MARS – Lessons Learned

MARS Report No 384 October 2024

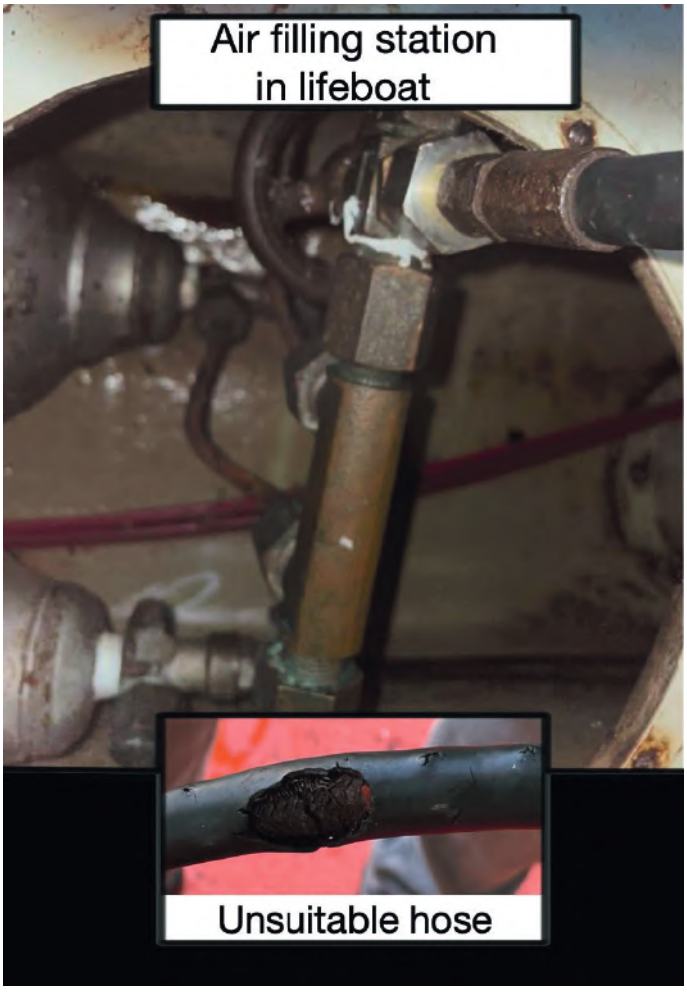
MARS 202450

High pressure hose whip causes eye injury

As edited from FEBIMA (Belgium) report 2023/000713
https://tinyurl.com/MARS202450

➔ A chemical tanker was discharging in port and two crew members were working to top-up the air pressure in the lifeboat air supply cylinders. One crew member was in the compressor room and operated the compressor while the other was in the lifeboat to connect/disconnect the air hose to the cylinders and validate the pressure. The crew member in the lifeboat was aware of the procedure but had never carried out the task before. There was no visual contact between the two crew members and communication was maintained by means of portable VHF radios.

All three cylinders were topped-up to a pressure of 200 bar. Then, after confirmation from the crew member in the lifeboat that the air cylinder valve was closed, the crew member at the compressor drained the air hose at the compressor end. When the pressure at the compressor gauge indicated 0 bar, he informed the crew member in the lifeboat by radio.



The crew member in the lifeboat also confirmed that the pressure gauge inside the lifeboat was zero. He then started to disconnect the air hose. When the air hose was almost completely disconnected, he heard air escaping from the filling valve; a small pressure had apparently built up in the supply line. He bent forward to check whether the cylinder valves were properly closed. At that moment the hose came off the connection and whipped his face. The crew member at the compressor heard shouting for help over the radio. He went immediately to the lifeboat and saw the victim was bleeding near his right eye. First aid was given and the victim was sent to a shore hospital.

The investigation found, among other things, that some air had re-pressurised the hose. This pressure was enough to initiate a whipping movement when the hose connection released of its own accord, having been nearly unscrewed by the victim.

Due to the lay-out of the air supply system, the person manipulating the air cylinder valves is in a vulnerable position in close proximity to the pressurised air hose. Although the filling hose was found to be in unsatisfactory condition, this was not a contributing factor to the accident. It should have been checked, discarded and replaced with an adequate hose by the crew members prior to commencing the job.

Lessons Learned

- Gases under high pressure are a potential hazard and risk assessments should adequately capture the risks and present reasonable mitigating practices for workers.
- High pressure components, such as air hoses, should be regularly inspected and unsparingly relegated if found in any way worn.
- Eye protection at all times and for all tasks; ideally it should become as ubiquitous as hardhat use.

MARS 202451

HFO vapours contribute to slow-motion death spiral

As edited from TIB (Singapore) report TIB/MAI/CAS.134
https://tinyurl.com/MARS202451

➔ On a cargo vessel at sea, two crew members, a fitter and a cadet, were tasked with a welding job in a hold. As they gathered on deck near where the work was to be done, they both noticed a strong smell of heavy fuel oil (HFO) fumes from a nearby vent. While the fitter entered the hold to weld, the cadet stayed on deck to pass hoses and equipment. He was about 3.5m from the HFO vent during the time of work, which took about 15 to 20 minutes.

When they stopped for lunch, the cadet informed the fitter that he was not feeling well and would rest instead of having dinner. The next day, the cadet informed a senior officer he was not feeling well, probably due to inhaling some fumes the previous day. The officer advised the cadet to rest and advised the Master of the cadet's condition later that afternoon.

For the next few days, the cadet was able to go to the mess room to eat but he had gastro-intestinal problems. He also complained of

a headache. The Master reportedly encouraged the cadet to eat more food to gain energy and to take fresh air. Some six days after being exposed to HFO vapours, the cadet was not recovering. The Chief Officer requested medical advice through the crewing manager, who consulted a doctor. The latter then advised to give light food to the cadet and informed the General Manager accordingly.

About 10 days after the cadet had been exposed to HFO vapours, the vessel was sailing in rough seas and several crew were seasick. Fearing that the cadet could be prone to falls in his weak state, the Master advised him not to leave his cabin and instructed another crew member to bring the cadet's meals to his cabin. Two days later, the Master communicated with the crewing manager informing him of the cadet's condition, which appeared to be worsening with dizziness, vomiting and diarrhoea.

It was agreed to divert to a port to allow medical attention for the cadet. Before the vessel could reach port, and some 13 days after having been exposed to HFO vapours, the cadet was found deceased in his bed. An autopsy determined the cause of death to be asphyxia due to aspiration of stomach content.

Lessons learned

- Never be complacent about the medical care of a suffering crew member. If symptoms are prolonged or beyond the competencies of crew on board, seek radio medical advice directly from the Centro Internazionale Radio Medico (C.I.R.M.) or equivalent facilities.
- Be aware of skewed judgement calls. In this case the Master's sense of urgency may have been dulled by thoughts that the new cadet was suffering more from sea sickness and/or ship adaptation rather than gas poisoning.

MARS 202452

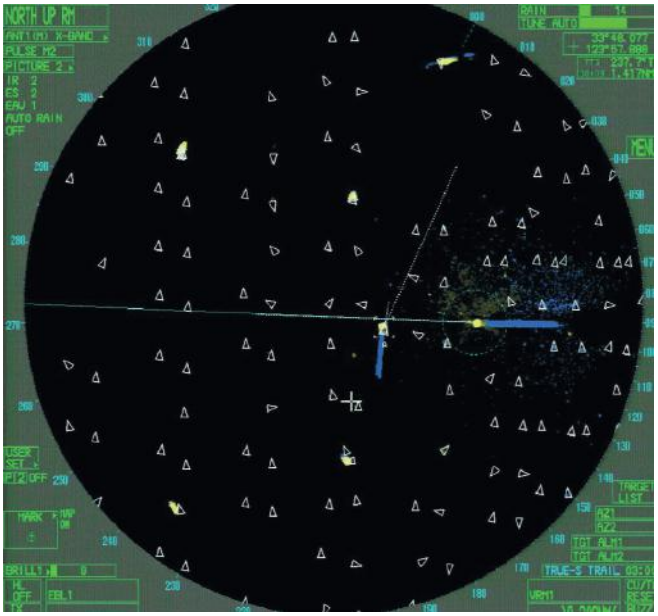
Extreme traffic density requires extra measures

As edited from BMA (Bahamas) report issued 11 September 2020
https://tinyurl.com/MARS202452

➔ In good visibility and in darkness, a chemical tanker was underway at about 13 knots with an OOW and a lookout on the bridge.

For several hours, they had been navigating in waters heavily congested with fishing boats, during which time the Master was also on the bridge to make decisions where necessary. At times there were over 100 AIS targets registered on the radar's 3-mile scale, a mixture of moving and stationary targets. By 23:00, they had cleared the dense fishing fleet, so the Master left the bridge.

At 23:19 the lookout reported what he believed to be a fishing vessel ahead and the OOW acquired it as an ARPA target on the X-band radar soon after.



Tanker's radar at 21.33

The Master of the other vessel later reported he sighted the tanker at around 23:30. As it transpired, this vessel was not a fishing vessel but a fish transportation vessel (FTV) underway and en route to port to discharge a cargo of fish loaded at the fishing grounds.

Approximately three minutes before CPA, which was essentially zero, the chemical tanker bridge team attempted to attract the attention of the other vessel using an Aldis lamp. The two vessels, on a steady bearing and closing range, maintained their course and speed until they were less than 0.5NM apart.

At this point, even though the FTV was the give way vessel, the chemical tanker's OOW took control of manual steering and altered course to port using 15 degrees port helm. At about the same time, the FTV made a bold alteration of course to starboard. Neither vessel used sound signals prior to their alteration but the tanker sounded two short blasts when it became apparent that the FTV was also taking action.

The vessels nonetheless collided with a closing speed of approximately 15 knots. The tanker's bow struck the FTV on the port side at an angle of 45 degrees. The tanker's Master and Chief Officer arrived quickly on the bridge and the engines were stopped, deck lights illuminated and an announcement made on the public address. The tanker's crew prepared lifesaving equipment, boarding arrangements and launched the rescue boat to help recover the crew of the stricken FTV who were in the process of abandoning ship.

Twelve of the FTV's crew were recovered from a liferaft by the tanker. The remaining five crew could not launch the FTV's second liferaft and were recovered by a nearby fishing vessel. The damaged FTV sank approximately an hour after the collision.

The investigation found, among other things, that there were no navigational constraints that prevented the tanker from reducing speed or altering course to starboard in ample time. Also, whilst the tanker attempted to attract the attention of the FTV with an Aldis lamp, no use was made of suitable sound signals until five seconds before the collision, when the tanker sounded two short blasts.

The report revealed that there have been many similar incidents in the same region, with significant loss of life. A study covering the years 2006-2011 identified 268 incidents involving fishing vessels in the proximate waters, resulting in 562 deaths. Common navigational issues in these cases are a failure to adjust passage plans to avoid areas of high density fishing traffic, failure to reduce speed in high density traffic areas and action to avoid collision being inappropriate, taken too late, with too small a margin for error or a combination of the three.

Lessons learned

- Passage plans should, to the extent possible, be adjusted to avoid well known highly congested fishing grounds.
- It is good practice to reduce speed when in highly congested waters.
- Trying to attract the attention of another vessel? Rule 34(d) is clear. When vessels in sight of one another fail to understand the intentions or actions of the other, or if one vessel is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately show such doubt by giving at least five short rapid blasts on the ships whistle.

MARS 202453

Eye protection needed

➔ A vessel was at anchor and crew were undertaking daily maintenance. A scheduled lifeboat waterborne drill had been completed, and one deck crew member was instructed to secure/ store the fall preventive device inside the lifeboats. At one point he was looking up as he worked on the fall protection device and a small foreign particle got into his right eye. Upon completion of the job, he did not raise the issue but a few days later the Bosun noticed a redness and swelling in the right eye of the crew member. The injury was then reported to the Chief Officer.

The victim was transferred to the ship's hospital and provided first aid. After communication with the MEDICO further instructions for medical treatment were given. The first onboard examination revealed that a small participle had stuck in the eye and caused a small irritation. Following onboard treatment and advice via MEDICO the small object was removed and the irritation vanished one day later.

Lessons learned

- As in MARS 202450 of this issue, eye protection at all times and for all tasks. Ideally eye protection should become as ubiquitous as hardhat use. Why not?
- Any injury or anomaly should be reported by the victim immediately to superiors. Do not wait!

MARS 202454

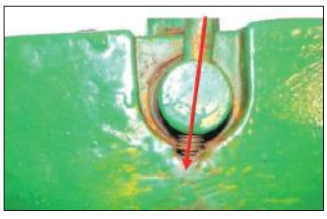
Mooring line self-releases

➔ A tanker had docked at port and a pre-loading meeting was being held.

About 40 minutes after mooring was completed, an officer on a safety round discovered that one of the aft mooring lines had un-spooled from its drum and had been lost overboard. He informed the personnel at the meeting and crew were mobilised to recover the line with the help of a mooring boat and a tug.

The line was recovered and re-installed. The investigation revealed that the drum control level had been left slightly in the release direction. The drum had then slowly un-spooled by itself after crew had left the aft mooring station. Normally, the spring loaded control lever of the mooring winch would catch at the detent notch that ensures a neutral position. In this case, the lever had not been placed in the neutral position.

Neutral position



Slightly in release direction

Lessons learned

- Check and re-check the mooring station and machinery before leaving.
- Safety rounds are a good practice and should be encouraged by senior shipboard leaders.

MARS 202455

Crushed foot leaves lasting imprint

As edited from Marine Safety Forum/ Safety Alert 15/05/2024
https://tinyurl.com/MARS202455

➔ An offshore windfarm Service Operation Vessel (SOV) was positioned at a wind turbine generator (WTG). Waves of 3m and a swell of 2.8m were being experienced but this was deemed acceptable. With the vessel in an optimal position relative to the connection point on the WTG and the prevailing weather, the gangway operator was given permission to make the gangway connection.

The gangway operator stood at the base of the telescoping access bridge and used the mobile remote control to operate the gangway and make the connection in the usual fashion. Due to the vessel movement, he had difficulty in making the connection and retracted the gangway to re-assess the weather conditions.

The weather conditions were determined to be within the capabilities of the gangway system and SOV, so a second attempt was made to connect. The gangway operator was again unable to make the connection and retracted the gangway. During this retraction, the telescoping section of the gangway frame travelled over the gangway operators' right foot, trapping it, and causing a compound fracture of the foot.

The investigation found, among other things, that the final section of the travel path (soft stop) for the gangway frame was not guarded. Additionally, the gangway operator's training had reinforced the practice of standing on the Telescope Access Bridge platform or in the operator shelter during gangway connection attempts, thus normalising the operators to this practice.

Lessons learned

- Guarding was installed along the exposed soft stop of the gangway to ensure a person cannot place their feet in the path of the retracting gangway frame.
- A physical barrier was installed at the base of the telescopic gangway section which prevents the operator from encountering the gangway when it is fully retracted.
- Gangway operator training program was updated with specific focus on entrapment and shearing potential areas on the gangway.
- Develop a set of sea state/vessel movement limits for gangway connections that the gangway operators can use as guidance to make an informed decision on when to stop the job independent of the vessel's station keeping abilities.

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