

Mariners' Alerting and Reporting Scheme

MARS Report No 361 November 2022

MARS 202245

Pilot boarding area requirements: the lifebuoy

→ The SOLAS, Chapter V, Reg. 23 requirement for pilot boarding states only that a lifebuoy equipped with a self-igniting light '...shall be kept at hand ready for immediate use'. A reader of *Seaways*, an experienced harbour pilot, has commented that this specification could be improved. In his opinion, the lifebuoy would be best located about five metres aft of the pilot ladder. Ostensibly, this would somewhat compensate for the vessel's forward motion (if the pilot is in the water) since pilot boarding usually takes place at speeds between four and seven knots. The reader also suggests the lifebuoy be free of brackets so as to make the accessibility and deployment easier.

Lessons learned

- Standards are established to reduce risks but they should never be considered 'set in stone'. Standards themselves should be continuously evaluated and improved upon.
- Pilot boarding may seem like a common manoeuvre, and it is. But every time a pilot uses a pilot ladder, their life depends on the quality of the equipment used and the alertness and competency of the vessel crew.

MARS 202246

Control your control wire

As edited from USCG Safety Alert 07-22

→ A vessel's lifeboat with crew on board was being lowered to the water when the remote control lowering wire suddenly parted. Poor winch wire spooling under the outer layers led to a wire kink, creating a weak spot that contributed to the wire failure. The consequences in this instance were not serious, as the broken wire simply meant the brake was re-applied. However, had this been a real abandon ship, the consequences could have been more serious.

The remote control wire was replaced with an extra wire found on board, and another test was carried out the next day. The lifeboat crew boarded and the coxswain used the remote control wire to lift the brake and begin the descent. Again, the control wire failed to spool smoothly, and an unexpected pay-out of the control wire led to the winch brake prematurely engaging. The lifeboat stopped lowering and swung erratically above the embarkation deck. Seconds later, the swinging motion caused the wire to regain tension. This lifted the winch brake arm and caused the lifeboat to lower again, still swinging. As the lifeboat swung, the skeg keel caught on the deck edge, and the lifeboat listed by more than 90°, as seen in the photo. A crewmember on deck quickly activated the winch brake lever to save the situation. Had the lifeboat inverted further the consequences could have been catastrophic.

An internal company investigation identified that the crew did not follow existing company policy, which required a test lowering without crew prior to embarking crew. The company's policy is based on the recommendations contained within MSC.1-Circ.1578, Guidelines on Safety During Abandon Ship Drills Using Lifeboats. While a 'test



lowering' may not have prevented these incidents, it would have provided an opportunity to identify the poor spooling of the wire and prompted corrective action without risk to crew.

Lessons learned

Ship's crew should conduct a thorough visual inspection of lifeboat launching systems and perform a test lowering before carrying out operations with crew on board. Pay special attention to the following inspection points:

- Verify the proper spooling of the remote control wire, expand inspection as necessary.
- Verify that the remote control wire weight is in the correct position. If the weight is very close to the top of the lifeboat, this may indicate the remote control wire is too long.
- Verify the material condition of the shackle that connects the pull cable to the remote control wire within the lifeboat. These steel shackles can corrode and may be overlooked during weekly/monthly/annual inspections.

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MARS 202247

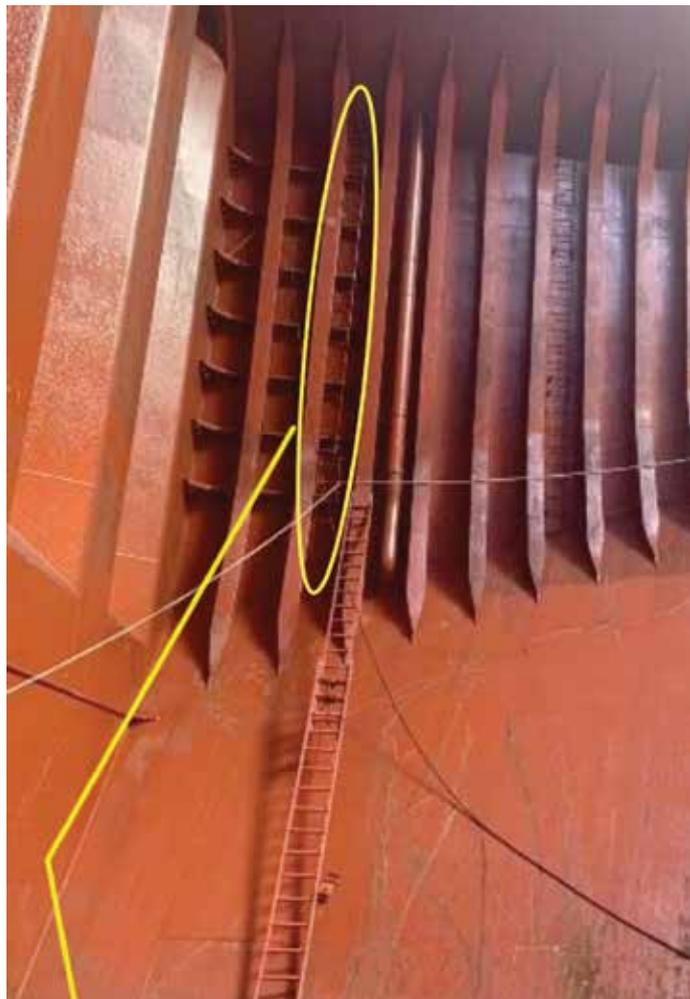
Double lanyard – zero attachment

As edited from Transport Malta (MSIU) report 06/2022

➔ A loaded bulk carrier was at sea. The deck crew were washing and cleaning cargo hold no. 7 which had remained empty. The crew members had donned their Personal Protective Equipment (PPE) which included a twin-lanyard safety harness for the crewmember who would be working at height. The hatch covers were opened, and a portable ladder was rigged on the starboard side, forward over the hopper and just abaft of the corrugated transverse bulkhead. The portable ladder was secured next to the fixed steel ladder. A guide rope and a safety line were secured across the upper reaches of the cargo hold.

Two crew were working aft while the other crewmember aloft was forward, standing on one of the stiffeners at a height of about 7.5 metres above the tank top. He was using a power washer and a hand-held broom to wash off coal residues that had remained in this area.

Suddenly, the two crewmembers aft were alerted by a loud scream. They saw the victim had fallen from the stiffeners and was lying on the tank top, and rushed to aid him. The victim was conscious, bleeding slightly from the head, and complaining of severe chest and back pain. The accident was reported to the bridge and first aid was administered. The victim was then carefully evacuated from the cargo hold and taken to the ship's hospital, where his condition was continuously monitored. At the time, the vessel was approximately 150nm off the coast. Following communication with shore medical authorities, the Master altered course and proceeded towards the coast. The following morning



Area of work aloft

the victim was air-lifted by helicopter to a local hospital. Injuries were severe but not life threatening. The victim was returned to his home country for medical follow-up and recovery.

The victim confirmed during the post-accident interview that at one point just before the fall, both of his safety lines had been unsecured. The investigative agency found, among other things, that the actions of the victim were similar to several other instances on file where the need to 'get the work done' seems to override safety concerns, even where the situation was not an emergency. It would appear that if the person in question perceives that they have 'control' of the situation, this influences their decision making process and evaluation of risk.

Lessons learned

- Qualitative risk evaluation is subjective and can be affected by factors such as the person's perceived control over the situation, the familiarity or even 'shock value' of the risk. Mundane tasks are a breeding ground for misplaced judgement, even those that present severe risks.
- Safety harnesses are equipped with two lanyards for the express purpose of always having one connected while the other one is repositioned. Make sure you and your crewmates use them correctly.

MARS 202248

Hot fuel oil incapacitates two crew for months

As edited from Transport Malta (MSIU) report 07/2022

➔ Crew on a bulk carrier in port were planning a transfer of heavy fuel oil from a storage tank to fuel oil settling tank no.1 (FOST-1). The fourth engineer and an oiler were tasked with this job.

For the last six months, the crew had been using fuel oil from fuel oil settling tank (FOST) no. 2 and service tank no. 2. while FOST-1 and its corresponding service tank were kept empty. FOST-1 was therefore deemed to be empty by engine crew.

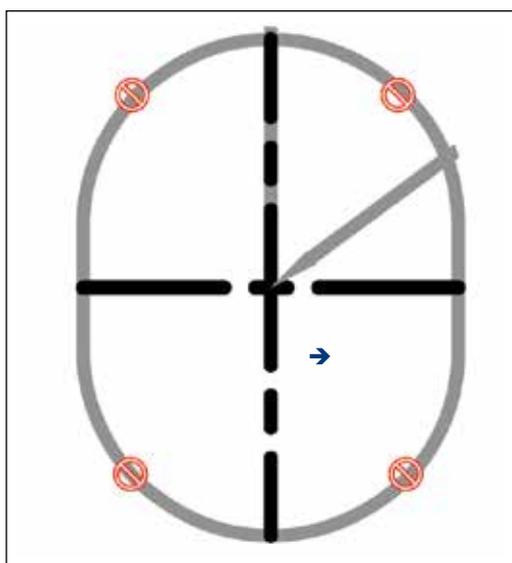
The fourth engineer was directed to open the lower manhole of FOST-1 before starting the transfer, to verify that there was no sludge that could contaminate the bunkers. Before doing this, he checked the fuel oil gauge, and opened the FOST-1 drain valve. Both actions indicated that FOST-1 was empty, much as he and other engine crew had previously assumed. He noticed that the temperature in FOST-1 was elevated (about 78° C), which was unusual for an empty tank, but assumed that heat conducted from adjacent tanks accounted for this.

With the assistance of an oiler, the engineer proceeded to open the manhole cover using a pneumatic wrench. The first nuts were removed



FOST-1 drain valve

without incident, leaving four opposite each other still tightened, as shown in the diagram. The engineer proceeded to loosen these last ones, starting from the bottom nuts. At this stage, he noticed a small amount of fuel oil seeping out of the manhole. Assuming that this was the expected seepage of fuel oil which normally remains stuck to the tank sides, he continued undoing the nuts. As he loosened the last two bolts, fuel oil started to seep out in larger quantities. Now concerned about the increasing seepage, he attempted to reinstall and retighten the nuts. However, the flow and high temperature of the fuel oil spilling on his hands and torso were too much for him, and he had to abandon the area, as did the oiler helping him.



Two other engine crew, both in the vicinity, were alerted to the situation and raised the alarm. Both the fourth engineer and the oiler had skin burns over the lower chest and abdomen. The victims were immediately transferred to the vessel's hospital for first aid and an ambulance was arranged to evacuate them to a local hospital. One victim was discharged from hospital after two months of treatment, the other only after three months of treatment.

After the accident, it was found that the oil level gauge and its drain valve were partially clogged with sludge. Once cleaned, the oil level gauge worked correctly. The fuel level in FOST-1 was found to be at the lower edge of the manhole; a volume estimated to be nine cubic metres. It is estimated that eight cubic meters were lost into the engine room.

Lessons learned

- Always try to be aware of confirmation bias in your daily work and life; question your assumptions and double check the facts.
- Fuel gauges and drain valves can become blocked with sludge and not indicate the correct level of fuel or drain as designed. Sounding pipes, which in this case were not fitted to the FOST-1, are an efficient and reliable double check on liquid levels within tanks.

■ **Editor's note:** Confirmation bias is a condition whereby a person gives more weight to facts and indications that confirm their assumptions while assuming counter indications are unimportant. In this case, the elevated temperature in a supposedly empty tank was discounted, as was the first small seepage when loosening the last bolts. The crew were 'sure' the tank was empty so they minimised signs that indicated otherwise. Yet, it contained about 17 cubic metres of fuel oil before the manhole was opened.

MARS 202249

A fatal fall

As edited from the Marshall Islands Maritime Administrator report, 14 February 2022

➔ A bulk carrier was underway and the crew were cleaning cargo holds in preparation for the next loading port. The bosun and four deck crew began by moving a 'mucking winch' to the sludge hatch of one of the cargo holds. The winch was used to lower equipment into the empty hold. First, two portable ladders were lowered to the tank top. Then two crew from the work party went down into the hold to disconnect the ladders.

The bosun hoisted the wire back up and prepared a large bucket of tools weighing about 10kg to lower into the hold. The deck around the sludge hatch was dry and free of cargo residues or other debris – but the Bosun was singlehandedly attempting to attach a heavy load to a hook that was suspended over an open hatch. As the bosun was holding the bucket of tools over the open sludge hatch and trying to connect it to the hook he lost his balance. He fell through the hatch, falling about 18.5 metres to the tank top below.

The two crew who were already in the hold heard the Bosun yell, followed by a loud noise. They turned to find the Bosun lying motionless on the tank top, with his head on one of the portable ladders. The alarm was raised and assistance given. The Bosun was conscious and responsive but he had multiple injuries to his torso and extremities. He was taken to the ship's hospital and arrangements were made to evacuate him to the nearest shore hospital. Unfortunately, within three hours he had succumbed to his injuries.



Sludge hatch and mucking winch

Lessons learned

- Certain jobs can lose the appearance of risk when they are commonplace to workers and/or have become repetitive tasks.
- Any workplace where a potential fall from height is possible should be treated with great caution and proper measures taken to mitigate falling.
- Trying to lift a weight that is on the limit? Ask for help.

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