but he was unable to climb up. The water was rough, with waves up to 2.5 metres high and a temperature of 4°C.

The crew attempted to use the man overboard (MOB) rescue sling. Although they managed to pull the victim out of the water as far as his waist they were unable to lift him further. Now, a crewman climbed down to the first rung of the ladder and held the victim with one hand. However, he was unable to sustain this position and climbed back on deck. Both crewmen held on to the pole of the rescue sling with its eye under the casualty's arms. The victim was conscious and groaning, but did not speak. About five minutes later (he had now been 10 minutes in the water), he went limp and slipped from the eye of the rescue sling.

The crew then went to the starboard side of the tug to prepare the tug's 'Jason's Cradle' (water recovery device) but before they could fully rig the cradle a harbour rescue boat arrived and recovered the victim.

As the victim displayed no signs of life, cardio-pulmonary resuscitation was undertaken as the rescue boat was taken to rendezvous with an ambulance. The victim was declared deceased on arrival at the hospital. The postmortem examination showed that the cause of death was cardiac arrest due to cold water immersion.

Some of the findings of the official report were:

- Concerns regarding safe access to and from the tugs at this berth had been raised at safety committee meetings and during company inspections many times prior to this accident.
- Non-slip paint was applied to the fenders in 2014, following tug crews expressing their concerns about hazardous boarding practices at the berth. This had the effect of legitimising these practices.
- The crew had not been fully prepared to deal with the emergency situation, and were unfamiliar with the use of the tug's MOB rescue-sling. The records indicated that this crew held only one MOB drill in the last year.

Lessons learned

- Even a cursory view of the berth, with its uneven surfaces, broken over-riding and lack of hand-holds, indicates the area is not suitable for boarding. It would appear the crew were tolerating this situation against their own better judgment as this issue was raised at safety meetings. If you think something is unsafe, do not relent; make it safe.
- Beware of half-measures, such as the application of non-slip paint in this instance. When applying risk reduction measures, always make risks As Low As Reasonably Possible (ALARP).
- Practising MOB events develops critical skills you may need to save a life.

MARS 202026

Finger crushed

→ Two crew were tasked to secure the hose handling crane jib in its cradle support. One crew operated the crane while the other signalled. As the crane jib was lowered, the signaller attempted to manually align the wooden block over the jib cradle support. He held the block and signalled to the operator to lower the jib. He did not notice that his own finger was positioned under the block. When the jib was lowered into position, his fingertip was crushed between the crane jib and the wooden block.

Immediate first aid was given and once in port he visited a shore doctor for further treatment.



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Lessons learned

- Crane operations are inherently risky. Excellent communications and situational awareness are essential for everyone involved.
- Crane operations need a dedicated crane operator and a dedicated signaller. If other manoeuvres are needed, a third person should be employed.

MARS 202027

‘Compliant’ yet still fatigued

Edited from TSB (Canada) official report M16P0378

➔ A tug was pushing a barge in ballast. The tug was connected to the barge with pins; an arrangement commonly called an articulated tug-barge (ATB). At one point, the OOW altered the ATB’s course to port to pass one nautical mile off an island at the entrance to a channel. Just over 30 minutes later, the ATB passed the next port alteration waypoint off the island but did not alter course. At this time, the weather was light winds and rain, and a 0.3 metre sea.

Another crew who was doing rounds called the OOW from the galley intercom radio but received no response. After a second attempt, again with no response, he made his way to the bridge. A few minutes later, while he was still on his way to the bridge, the ATB struck a known and charted reef at the entrance to the channel. Following the impact, the OOW reversed both engines and placed the rudders hard to port.

The noise of the engine in full reverse and/or the vibration of the tug alerted the remaining crew. The Master went to the upper wheelhouse, took over the watch, and instructed the OOW to ensure that the crew were awake and that they should survey the damage to the ATB. The tug’s starboard engine was disabled, so the Master attempted to reverse off the reef with the port engine and rudder. The ATB pivoted but did not move off the reef, and the tug made contact with the seabed several times. Because of damage to the tug, pollution occurred. The crew were forced to abandon ship and were recovered by local marine authorities.

Among others, the investigation found that the OOW had likely fallen asleep and missed executing the course alteration point. The OOW’s fatigue stemmed from two sources:

- Acute sleep disruption. He averaged 5.8 hours sleep on the three consecutive days preceding the accident instead of the recommended eight, and
- Chronic sleep disruption. He had worked a very challenging and relentless schedule for the last 23 days. This disruption was further compounded by an individual factor: the OOW’s inability to nap on most days during the afternoon or early evening break.

Additionally, as the OOW was alone on the bridge at night without a bridge navigation watchkeeping alarm system (BNWAS) or off-track alarms, there were no mitigating factors to prevent a sleep related occurrence from happening.

Lessons learned

- This is a good example of why it is important to investigate for fatigue in an in-depth and fastidious manner. Even though the OOW may have been compliant with regulatory work-rest requirements, he was suffering from fatigue nonetheless;
- Alone on the bridge at night – not a best practice;
- The use of off-track alarms on ECDIS or ENC is recommended;
- A BNWAS is another layer of safety that should be considered, even on vessels which are not required to carry this equipment due to their size.

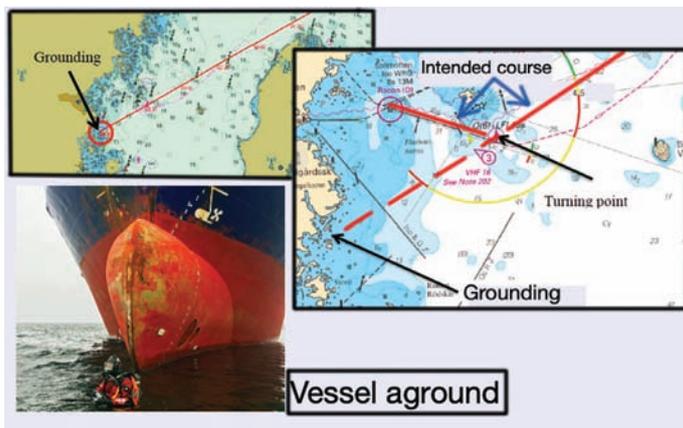
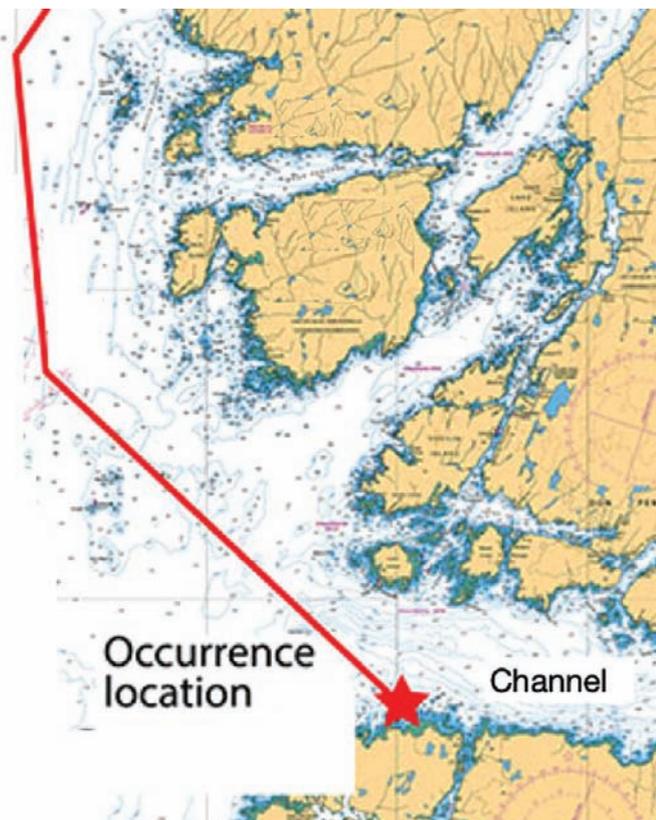
MARS 202028

More fatigue, another grounding

Edited from SHK (Sweden) official report RS 2018:04e

➔ A small vessel was on a short sea trading routine, making shuttle trips between two ports separated by approximately 12 hours sailing. On the ballast leg of the route, the Master had taken the night watch to allow the chief mate to rest, as he would be busy all the next day with cargo operations once in port. There was no lookout on the bridge during any part of the voyage because, according to the Master, the crew had worked so hard during the unloading period.

At one point the Master altered course toward the destination port. The next thing he remembered, he was woken by a call on the VHF radio. The call came from the pilot boat at the arrival port, asking if everything was OK because the vessel seemed to be in shallow water. The Master answered that everything was fine – but within a few seconds of the call, the vessel grounded. The vessel had passed straight by the arrival destination without turning to port and had continued on until it grounded.



The official investigation noted, among others, that:

- The BNWAS was not turned on;
- The Master was probably fatigued himself due to the two watch system;
- The Master was probably under the influence of alcohol during his watch;
- There was no lookout on the bridge during the transit.

Lessons learned

- A 'dry' ship is a safer ship. Alcohol and ship work do not mix well;
- As in MARS202027, a BNWAS can be a helpful tool to help prevent sleep related accidents;
- As in MARS202027, being alone on the bridge at night is not best practice;
- Even though this vessel was manned according to its safe manning certificate, it was evidently understaffed for the job it was required to do in the time that was expected. So, why did the Master leave port if everyone was fatigued?

MARS 202029

Line Throwing Apparatus incident

➔ A vessel was at sea and holding position. As a training exercise, the ship's deck crew were discharging line throwing apparatus (LTA) on deck. Before the exercise, a toolbox talk was completed and the dangers discussed, including the importance of standing clear of the device when firing takes place. The device operating instructions were read out to the exercise participants.

After the first LTA was discharged, it was noted that there was a danger that the line could become fouled in the ship's propellers after falling into the water. As a solution, a senior crew member suggested catching the line on its descent to speed up recovery. Unfortunately the designated crewmember caught the line too early – on its ascent. The speed and trajectory of the line caused it to cut through the victim's glove and cause a minor friction burn to a finger. The victim was immediately given first aid treatment.

The victim was new to the ship and relatively inexperienced. The suggestion of catching the line on its descent was made by a senior member of the crew and taken as an order by the inexperienced crew member.

Lessons learned

- Young or old, experienced or not, the practice of good seamanship is often just a matter of common sense. If a suggestion or order does not make sense then it should be questioned immediately.
- Senior or more experienced seafarers must remember that they have a responsibility to supervise less experienced crew members in the practice of good seamanship and be aware that suggestions can sometimes be regarded as orders.



MARS 202030

Blown onto a lee shore

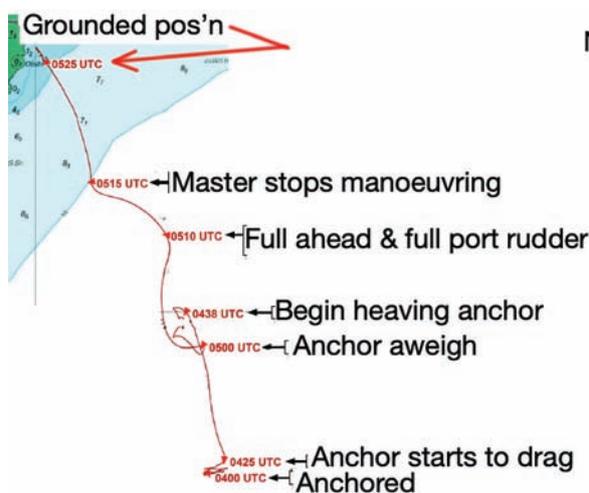
Edited from official MAIB (UK) report 11/2019

➔ A bulk carrier coming into port was low on bunkers, and because of payment problems the Master opted to remain at anchor overnight rather than go into port. The vessel anchored with seven shackles of chain in 17 metres of water one nautical mile off the coast. The weather forecast predicted southerly winds up to Force 8. The Master's night orders specified that in wind speeds in excess of 31kts, the main engine should be in immediate readiness. The Master also discussed the risk of the vessel dragging anchor with the bridge watchkeepers, and before going to bed emphasised his instructions regarding engine readiness.

At 2100, in view of the increasing wind speed, the OOW ordered the duty engineer to ensure that the main engine was in immediate readiness. By 0400 the following morning, the southerly wind was gusting over 52kts, the sea swell was between 4 metres and 5 metres, and the vessel had begun to yaw. Twenty-five minutes later, the vessel started to drag its anchor towards the lee shore at a speed of about 1.4kts. The Master was called to the bridge.

The anchor was brought in with difficulty. About 35 minutes after the initial dragging it was aweigh. The vessel started to fall beam to the wind and the Master's attempts to keep the bow into the wind and check the leeway by intermittent use of the engine were unsuccessful. When the anchor came into view an abandoned chain was seen snagged across its flukes. Once advised that the anchor was fouled by another chain, the Master stopped manoeuvring. An attempt to clear the chain by dropping the anchor and heaving it in again was unsuccessful.

By 0510, the vessel was approximately six cables off the coast on a heading of 274° and making over 2kts leeway to the north. Running out of sea room, the Master applied full port rudder and put the engine to 'full ahead' to try to turn the vessel into the wind. Five minutes later, the Master assessed that the vessel would not clear the point, which was only 0.5nm to the west, and stopped the engine. With the vessel within two cables of the shallows, the Master ordered the port anchor let go. The vessel grounded on the coast at 0525. The vessel was later refloated but had sustained significant damage.



Lessons learned

- Anchoring on a lee shore with expected high winds should be avoided;
- The Master's decision process had possibly been influenced by the fact that the vessel was low on bunkers, another situation to be avoided;
- In situations such as these, fast and decisive action is needed. Better to lose an anchor than a ship.

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