



Mariners' Alerting and Reporting Scheme

MARS Report No 328 February 2020

MARS 202008

Grounding was not in the plan

Edited from official TAIC (New Zealand) report MO-2018-203

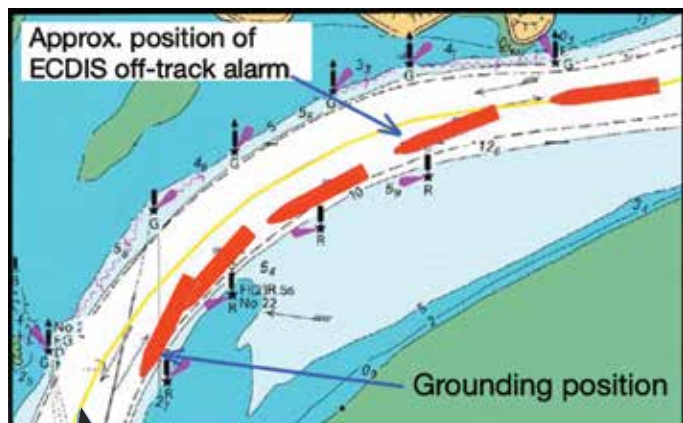
➔ A container ship picked up a pilot while inbound to a port in darkness. The Master, OOW and helmsman were on the bridge. The pilot showed the bridge team the planned route on his portable pilot unit (PPU). The ship's passage plan was displayed on the vessel's ECDIS. It was similar to the pilot's route in that the ship was to stay in the centre of the narrow channel, but there were subtle differences in the radius of the turns.

Soon after the inbound trip began, the pilot checked the settings on the PPU and found an unwanted 18-metre offset to starboard. He was unable to remove the offset, so decided to stop using the PPU to monitor the ship's progress and instead con the ship visually, using the ship's radar as an aid. He did not tell the rest of the bridge team that he had stopped using the PPU. Soon, harbour tugs were in attendance and secured fore and aft.

By this point, the ship was already to port of the planned track. Despite this, the pilot gave a succession of large helm orders to port (between 20° and 35° rudder angle). As the vessel responded to the port rudder, the deviation to the left of the planned track increased, activating the off-track alert on the ECDIS. The alarm was acknowledged but the information was not passed on to the other members of the bridge team.

The vessel gradually slowed as it made the turn to port, deviating ever further to the left side of the channel. Now, at a speed of 2.5 knots, the bridge team felt the ship heel over to starboard. At that point the Master asked the pilot why the engine was still on dead slow ahead. The pilot ordered the engines to increase to slow ahead. However, the ship continued to lose speed and soon stopped altogether. The bridge team now realised the vessel was aground.

With the help of the tugs and the vessel's engine the container ship was brought off the bank and back into the channel, continuing the voyage to the berth without further incident.



Yellow = middle of the channel

The official investigation found that, among other things, the grounding demonstrated why it is not always appropriate to use visual navigation exclusively when manoeuvring large ships in narrow channels, especially at night. The accuracy of electronic navigation aids such as PPUs and ECDIS could have added value; the ship's departure from the intended track would have been readily apparent in time to avoid the grounding.

Lessons learned

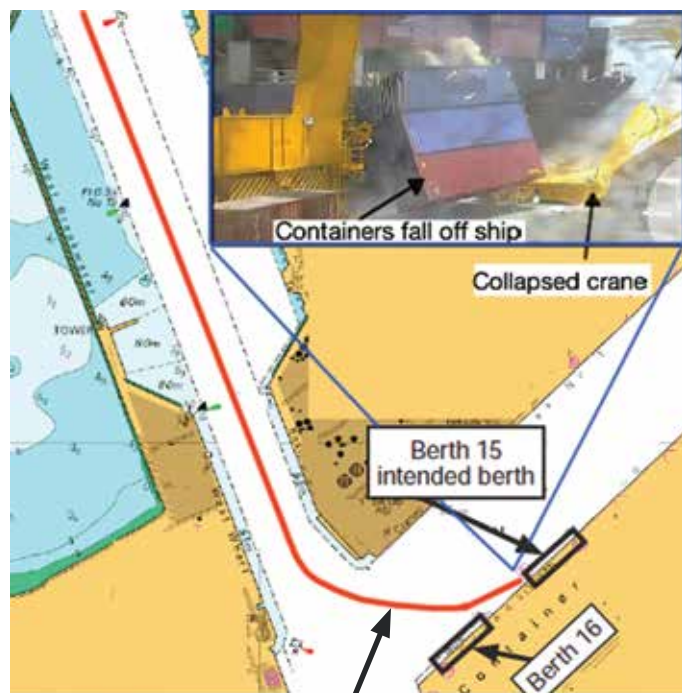
- The real-time instantaneous position information given by ECDIS and PPU equipment should always be put to good use in restricted pilotage waters, particularly when in darkness.
- When under pilotage, don't leave your BRM techniques in the classroom. Challenge the pilot if there is divergence from the planned route.
- In order to raise a challenge if need be, you have to know the plan and follow its execution.

MARS 202009

Too fast in, too slow to turn

Edited from official MAIB (UK) report 17/2018

➔ The pilot arrived on the bridge and asked for 'full ahead'. The pilot was using the port side radar, and the chief officer was at the starboard radar to monitor the navigation. The Master operated the telegraph and the helmsman steered the ship manually to pilot's orders.



Vessel's approximate trajectory

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The pilot advised that the ship would tie up at berth 15, port side to. Two tugs would be used for berthing, one on the ship's starboard bow and one on the starboard quarter. The Master advised the pilot that the ship had a draught of over 15 metres and was 'very heavy'. About seven minutes later, while inbound, the pilot asked the Master if the ship was 'good turning', to which the Master replied 'She is, but maybe she's heavy'. The vessel was now making about 13 knots. The main engine was set to half ahead, and then in quick succession slow ahead and dead slow ahead.

As the ship passed through the port entrance at seven knots the pilot ordered 'slow ahead' and a berthing tug was made fast forward. Within a minute, with the ship now at 6.3 knots, the pilot ordered port 20°, and then hard to port, followed shortly by port 20°. The pilot then stated aloud 'It is a problem if I start turn too early'. The Master replied: 'I think it is too late'. The pilot immediately ordered hard to port.

Within two minutes of initiating the turn to port the pilot requested half ahead and ordered the tug forward to push with full power on the ship's starboard shoulder and the tug astern to push with full power on the ship's port quarter. He also asked the Master to use the bow thruster with full power to port and, 30 seconds later, ordered full ahead. With the ship swinging to port at a rate of 12° per minute, the pilot told the Master 'All will be good when we attain a rate of turn of 20–25° per minute'. The Master replied 'She's very heavy'.

While turning to port, the vessel was also setting laterally to starboard towards the container ship crane at berth 16. The pilot ordered hard to starboard and the Master stated 'This is no good'. He then telephoned the engine room, advising them to prepare for an emergency. After several other fruitless manoeuvres the vessel struck berth 15 at a speed of 5.3 knots, hitting two shore cranes, one of which immediately collapsed. Several containers fell from the ship on to the quay as a result of the impact.

Lessons learned

- At the very inception of the turn to port the Master suspected the manoeuvre was not going well, even expressing this to the pilot, yet he did not intervene (see note below). This speaks to how difficult it is to override a seemingly competent pilot. The expectation is 'This is the pilot's territory, he knows what he is doing'.
- The plan was to berth port side to at section 15. Instead, the vessel made heavy contact with the berth on its starboard side. This is a classic case of too much speed for the desired manoeuvre in the given space. If ever in doubt, slow down.
- **Editor's note:** The following quote is taken from the most recent Swedish Club Navigational Claims 2020 publication:
'If the Master for some reason is not confident in the pilot's orders he needs to voice this concern immediately. If he believes the vessel's safety is at risk, he must relieve the pilot. It is not uncommon for The Swedish Club to find that, following navigational claims, the Master has afterwards stated that he was concerned with the pilot and how they navigated the vessel. However, he did not relieve the pilot and take over.'

MARS 202010

Planned maintenance interval revised

➔ A tanker had finished a discharging operation and crew were carrying out pre-departure checks and preparations while awaiting the pilot. During these checks, an engineer started up the main engine lube oil separator. An alarm indicated an excessive amount of water in the clean oil outlet of the separator. The engineer immediately reported this issue. Further checks found that the main engine lubricating oil had been contaminated with fresh water.

The Master cancelled the departure to allow time to further investigate the anomaly, and notified the company, local authorities,

harbour master, charterer, and classification society of the delay, as required in the SMS.

The investigation revealed that the solenoid valve on the main engine lube oil separator had malfunctioned. The internal orifice of the solenoid valve had allowed leakage through to the clean oil outlet and sump tank oil.

Although the maintenance interval for the lube oil separators was set at 4,000 hours or at least once a year, there was no detailed guidance to vessel crew about solenoid valve maintenance and inspection requirements. It was not anticipated that the internal components of solenoid valves could become worn beyond specifications within this period.

Lessons learned

- The company decided to reduce the time interval for scheduled maintenance to 2,000 hours or at least once every six months. Further, the internal components of solenoid valves were to be replaced annually.
- The main engine lube oil separator system was to be fitted with an additional automatic control solenoid shut-off valve on the clean oil outlet line to the sump tank.

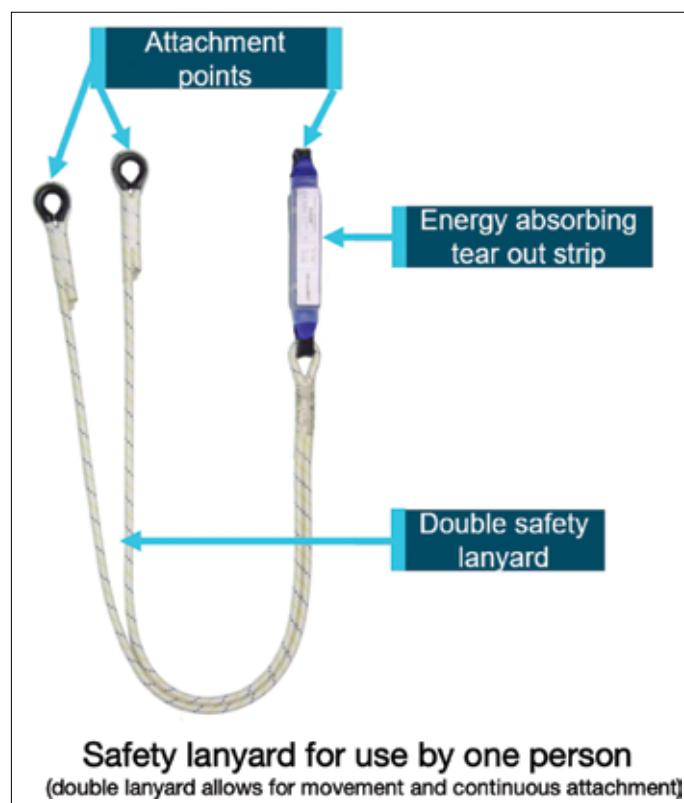
MARS 202011

Improvised work aloft has bad outcome

Edited from official ATSB (Australia) report 338-MO-2018-001

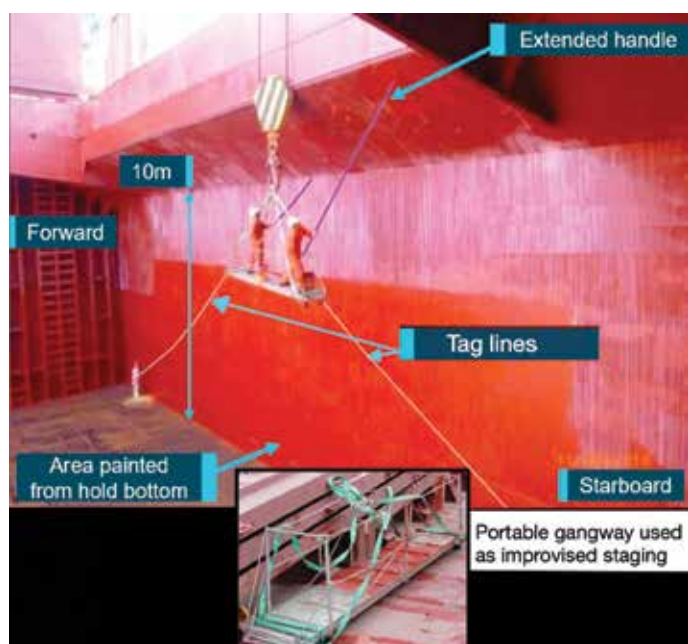
➔ A bulk carrier was in port. Following recommendations from a surveyor, the holds were to be painted to render them acceptable for grain transport. The vessel did not have any scaffolding, so it was decided to jury rig the ship's portable gangway into a work stage. This work stage could then be suspended from the cargo crane hook via slings in order to reach the higher areas in the hold.

Company risk assessment procedures required approval from shore management for working aloft. In this case, however, approval was not sought.



In preparation for the painting, the gangway was rigged with additional ropes to secure the open ends of the gangway. Slings were fastened either end for lifting and suspending it from the crane. Tag lines were connected to the underside of each end of the gangway and run to the hold bottom where they were to be used to control the motion of the suspended staging by two crew. Two other crew donned safety harnesses and attached themselves to the double safety lanyard on the fall arrest line – which was designed for one person – one to each attachment point.

The free end of the fall arrest safety line was tied off to one of the crane hook shackles, clear of the staging slings and the hook itself. The two ABs boarded the staging on the main deck. Because the improvised arrangement had limited stability, the ABs stood one at each end of the staging to balance it. They were to work from these positions and limit their movement so as to not upset the staging and equipment on board.



To enable the crane to reach over the hatch coaming and into the hold, the crane driver had to bypass the crane's lower luffing limit protection. The crew members on the staging and in the hold were unaware of this – the only person who was aware was the crane driver.

One of the crew on the staging signalled to the crane operator to move the hook by luffing the jib up. As the crane jib was raised, the falling block also rose and caught on the lower edge of the hatch coaming. This went unnoticed by the work team. As the jib was raised further, the block suddenly came free of the coaming, sending an unexpected heavy shock through the staging, upsetting it and its load. Both crew were knocked over on the staging, landing heavily on their knees and lower body. The severity of their injuries meant the crew members had to be taken to hospital.

The investigation found, among other things, that:

- The task was not conducted in accordance with company safety management procedures or industry best practice with regard to risk management and working aloft permit requirements. Machinery and equipment were used in a way they were not designed or approved for, making hazard identification difficult and exposing the workers to increased risk.
- The fall arrest equipment was incorrectly attached. Both workers were attached to the same device, which was designed for only one person. Had either of them fallen from the platform the equipment would not have worked correctly, resulting in serious or fatal injuries.

Lessons learned

- In this accident, the list of improvised procedures and less than adequate working conditions is long. If you find yourself improvising, stop! Consult with your office and do a proper risk assessment.
- Only lift people using gear that has been approved for that purpose. In this case, the gear was not approved for this kind of activity.
- Never bypass safety switches. They are there for a reason.
- Learn how to use your vessel's safety gear. In this case it appears the crew were not only improvising, but were unaware of the correct way to use the double lanyard.

■ **Editor's note:** You may find yourself 'painted into a corner' one day, where circumstances seem to conspire against a planned approach and perceived time constraints pull you towards taking shortcuts or improvising. Resist these forces. In reality, they are generally false pressures. Take a step back, consult with your office, ask for guidance. A company with a strong safety culture will not blame you for doing this, they will congratulate you.

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