



Mariners' Alerting and Reporting Scheme

MARS Report No. 314 December 2018

Note to our readers

Some readers may have noticed that certain MARS reports based on official accident investigations sometimes contain 'lessons learned' that are not found in the published report. It is true that most official reports do not actually contain 'lessons learned' but rather findings, conclusions and/or probable cause. Investigators are required to limit the scope of their published findings to the facts contained within the report and are also limited by the investigative agency's precisely defined mandate. In MARS, we have more latitude, and can use the accident report to serve a wider purpose through encouraging potential improvements to safety.

Astute readers may also have noticed that some MARS reports leave out a few of the findings contained in the official accident report. This is unavoidable when a 50- or 100-page report has to be compressed into just three paragraphs. Clearly, a choice has to be made about which of the lessons learned are the most important to bring to readers' attention. We strive to create the biggest positive impact from the most concise report.

Although we use official reports in MARS, we strongly encourage readers to send in their own reports of accidents or close calls. You can submit a report either as a pro-forma company report or on the form available at <https://www.nautinst.org/en/forums/mars/submit-a-report.cfm>. Don't forget to send photos – each one is worth a 1,000 words! Reporters must identify themselves to the editor for quality assurance purposes, but we carefully edit all reports and images published in MARS to remove any names or other identifying marks.

MARS 201875

ECDIS shortcuts contribute to grounding

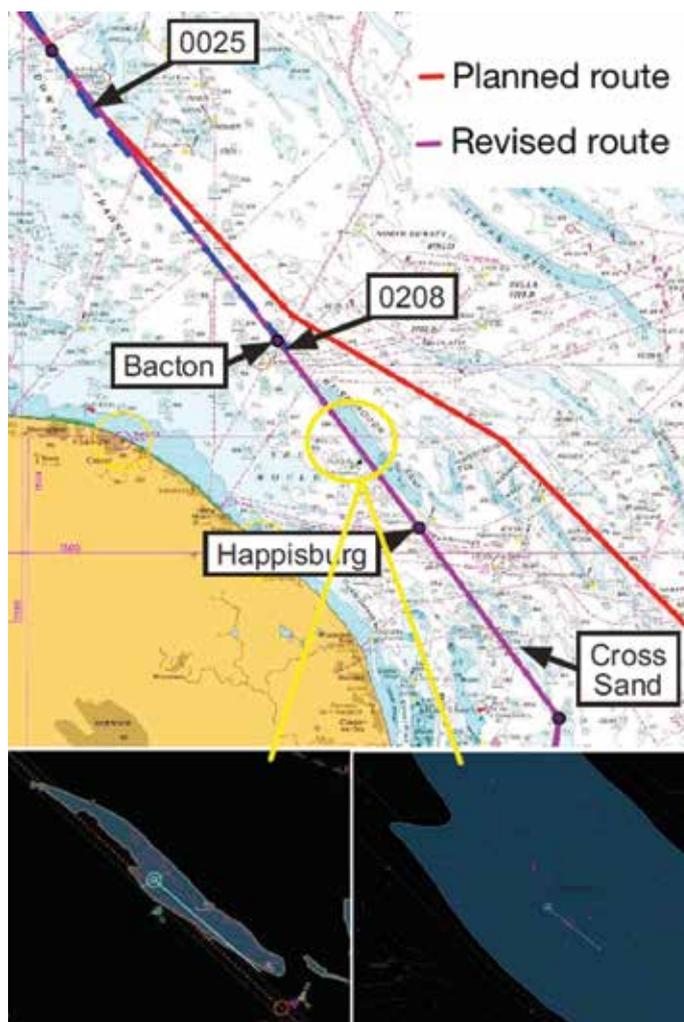
As edited from official UK Maritime Accident Investigation Branch (MAIB) report 22-2017

→ A small bulk carrier was on passage at night with good visibility and fair weather. The vessel was following a track displayed on the ECDIS and was making good a course of 146° in autopilot steering at a speed of about 11kt.

During the watch handover at midnight, the Master instructed the OOW to amend the passage plan to follow an alternative route. The OOW amended the passage plan on the ECDIS and adjusted the vessel's heading on the autopilot to 140°, following the revised track. The OOW then sat in the starboard chair while the lookout alternated between standing on the bridge's port side and sitting in the port chair. The lookout routinely reset the bridge navigation watchkeeping alarm system (BNWAS).

The vessel was 600m to the north-east of the revised track when the OOW adjusted the heading to 146° towards the waypoint 'Happisburg' to the south of Haisborough Sand. About 40 minutes later, the OOW felt a change in the vessel's motion. On seeing the speed reduce quickly, the OOW called the Master. The Master and chief engineer arrived on the bridge one minute later. Meanwhile, the OOW had zoomed in on the ECDIS display and changed the chart view display from 'standard' to 'all', which showed more detailed depth information. The Master realised that the vessel was aground and put the engine telegraph control to stop.

It took five days to refloat the vessel, which subsequently had to be towed to port to repair a damaged rudder.



ECDIS 'standard' view

ECDIS 'all' view

Some of the report's findings include:

- The OOW's visual check of the revised route did not identify that the track over Haisborough Sand was unsafe; it was neither planned nor checked on a chart of appropriate scale.
- The revision of the passage plan conflicted with the OOW's watchkeeping duties and the Master did not check and approve the revised route.
- The audible alarm and the guard zone had been disabled, removing the ECDIS barriers intended to alert bridge watchkeepers to imminent danger.
- The use of the 'standard' chart view limited the information displayed. Relying on visual checks when passage planning meant the process was prone to error.

Visit www.nautinst.org/MARS for online database

Lessons Learned

- Changing a passage plan 'on the fly', in this case at night, while underway and without the Master's final check, introduces additional risks.
- Select the appropriate level of zoom and chart view when using ECDIS, especially when navigating coastal waters.

■ **Editor's note:** While ECDIS is undoubtedly a leap forward in continuous situational awareness when compared with paper charts, like any tool it must be used appropriately. The ease with which a route can be changed should not relieve the mariner of the need to verify that the route is actually safe for their vessel.

MARS 201876

Charcoal fire in container

As edited from official BSU (Germany) files 455/15 & 58/16

➔ On two container vessels, fires broke out in containers loaded with charcoal in bulk even though the charcoal had passed the UN N.4 test and was not classified as self-heating. In both cases, the charcoal cargo originated in the island of Borneo, Indonesia, and was destined for the same consignee. Due to the similarity of the cause of the fires, the investigation of the two cases was summarised by the BSU in one investigation report. On each vessel, the fires were controlled and extinguished with a minimum of damage to surrounding containers.



Charcoal as loaded in container

The report's findings include the following:

- It is not possible to fully determine the hazardous material properties of charcoal based on the UN N.4 test alone. This is at least true of charcoal that passes the preliminary test and is then transported in large packages or in bulk in large sea containers, for example.
- The UN N.4 test does not sufficiently address the dependency on the volume of the goods transported.
- In multiple instances, the cargo documents examined in connection with this case could not be definitely linked to the cargo transported – see Lessons Learned below.

Lessons learned

The website CargoHandbook.com provides the following recommendations for the transport of charcoal that is not classified in documentation as dangerous goods:

- Check that the laboratory certificate is applicable to the customer...
- Check that the laboratory is accredited by the competent authority...
- Check that the manufacturer's name is shown on the laboratory certificate...
- The laboratory certificate must accompany the shipment. After the

containers have been stuffed, the container numbers are to be added to the certificate (hand written is acceptable) and placed on board the vessel...

MARS 201877

PFD will float, you just can't put it on

As edited from US Coast Guard Safety Alert 1118

➔ During recent US Coast Guard inspections it was discovered that the securing strap of many lifejackets produced by a particular manufacturer were defective. The securing strap was fused at a point where it should have allowed sliding movement. As a result, a user would not be able to separate the halves of the personal flotation device (PFD) to allow proper donning of the vest.

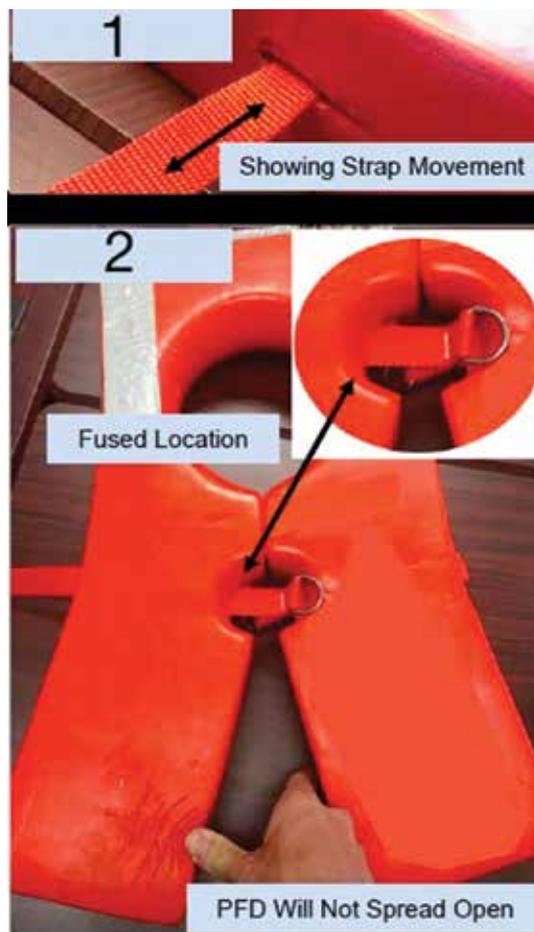


Figure 1 shows a proper lifejacket while Figure 2 shows a defective example.

Lessons learned

- Lifejackets are there to save your life – inspect them regularly and with diligence.

MARS 201878

Fingers squeezed by crane wire

➔ Three crew members were in the process of reeving in the topping wire of the provision crane. One crew member was guiding the wire on to the warping drum while another signalled to the bosun who was using a remote control on deck to run the drum.

At one point, wire pinched the fingers of the crew member guiding it, causing him to cry out in pain.

The bosun reacted quickly but, out of confusion and panic, he operated the crane in the wrong direction, which resulted in the crew member's hand being further squeezed by the warping drum. First aid was immediately administered. Because of the severity of the injury, however, the victim had to be signed off from the vessel and sent ashore for further medical attention.

The company investigation found that the bosun, who had just joined the vessel, was not sufficiently familiar with the safe and smooth operation of the crane.



Lessons learned

- A toolbox meeting (or Take-5 system) that exposes the job hazards and mitigation measures can help reduce accidents.
- Co-ordination and communication techniques should be agreed upon while performing any job that involves more than one person.
- Proper familiarisation should be given to any newly joined crew members. For example, the first few operations of the crane by a newly joined member of crew should be done under supervision of a qualified officer or other experienced crew member.
- Operating procedures and the instructions on the crane's key controls (with photographs) could be posted near the provision crane operating position for easy reference.

MARS 201879

Fire feeds on unnecessary materials stored in engine room

As edited from NTSB official report MAB 17/28

→ A tug was towing a loaded barge in coastal waters when a fire alarm for the upper engine room activated on the wheelhouse fire panel. The OOW tried to reset the alarm and to establish whether it had activated falsely; however, the alarm continued to sound. Moments later, a crew member alerted the wheelhouse that he had seen smoke.

The Master and the rest of the crew quickly arrived in the wheelhouse with lifejackets and immersion suits in hand. The Master instructed an officer to take a radio and investigate the fire. The officer reported that the space was inaccessible and said to start the fire pump due to the severity of the smoke. The fire quickly spread to the dining room, galley,

and several cabins located on the main deck. The Master attempted to slow the vessel and manoeuvre in such a way as to prevent the barge from over-running the tug, and to prevent the fire and smoke emanating from the upper engine room from being carried aft. However, the vessel quickly lost all power. Thereafter, the crew ceased attempting to fight the fire due to its intensity and rapid growth.

The Master informed the coast guard of the situation and the crew made preparations for abandonment. With the vessel now dead in the water, the Master was concerned about the fire and smoke engulfing the entire vessel and crew. They inflated and boarded the liferaft and then manoeuvred away from the tug to escape the extreme heat and explosions now occurring aboard the vessel.

The crew were picked up by a nearby private sport fishing vessel and taken to the closest port. When the fire burned itself out the following morning, the hulk was towed back to port. Due to the extent of the fire damage, the vessel was later declared a constructive total loss.

Finding of the official report

The probable cause of the fire was an ignition originating near an electrical fuse box in the upper engine room. Contributing to the intensity of the fire was the presence of combustible materials in the upper engine room, which included a drum of waste oil.

Lessons learned

- Engine room areas should be kept clean and free of unnecessary objects and stores, as these can act as fuel for any potential fire.



Before

After fire

READER'S COMMENT: MARS REPORT 201841

Collision goes unnoticed

→ A reader commented that another lesson learned from this accident – reported in the July issue of *Seaways* – would be to highlight the importance of OOWs fully understanding the strengths and weaknesses of relative and true radar displays. We can only agree with this point.

The reader also remarked that one of the lessons learned, 'For collision avoidance with a radar, use relative mode instead of true to have a better visual representation of collision risks', was not included in the findings of the source report. Additionally, the reader maintained, this is not good practice for collision avoidance.

Although it is true that this lesson learned is not a 'finding' *per se* in the source report, MARS staff have more discretion than the accident investigators to direct readers' attention to what can be improved. The source report is nonetheless concerned with this issue; using relative mode gives an intuitively simple visual representation of collision risk. This is made abundantly clear by the photos below, which are for the same target at the same moment, with a CPA of 0.76nm.



Relative mode

True mode

Visit www.nautinst.org/MARS for online database