MARS – Lessons Learned

MARS Report No 377 March 2024

MARS 202412

Paint storage slip-up

→ A vessel was undergoing a Class inspection. During the inspection, the crew were surprised to find that the lower compartment of a crane pedestal contained many sealed paint cans. The Master was immediately notified and the paint was transferred to the paint locker. The company was also informed and the Designated Person Ashore (DPA) initiated an investigation.

The company investigation found that the paint stored in the crane pedestal was not listed in the vessel inventory, despite a recent update. The paint was transferred to the pedestal during the last dry dock because of a lack of space in the paint locker and ongoing work in the area. The crew who had attended the drydock work did not report this information to the relief crew. The paint in the pedestal was subsequently forgotten due to crew turnover and a deficient inventory listing.

Paint stored in crane pedestal

Lesson learned

- The paint locker on a vessel is the ONLY place to store paint and related products. This space is approved for this use and is protected by fixed fire extinguishing equipment.
- Crew handovers are opportunities for information to be lost. Make sure the full state of affairs on your vessel is documented for handover.
- Ship store inventories are important tools for quality vessel management. Keep them true.

MARS 202413

Vessel speed exacerbates bank suction

As edited from TSB (Canada) report M20C0188
http://tinyurl.com/MARS202413

→ A general cargo vessel under pilotage was up-bound in a canal waterway under reduced speed in anticipation of meeting several down-bound vessels.

The first down-bound vessel to make the meeting had a bridge team that consisted of the Master (who had the con), a helmsman, and the OOW. A company piloting Master was also on the bridge, training the Master in the canal system. Approximately 40 minutes before the vessels were expected to meet, the pilot on the up-bound vessel and the Master of the down-bound vessel began to communicate using instant messaging to coordinate the meeting.

The pilot on the up-bound vessel sent a message to the Master of the down-bound vessel proposing that when the vessels were around 0.8nm from each other, he would alter course to starboard by four degrees. He indicated that keeping a vessel in the centre for as long as possible reduces bank suction. The Master of the vessel acknowledged the pilot's plan and indicated that he would do the same.

On the down-bound vessel, the Master and the piloting Master were concerned about making the Estimated Time of Arrival (ETA), as given earlier to Vessel Traffic Services (VTS), for the next lock. The vessel's speed was close to 10 knots, and the piloting Master told the Master to keep the speed up. As the vessels came closer, the down-bound vessel was now about 12m to starboard of the canal centreline. To maintain the ordered course, the helmsman now needed to apply up to 20 degrees of starboard helm. Then, when the vessels were 0.8nm apart, each ordered their respective helmsman to go an additional four degrees to starboard. The up-bound vessel was sailing at 2.9 knots and the down-bound vessel at 9.8 knots.

On the down-bound vessel, the helmsman was now applying 30 degrees of helm to starboard to try and attain the extra four degree order, yet the vessel's heading was trending slowly to port. When the distance between the two vessels was 0.38nm, the Master of the down-bound vessel ordered the helmsman to steer two degrees to starboard instead of four, with the goal of bringing the vessel parallel to the centre of the channel. To comply, the helmsman reduced the starboard rudder

angle from 30 degrees to 10 degrees. Within seconds the vessel started to sheer to port. Even with full starboard helm reapplied, they collided with the up-bound vessel within minutes.

Lessons learned

- The bridge team of the down-bound vessel possibly felt time pressure to make an announced ETA. This likely influenced their decision to maintain maximum canal speed.
- The down-bound vessel proceeded at the canal's maximum permissible speed of 9.9 knots. At this speed, the hydrodynamic forces (bank effect) acting on the vessel were substantially increased as the vessel neared the starboard bank.
- During canal navigation where the waterway is very restricted, communication between the helmsman and the person with the con is critical. In this instance the extreme helm needed to achieve the four-degree starboard shift was an early and significant sign of bank suction that would have signalled a speed reduction was in order to reduce bank suction at the stern. Yet, it appears this information was not communicated to the Master with the con.
- Once the helm was reduced from 30 degrees to 10 degrees the lift force of the rudder was greatly reduced. With the stern under strong bank suction effect, the vessel immediately sheered to port and initiated the sequence of events that ended in a collision.
- It would appear that the down-bound vessel was conned too close to the bank too early prior to the encounter. Better practice, as was the initial plan, sees the two vessels each remaining close to the center of the channel during the approach and then, when about 0.8nm apart, they each jog their headings slightly to starboard.

■ **Editor's note:** This accident is very similar to one I personally investigated some 19 years ago, which was summarised in MARS report 201409. The official 2005 TSB report can be perused here: http://tinyurl.com/MARS201409

MARS 202414

Poor situational awareness leads to collision

As edited from the Dutch Safety Board report, published August 2023 http://tinyurl.com/MARS202414

➔A general cargo vessel was proceeding in a Traffic Separation Scheme (TSS) at reduced power due to engine problems, making 4.5 knots at dead slow ahead. It was dark, but visibility was good. On the bridge the OOW was accompanied by a lookout. The Closest Point of Approach (CPA) alarm was triggered on the ECDIS, and the OOW observed that a vessel was approaching them from astern, with a CPA of 0.2nm.

After acquiring the vessel on the ECDIS, the OOW recognised the target was a fishing vessel. The CPA was now 0.1nm and the vessel was doing about 9 knots. The fishing vessel was in sight from the wheelhouse and the OOW estimated that it would overtake them on their port side.

Concerned about the small CPA, the OOW called the fishing boat on the VHF Channel 16 but received no reply. He observed that the fishing vessel had appeared to execute a minor course change, and he noticed a slightly increased CPA. Satisfied that his call had been received, the OOW then sat down at the desk in the wheelhouse to carry out some administrative tasks. From that position, he had no direct view of the radar screen.

The lookout, now focused on the situation ahead, did not look astern again. Some minutes later, the fishing vessel hit the stern of the cargo vessel. The lone watchkeeper on the fishing vessel felt a bump and looked forward, but he did not see the cargo vessel. A second and third bump followed. The Master of the fishing vessel arrived in the wheelhouse. As the fishing vessel altered course, they saw the lights of the cargo vessel and realised they had bumped into its stern.

The cargo vessel suffered a hole in its stern in way of the steering gear compartment. Taking on water, the vessel had to make a deviation to a port of refuge.

Among other things, the investigation found that the cargo vessel's small size and low freeboard made it difficult to see the white stern light, which was positioned just above the waterline. Additionally, the fishing vessel was trimmed aft, and had masts that hindered the view of low objects forward (see image below), again making visual detection of the cargo vessel difficult. The report also found that the CPA alarm on board the fishing vessel was not activated prior to the collision.

Lessons learned

- Notwithstanding the low aspect presented by the cargo vessel and the poor visibility from the fishing vessel's wheelhouse, there is no substitute for keeping a sharp lookout by all available means. There really is no excuse for bumping into another vessel ahead and not even knowing what happened.
- Never assume a situation is clear until it is truly clear. In this case the OOW of the cargo vessel attended to other duties after assuming the fishing vessel was taking the appropriate action to avoid his vessel.
- CPA alarms are a welcome tool – keep them active.

MARS 202415

Monkey's fist knocks on office window

➔ A tanker was approaching a jetty for berthing. While still some distance from the jetty the first heaving line was thrown. The crewmember used a strong throw as he was aware that the distance to the jetty was at the limit. His throw was so successful that it sailed even further than the edge of the jetty and struck the office window further behind.

The investigation following the incident found that the monkey's fist was made to proper specifications without any extra weight added.

Lessons learned

- This incident shows that even an unweighted monkey's fist that conforms to accepted specifications can be a serious projectile if thrown with force.
- As a general rule, monkey's fists should never contain an internal extra weight. Their finished weight should be ideally under 0.5kg.

Visit www.nautinst.org/MARS for online database

MARS 202416

Checklist mentality is a burning problem

➔ A tanker was at anchor waiting for a berth. During the anchor period routine maintenance was to be done on the auxiliary boiler fuel oil pump. According to the vessel's records, a job hazard analysis had been carried out and a cold work permit and a pressure pipeline work permit had been issued before the work began. The senior person of the group undertook the work while the three junior members of the team watched.

The senior engine room crewmember switched the pump to manual control and put it in the stop position. He isolated the pump from the system by closing the inlet and outlet valves. He then proceeded to loosen the bolts of the filter cover. Suddenly hot fuel and gases spewed out of the loosened filter cover. All four crew were struck by hot fuel on their faces, necks and hands. The victims were given first aid and quickly disembarked to a shore hospital.

While two of the victims were only slightly injured and returned to light duty on the vessel soon after the accident, the two other victims suffered more severe burns. They required 11 days of hospitalisation before being repatriated.

The accident investigation revealed that the crewmember had loosened the filter cover without first releasing the system pressure from the vent cock. The vessel's 'Permit to Work on Pressurized Systems' included a check box for pressure release, and the box had been ticked, but the check had not in actual fact been done.

One of the victims

Lessons learned

- Avoid the 'checklist mentality'. The Safety Management System (SMS) tools are there for your benefit; use them.
- A supervisor cannot supervise if they are doing the work themselves.

MARS 202417

Near miss in open water and good visibility

➔ A loaded LNG carrier was underway at about 18 knots in open seas with low swell and waves near 1.5 m. Visibility was very good at approximately 15nm. The only traffic in the vicinity was a single fishing vessel. The bridge watch consisted of the OOW and one AB. The OOW had assigned the AB duties other than lookout due to the good visibility. The AB had seen the fishing boat earlier and had reported it to the OOW.

Some time later, the Master was on deck when he noticed the fishing boat abeam of ship's port manifold at a distance of about 50 metres. The Master went to the bridge to inquire about the close passing. The answers of the OOW were, upon further investigation, untruthful. It appears the fishing vessel had either been forgotten about or otherwise ignored by the OOW. Further inquiries uncovered that subordinates and other officers had observed less than adequate performance from this particular OOW in the past, but these observations were not reported to the Master.

Lessons learned

- Safety for one is safety for all. Regardless of your rank, if you observe dangerous or less than adequate performance from a teammate, advise your supervisor. Your safety depends on every team member pulling their weight.

MARS 202418

Caution call for condensate in air lines

As edited from USCG Safety Alert 08-23
http://tinyurl.com/MARS202418

➔ A recent investigation of a fire and subsequent loss of propulsion on a vessel caused by condensate forming in air lines is a cautionary tale. In this case, condensate formed in air lines that supplied compressed air to the vessel's air-operated engine throttle and clutch control systems.

There are many systems vital to vessel and personnel safety which depend upon the reliable, uninterrupted flow of contaminant-free compressed air. Propulsion control equipment (pneumatic engine starters, throttle controls, governors, air-operated clutch systems, etc.) and pneumatically operated air-blowers used in gas-freeing operations are just a few examples of such equipment.

Condensate forming within the air lines of a compressed air system indicates that the compressed air has not been adequately dried for the ambient operating temperature to which the air lines are exposed. When this happens, the temperature of the compressed air can drop below its pressure dew point and water vapour in the air may condense. This contaminates the air lines with moisture, which can cause an unexpected failure of air-operated equipment due to the restriction or blockage in the flow of compressed air, excessive corrosion, and failure of internal components. In cold weather, the condensate can freeze, potentially blocking the flow of compressed air or cause the pneumatic engine throttle and clutch controls to stick or freeze.

Additionally, this condition may create other environmental hazards such as increased generation of static electricity when used with pneumatic blowers/tools. To ensure the safe and reliable operation of air-operated equipment, it is critical that the supplied compressed air is free of moisture and other contaminants.

Lessons learned

- Identify compressed air systems vital to the safety of the vessel and/or personnel and ensure their arrangements are properly designed and installed for the ambient operating temperature and have adequate air-drying processes.

Visit www.nautinst.org/MARS for online database

Thank you to all our Nautical Affiliates for their continued support

ABC Maritime www.abcmaritime.ch	A. R. Brink & Associates www.arbrink.com	AIMS Institute of Maritime Studies www.aimsmaritime.com	BMT www.bmt.org/surveys	Britannia P&I Club www.britanniapandi.com	Chevron Shipping www.chevron.com
Commissioners of Irish Lights https://www.irishlights.ie/	Excelerate Technical Management https://excelerateenergy.com/	Exmar www.exmar.be	Finnish Ship's Officers' Union https://seacommand.fi/	Fundacion Avante https://fundavante.com	Gard www.gard.no
The Gdynia Maritime School https://www.morska.edu.pl/en	Green Bow Maritime https://www.greenbowmaritime.com/	IAMI http://iami.info	IMAT https://www.imat2006.it/	IMCS www.imcs-group.com	Iridium www.iridium.com
JMP Marine Surveyors https://jmpmarinesurveyors.com/	KASI GROUP www.kasimalaysia.com	Louis Dreyfus Armateurs www.lda.fr	Marine Society & Sea Cadets www.ms-sc.org	Maritime Training Services https://www.maritimetraining.com	Marlins https://marlins.co.uk
Martech Polar http://martechpolar.com	Menezes & Associates www.menezesandassociates.com	Metropolitan College https://www.mitropolitiko.edu.gr/	Mintra https://mintra.com/	MOL Group https://www.mol.co.jp/en/	NorthStandard https://north-standard.com/
NorthLink Ferries www.northlinkferries.co.uk	Norwegian Hull Club www.norclub.no	Ocean Technologies Group https://oceantechnologiesgroup.com	Pacific Basin https://www.pacificbasin.com	Pan Arab E-Navigation https://pa-en.com/	The Port of London Authority www.pla.co.uk
Poseidon Sea Pilots www.poseidonpilots.com.au/	Poseidon Maritime https://www.poseidon-maritime.com/	The PTC Group http://ptc.com.ph	Seagull Maritime AS www.seagull.no	Shipping Federation of Canada https://www.shipfed.ca	Skuld www.skuld.com
SQLearn https://www.sqlearn.com/	Steamship Mutual www.steamshipmutual.com	STARGATE https://www.stargatecrewing.ro/	The Swedish Club www.swedishclub.com	Stolt Tankers www.stolt-nielsen.com	Tsakos Group of Companies https://www.tsakoshellas.gr/
UK P&I Club www.ukpandi.com	Vertex Oil Spill Supply www.vertexoilspill.com.br	Videotel www.videotel.com	West of England P&I Club www.westpandi.com	WAVES GROUP www.waves-group.co.uk	

Our Nautical Affiliates help us make a difference to the shipping community by ensuring that our MARS Scheme is available to the industry for free.
Find out more at: www.nautinst.org/affiliate