Mariners' Alerting and Reporting Scheme

MARS Report No. 319 May 2019

This May edition of MARS might well be called the 'Man Overboard' (MOB) Issue. Falling overboard, whether while underway or docked in port, can be a traumatic and dangerous event. Mariners are often wearing heavy boots and clothing, so staying afloat is anything but easy. Work over the side is sometimes performed without the proper elementary precautions being taken such as wearing a personal flotation device (PFD) and using a fall prevention device. In any event, a MOB event requires quick action that does not come automatically unless appropriate exercises are practised regularly. Practice makes perfect and for a MOB incident you have only minutes to save a life.

MARS 201930

Taking vessel draughts – a dangerous task?

➔ The following photographs were sent to MARS by one of our readers. For the aft draughts, the crew member can be seen being lowered over the side in a barrel via the ship's stores crane. To take the draughts amidships, he has climbed down the pilot ladder and, now near the end of the ladder, is struggling to view the draughts below.

Taking the outboard draughts on large vessels may seem a daunting task, and can be dangerous. But need it be? Although the crew member in these photographs appears to have a lifejacket on, what is wrong with this situation? Is there a safer way to take your draughts?

Lesson learned

- Every task should be analysed for associated hazards. The work method adopted should be the one that decreases the associated risks to persons to the 'as low as reasonably practicable' (ALARP) level.
- What is the safest way to take your outboard draughts? Think about it, and continue reading below!

MARS 201931

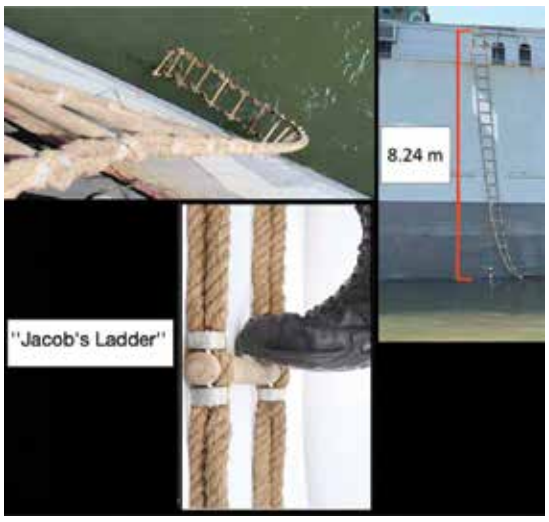
Crew member dies while taking draughts

Edited from official TSB (Canada) report M17C0232

➔ A small general cargo vessel docked starboard side to in a river port was preparing to load nickel concentrate. Before loading began, port state authorities inspected the vessel as per regulations for loading concentrates. An independent draught surveyor also boarded to conduct an initial draught survey before loading began. Under his supervision, some crew descended the rope 'Jacob's ladder' to take the draughts amidships. (A Jacob's ladder or monkey ladder is a flexible hanging ladder composed of vertical rope or chain and horizontal wooden or metal rungs of lightweight construction. In this case, the crew descended the ladder to take the draught because the draught surveyor was not permitted by his employer to use such a ladder.) Soon after the survey the loading of the concentrate began.

After about 14 hours of loading, and now in darkness, the duty deck officer was tasked with taking the draughts. He disembarked on the dock and took the three inboard draughts, reporting these via VHF radio to the vessel's cargo officer. He then proceeded to take the outboard midship draughts, descending the same Jacob's ladder, which was still rigged amidships on the port side from the morning's draught survey.

The vessel's cargo officer tried to contact the deck officer several



times via VHF radio but received no response. Upon investigation, the duty officer's PFD was found in his locker, but the officer was nowhere to be seen. It was now assumed he had fallen into the water and a man-overboard alarm was raised. Although the vessel's crew searched with their rescue boat and other vessels were tasked as search and rescue (SAR) resources, searching the waters proved fruitless. The crew member's lifeless body was found downriver about seven days later. An autopsy showed death by drowning.

Some of the official investigation's findings were:

- The Jacob's ladder was rigged to the guardrail in such a way that there was no safe means of access; to reach the ladder from the deck it was necessary to straddle and step over the guardrail
- The Jacob's ladder was unsuitable for the task of reading the midship seaward draught marks. The ladder was unsuitable for a number of reasons, not least the very small tread area available for a foothold.

Lessons learned

- The ILO's Code of Practice 'Accident prevention on board ship at sea and in port' states that persons working overboard should observe the following safety precautions:
  - Fall protection system and PFD to be worn
  - Another crew member should supervise and assist as needed
  - Lifebuoy with a safety line readily available
  - Risk assessment conducted and work permit issued
- Although it is common practice to read the outboard draught marks from a rope ladder, a launch or small boat is more stable and brings the observer to a safer position closer to the water line
- Even when taking the inboard (dockside) draughts, always wear a PFD, as dock edges can be slippery.

■ **Editor's note:** For another unfortunate draught reading accident, see MARS 201822.

MARS 201932

Fatal fall overboard between the berth and the vessel

Edited from the Dutch Safety Board investigation report published May 2014

➔ In the early morning a general cargo vessel came starboard side to the berth to load steel and project cargo. To prepare the holds for loading the crew needed to remove the stored pontoons and place supports so that the tweendecks could be positioned inside the hold later on. The supervising officer stood on a hatch coaming ladder to guide the operation using hand signals and portable VHF.

As the pontoon was positioned above the hatch coaming, the supervising officer instructed the crane operator to swing the pontoon to the left and then slowly lower it. A short time later the seaman near the gangway noticed someone had fallen overboard amidships, between the quay and the vessel. The seaman raised the alarm on his VHF, grabbed a lifebuoy and ran to the position where he presumed the victim – the supervising officer – had fallen into the water.

The victim remained afloat even though he was not wearing a lifejacket. The seaman who had rushed to help was unable to bring him to safety from the quay with a lifebuoy. The victim appeared to lose consciousness shortly afterwards. Using a rope ladder, a crew member climbed down and, with half of his body submerged in the water, attempted to get the victim into the lifebuoy. However, he soon had to cease his rescue attempt due to the cold.

A second attempt succeeded in placing the victim on to a stretcher and he was lifted out of the water by the shore crane. Unfortunately, he was later pronounced dead and the autopsy found that he had died as a result of internal bleeding.

Lessons learned

- Recurring operations, even the most mundane, should be carefully analysed for potential hazards and the associated risks brought to ALARP levels.
- There should always be a direct and unobstructed view between the crane operator and the person controlling the lift.
- Some risks for falling overboard can be 'hidden in plain sight', as in this case. Do a walk around on your vessel and see if you can find any.

MARS 201933

Two crew overboard – never found

Edited from the Dutch Safety Board investigation report published January 2015

➔ A small general cargo vessel was sailing in coastal waters at about 13 knots in a moderate 1 metre swell. Two crew were tasked with cleaning work on the foredeck; they dressed and assembled the required hose and equipment before starting forward across the hatches. In rough weather, a safety line was usually used to secure persons walking on deck, but in this case it was judged unnecessary as the vessel was not rolling excessively and there was no water being taken on deck.

At one point, the OOW heard a shout and immediately saw the two crew in the water on the port side, now just aft of the bridge and about 2 metres from the ship's side. The OOW instructed the additional crew on the bridge to use the binoculars and not to lose sight of the two men in the water. He threw a lifebelt and a smoke marker into the water, then went inside to mark the man overboard (MOB) location on the electronic chart. He then notified the Master before using the autopilot to slowly put the ship into a starboard turn (now almost two minutes after the MOB incident). He then contacted the coast radio station requesting SAR resources. By now, those on the bridge had lost sight of the victims.

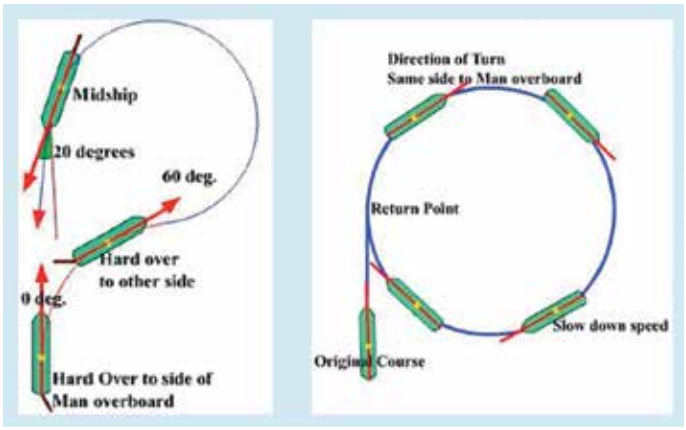
Once on the bridge, the Master took over control of the ship and accelerated the starboard turn. He also activated the general alarm to alert the rest of the crew. The vessel made it back to the initial MOB position about 11.5 minutes after the two men had fallen in the water. There was no sign of the victims so another smoke marker was deployed to refresh the previous one. A SAR helicopter arrived on the scene about 40 minutes after the men had fallen into the water and immediately started searching in the vicinity of the floating lifebelt that had been earlier thrown by the OOW. Searches continued with boats and helicopter until darkness but the missing crew members were not found.

Lessons learned

- If someone has fallen in the water there are many tasks to be done almost simultaneously. Only repeated practice and, especially, unannounced MOB drills can hone the crew to perform optimally.

- If in doubt, always opt for more safety rather than less. In this case the safety line was not used because it was thought unnecessary. Two men paid with their lives.
- One of the principal tasks for a MOB incident is getting the ship turned around and back to the incident area in the shortest possible time. If sea room allows, hard helm should immediately be applied (to the side of the fall) and one of several well known turning methods used, as below.

■ **Editor's note:** The Williamson turn is especially useful in reduced visibility as it brings the vessel back on a reciprocal course and into its own wake. However, with good visibility the Anderson turn should be employed as it is a quicker turn.



Williamson Turn **Anderson Turn**

MARS 201934

Deadly fall into water while rigging accommodation ladder

Edited from the official MAIB (UK) report Report 8/2010

➔ An inbound container vessel had just picked up the pilot. Two crew were on the upper deck preparing the port accommodation ladder prior to mustering at their mooring stations. Although they had brought two life vests on deck with them, these floatation devices stayed on the deck as they went about their work.

The hoist winch was tested by lowering the accommodation ladder approximately 1 metre and then slightly raising it. It was then lowered approximately 3 metres to allow a crew member to walk under the davit frame. A crew member stepped on to the upper platform and proceeded to the lower end where he rigged a section of collapsible handrails. He then went to the lower platform to make the rails secure while another crew member secured the safety ropes around the upper platform.

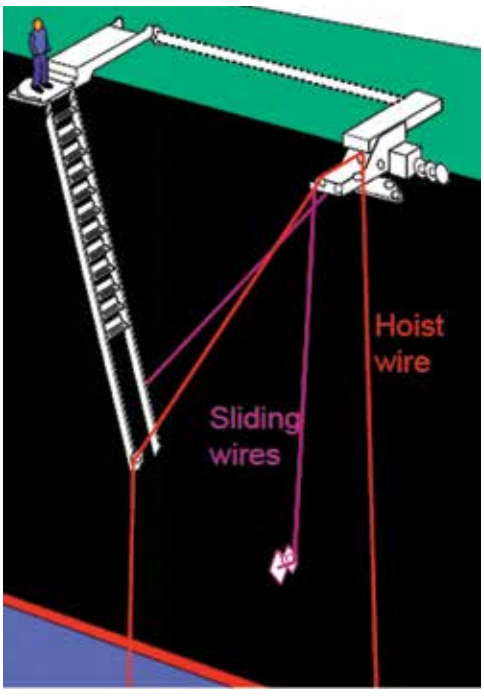
Suddenly, a loud bang was heard followed by a whirring sound as the ladder fell rapidly towards the sea. The lower ladder broke away and fell into the water, taking the attending crew member with it. The upper section of the ladder was left hanging vertically down from its upper platform hinges with the hoist wire dangling from the davit.

A crew member alerted the bridge via VHF radio and then ran aft to look for the victim over the stern. A tug was close by, but there was no sign of the victim. The vessel was in the relatively confined waters of the port and making between 5 and 6 knots through the water. One of the attending tugs and the pilot boat were assigned to look for the victim, as the vessel was constrained by the restricted water. The victim was spotted about half a metre below the surface of the water and recovered by the pilot boat crew some 10 to 15 minutes after the event, but there were no signs of life.

The subsequent autopsy determined the cause of death to be 'drowning with blunt force injuries'. The victim had suffered blunt force injuries to his head, neck, chest, back, abdomen and legs, resulting in a broken right femur, fractured ribs, multiple bruising and abrasions. These injuries were not considered to be fatal.

Lessons learned

- Accommodation ladder failures, although rare, are certainly not unheard of and numerous lives have been lost as a result. Risks involved in rigging and securing accommodation ladders should be duly accounted for.
- As in several of the MARS reports in this issue, the attending crew did not take basic precautions such as using fall protection and donning a PFD. The lack of these precautions cannot be solely attributed to the crew. The company and vessel leadership must also bear responsibility.
- The failure in this case to release the lifebuoys and smoke floats once the victim was in the water was particularly significant. It denied the ships involved in the search a visible reference, and also potentially denied the victim the buoyancy he required to remain afloat.



Collapsed accommodation ladder

Visit www.nautinst.org/MARS for online database