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Seaways

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Climbing the professional ladder

Why mentoring is vital

The Nautical Institute

Philip Wake MSc, FNI Chief Executive

Focus

Mentoring at Sea

> There is a real need for the new generation of seafarers to be mentored so as to acquire the skills and competence that instruction in colleges cannot deliver

If we are asked 'Are you a mentor?' it is quite likely that many of us would say 'No,' and yet many people are mentoring without necessarily being conscious of doing so. Why is this? Probably because if we have read about mentoring, it is usually set out as a rather formal process and often on a designated one-to-one basis over a fairly long period of time. In some cases people lay claim to having had a mentor for much of their career and are undoubtedly extremely fortunate to have such support and advice. An example of such a formal mentoring scheme is that of the UK's Honourable Company of Master Mariners which links a young seafarer with a Master Mariner with the aim of the latter helping the former through the knowledge acquisition and experience process to become a Master Mariner. It is a good scheme and career-long mentoring has resulted from it in some cases as a friendship bond develops between the two mariners. In my case, my mentee did not stay the course to Master Mariner but she is still an active maritime professional ashore and she seeks advice occasionally. The system works, and it can be flexible where careers do not develop as expected.

However, mentoring does not have to be so formal or time consuming. A new book, *Mentoring at Sea*, by Captain André Le Goubin sets a 10 minute challenge for us all to pass on our knowledge and experience to our colleagues (see p 4 and pp 8-9). While his advice focuses on the need for the new generation of seafarers to be mentored so as to acquire the skills and competence that instruction in colleges cannot deliver on its own, it will work in any job at sea or ashore. The book makes a compelling case on the need for mentoring and does not shy away from the cultural, mental and emotional blocks to doing it effectively. It is also packed with good advice from an experienced practitioner who has been a seafarer since childhood, with various mentors in the many different sectors and roles that he has worked in. This book should be widely read on every ship and in every management office, and, if it is, we are confident that it will help generate a significant improvement in competency throughout the seafaring world. As such, it is very much part of the deliverables envisaged under the competency project of the current Strategic Plan and will be launched on December 11th at a seminar in Chennai organised by the India (South) Branch.

Season's greetings

As the festive season for many parts of the world approaches and another year draws to a close, it is natural to both reflect on past achievements and look ahead to what may be expected in the future. It is also a time of year when communicating with friends and family is even more important than usual. For a long time the Institute has spoken out vigorously on the need for broadband connectivity throughout the sea-going fleet for both business and personal communication reasons. It is slowly happening but the current review of GMDSS at the IMO, in which the Institute is prominently involved with excellent input from our members, provides the opportunity to speed up the evolutionary process. This is helpfully explained by Captain Esteban Pacha, the Director General of the International Mobile Satellite Organisation (IMSO) – see pp 10-11. It will also be an essential component for the implementation of the eNavigation concept which will aim to integrate the navigation systems at sea and ashore to improve safety and will need to be based on fast, reliable communications. On that happy note, may we at NIHQ wish you all a happy festive season and safe, prosperous voyaging in the New Year.

Mariners' Alerting and Reporting Scheme

MARS Report No. 242 December 2012

MARS 201259

Injury from detached fairlead roller

➔ Just after midnight, a bunker barge moored on the starboard side of a bulk carrier at anchor off port limits (OPL), with two lines and a spring forward and aft. After securing the lines, the barge crew began passing the fuel hose to the receiving ship, in winds gusting to 15 knots and a maximum swell of 1.5 metres. Suddenly, a fairlead roller on the barge's port quarter was uprooted from its base. It hit the accommodation bulkhead with great force, then ricocheted and hit the Bosun's mate.

The casualty was immediately taken ashore to a hospital and was diagnosed with severe contusive injuries on his right lower abdomen and inguinal region with arterial occlusion. Following emergency surgery, he was kept in hospital care for more than two weeks before being repatriated home for a further period of recovery.

Result of investigation

Due to the large difference in freeboard between the two vessels, the mooring lines from the barge's deck were all leading upwards subjecting the roller to a combination of large cyclical sideways thrust and lifting force. Ultimately, material weakness and fatigue caused by corrosion and wastage within the roller's body caused it to shear off from the base.

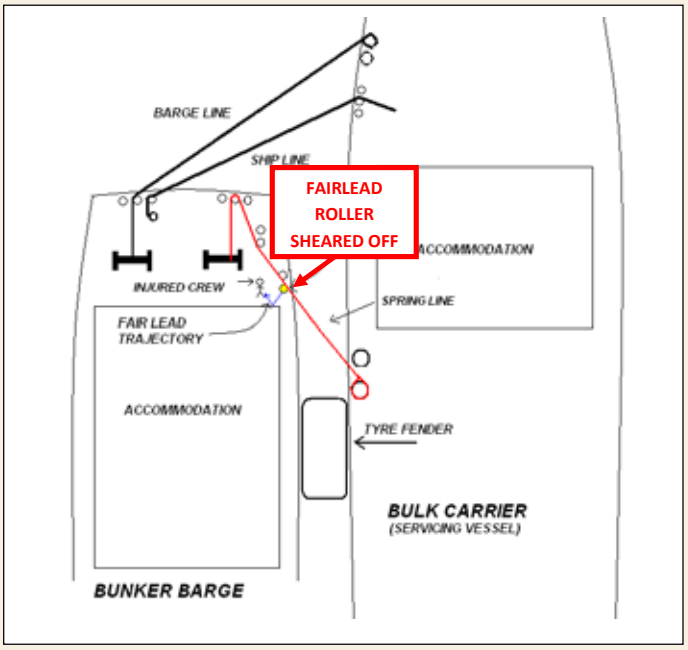


Diagram showing mooring arrangement at time of accident

View of failed fairlead roller showing the spindle and sheared base

Lessons learnt

1. A proper risk assessment must be conducted before commencing mooring operations, taking into account the effects of sea state, difference in freeboard, lead angles of lines and prevailing circumstances and conditions;
2. Mooring plan must be jointly discussed and approved by both supplying and receiving vessels;
3. If additional safety measures are not considered to mitigate risks to an acceptable level, the bunker transfer must be cancelled / postponed;
4. Mooring equipment must be properly inspected and maintained as per a documented planned maintenance system (PMS).

Editor's note: There have been many reported instances of sudden and catastrophic failure of roller fairleads on ships due to ineffective inspection and maintenance. Undetected corrosion and wastage can seriously weaken the base and mountings, especially when subject to frequent contact with / immersion in sea water, as can be expected on a low-freeboard bunker barge. Additionally, in the case of such vessels, due to the inevitable upward lead, mooring ropes / lines / hawsers can slide off the groove of open roller fairleads, so multi-angle roller fairleads or Panama chocks should be fitted instead.

MARS 201260

Temporary cabin light fitting started fire

➔ On the evening before departing from a marina, the Skipper and mate of a charter yacht (certified for a maximum of 60 passengers for day trips close to shore) accompanied some of the guests ashore for a meal. Just as they were returning to the vessel, the fire alarm activated. After ensuring that all the guests mustered at a safe location, the mate entered the crew messroom to view the fire detector panel. It indicated that there was a fire in the zone forward of the collision bulkhead, where his cabin was also located. When he entered the zone, he saw smoke coming from within his own cabin. He found an electric light fixture lying on the bunk with the incandescent bulb still burning. The patch of mattress in contact with the hot lamp was smouldering. He isolated the power supply, and removed the fitting clear of the bunk and smothered the localised fire, leaving only a slightly scorched mattress.

Result of investigation

1. The cabin was originally provided with a proper bedside reading lamp, but as the switch could not be reached from the bunk, and because there was no spare to replace the fused bulb, a previous occupant had jury-rigged a non-approved light fitting by clamping it to the defective light fixture on the bulkhead;
2. The mate had neglected to turn off the portable light before going ashore. During his absence, the clamp had loosened and the light had fallen on to the bunk, heating the mattress spot in contact with the lamp to beyond its self-ignition temperature;
3. Due to the nature and size of the vessel, the fire detector and alarm system had only limited functions and there was no fixed fire extinguishing system serving the living spaces;
4. The vessel was provided with no fireman's outfit / SCBA set, only two fire hoses, one nozzle and a hydrant key. These accessories were inappropriately stored inside the paint room;

5 No remote starting arrangement was provided for starting the fire pump.

Corrective action

The temporary light was removed and the original light fixture was restored and fitted with new electrical wiring incorporating a dimmer / switch combination secured within easy reach of the bunk.

The detached clamp-on spotlight with partly melted shield and exposed bulb

The original light fixture now made operational with new power cord and switch fitting after implementing corrective action

MARS 201261

Incorrect connections on boiler clogged the economiser

➔ When the exhaust gas boiler on one of our vessels was opened up for inspection and survey in drydock, it was noticed that the smoke space within the water tube nest was badly choked and heavily encrusted with hard residue. The cleaning operation required much time and effort.

On further investigation, it was discovered that the hard residue was leaked fuel oil that had been carried over from the auxiliary boiler's furnace. The problem was finally traced to an inadvertent mix-up in the three flexible fuel pipe connections on the burner unit along with their associated solenoid valves; i.e. high pressure, low pressure and circulating fuel lines. It was noticed that the low pressure and circulating fuel lines had been interchanged some time in the past. While there was no apparent problem in the subsequent operation of the boiler, unknown to the crew, a substantial quantity of circulating fuel oil continued to flow through the low pressure nozzle even when the flame was off. Over time, much of this unburnt fuel was carried up the uptakes, coating the internal surfaces of the economiser.

Lessons learnt

All pipes and couplings must be appropriately tagged so that they cannot be wrongly connected.

MARS 201262

Hand injury from pneumatic needle gun

➔ Whilst carrying out chipping / descaling / derusting operations on deck with a pneumatic hammer, a crewmember was trying to direct the tool into a crevice of a deck structure while it was running. Due to inattention, he inadvertently placed his finger in way of the needles. He reported the incident only after the finger had become painful and swollen.

Result of investigation

1 Proper PPE was in use;
2 A momentary lapse in concentration resulted in the finger coming into a hazardous zone;
3 Difficult access to a restricted space requiring the operator to manually guide the needle gun.

Lessons learnt

1 It is important not to lose concentration when operating power tools and to keep body parts away from exposed moving components;
2 The operator must never grip the needle guide of a running pneumatic needle or chisel hammer gun;
3 Incidents must be reported as soon as they occur.

Typical compressed air-operated needle hammer gun with pistol grip showing safe and hazardous hand grip areas

MARS 201263

Dangers of pressure testing tanks/ vessels/compartments

➔ Minor repairs had just been completed on the shell plate of the fresh water generator (evaporator) by a shore workshop while in port. As an original spare was not available, the damaged sight glass was substituted with a disc cut from a 5 mm thick acrylic sheet.

Upon restarting the plant after sailing, it was observed that the drum chamber was not developing sufficient vacuum. The ship's engineers decided to carry out a pressure test of the casing to locate any leaks. Without considering the hazards, the crew introduced compressed air into the vessel and raised the internal pressure to about 3 bar. Suddenly, the acrylic sight glass shattered, injuring the electrical officer, who was applying soap solution to the shell's exterior.

Lessons learnt

1 It is very unsafe to subject vessels, tanks or containers to uncontrolled pneumatic pressure for testing purposes as there is great risk of permanent deformation or violent rupture;
2 A controlled hydrostatic test i.e. filling up the container with water to a permissible head (preferably under Class supervision) is the most appropriate and safe method for leak testing on board;
3 When a pneumatic test is considered the only practicable method, compressed air must be admitted through a suitable reducing arrangement and pressure must be closely monitored by a manometer/water column gauge, ensuring safe limits are never exceeded;
4 Fresh water generators should ideally be tested by creating an internal vacuum and applying a liquid dye externally on suspected areas.

MARS 201264

Fire on electrical transformer

➔ The C/E, fitter and oiler were engaged in the routine maintenance of the common cooling water system of the ship's refrigeration plant and air conditioning plants. While they were opening up the condenser cooling water line, due to a leaking line valve, a large quantity of water spurted out and fell on the main power transformer located directly below. A fire started around the transformer and there was an immediate blackout. The crew put out the fire by using a portable CO_2 extinguisher.

Root cause/contributory factors

1. System failure: company procedures did not contain specific instructions on carrying out work on refrigeration and heating, ventilation and air-conditioning (HVAC) systems;
2. Defective equipment: section valve in the cooling water line was leaking in shut position;
3. Inadequate risk assessment: cooling water line should have been blanked and drained before disconnecting;
4. Inadequate work planning; electrical equipment directly below work site was not protected against likely discharge of water.

Corrective/preventative actions (post-incident)

1. Defective valve in cooling water line was replaced;
2. QHSE safety bulletin on the incident issued to the fleet;
3. New SMS procedure and risk assessment checklist created with guidelines on cleaning and maintenance of cooling water systems.

MARS 201265

Fatal accident during mooring operation

Official report: (Edited from Statens haverikommission (SHK) Swedish Accident Investigation Authority – Report S-95/11)

➔ A general cargo ship arrived with an import cargo that was stacked high on the hatch covers, exposing a large lateral wind area. A strong offshore wind was blowing during the final approach to the berth (starboard side to) with a pilot on board, but it had been already decided that the docking could be safely completed without tug assistance.

The forward mooring team on the forecastle consisted of the C/O, Bosun and an able seaman (AB). The vessel was fitted with a large wavebreaker right forward, which meant that the forecastle deck had very little clear area. Standing on a small bulwark platform on the starboard side, the C/O was leading the team and also operating the mooring winches remote control levers located close by. The bridge team had no view of the forward mooring station due to the tall wavebreaker and high deck cargo.

The ship approached the berth at an angle of about 30 degrees and, with her bow close to the jetty, the forward spring line was sent ashore and belayed on a bollard. In order to bring the stern closer to the quay the pilot requested slow ahead on the engine and full port rudder. In addition, the bow thruster was activated to port so as to align the ship parallel with the wharf.

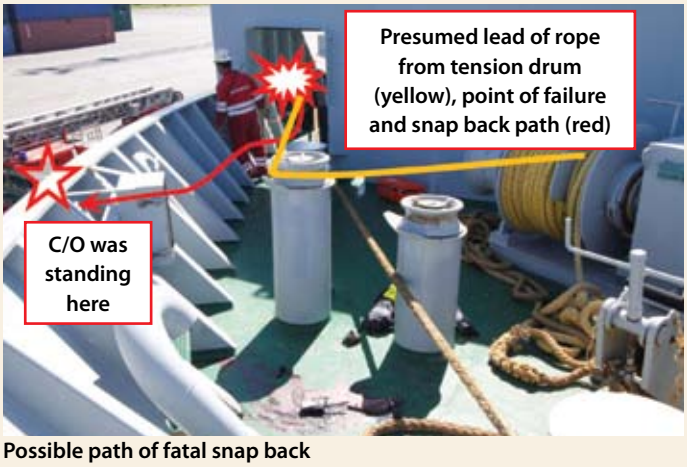
Before undertaking this manoeuvre, the Master warned the foredeck team on the portable VHF radio that the engine would be working ahead and that all personnel should stand clear of the taut backspring. This was acknowledged by the C/O, but for unknown reasons, he remained at his position. The engine and rudder movement was performed but had to be repeated within minutes as the stern did not move sufficiently towards the quay. Again, before the engine movement, the Master called out a warning to the foredeck team and got confirmation from the C/O but he remained at his location near the winch remote control unit. This time, the engine order lasted longer, and probably due to the bow moving ahead and away from the shore, the backspring came under very high tension and suddenly parted. The broken rope end snapped back violently and hit the C/O on the head and neck, who was felled and lay motionless. Unfortunately, despite all efforts by crew and paramedics, the ambulance doctor declared the C/O dead soon after.

Investigation of the accident

1. The spring line had only been in use for a month and appeared to be in good condition;
2. The method used to berth a high-sided vessel without tug assistance in the prevailing conditions by working engine, rudder and bow thruster against a single backspring constituted a high risk manoeuvre;

View of ship's fore end showing location of C/O during mooring operation

C/O was standing in snap back zone when rope parted



Possible path of fatal snap back

Visit www.nautinst.org/MARS for online database

3 The C/O failed to move away from snap back zone even after being warned by Master;

4 Poor design - Confined/restricted area on the forecastle deck and improper location of winch remote control unit;

5 The company had no specific guidelines for mooring and the company management had not identified mooring to be a hazardous operation.

Editor's Note: Although the report does not specify the actual point of failure of the hawser, it is likely that the newly inducted line parted at a stress point or nip that would have developed at the multi-angle fairlead when the vessel was moved with a prolonged ahead engine kick. This incident clearly illustrates how the sudden linear contraction of a synthetic fibre rope parting under excessive tension can cause injury/damage at a considerable distance from the point of failure.

MARS 201266

Neglected sounding pipes

➔ The three photographs below show evidence of the lack of regular tank/ bilge monitoring on board. Sounding pipes with missing/ ineffective caps can potentially lead to progressive flooding and cargo damage. Such vessels are clearly unseaworthy and must be detained by authorities for violation of the loadline and SOLAS conventions until effective closing arrangements have been fitted. It is good practice to include sounding pipes in the ship's planned maintenance system, ensuring that every sounding pipe is regularly inspected along the entire length to the extent possible and the section exposed to the weather is kept free of corrosion and wastage, and threads of the pipes and caps are regularly dressed and greased.

MARS: You can make a difference.

You can save a life, prevent injury and contribute to a more effective shipping community.

Everyone makes mistakes or has – or sees – near misses. By contributing reports to MARS, you can help others learn from your experiences. Reports concerning navigation, cargo, engineering, ISM management, mooring, leadership, design, training or any other aspect of operations are welcome, as are alerts and reports even when there has been no incident. The freely accessible database (http://www.nautinst.org/mars/) is fully searchable and can be used by the entire shipping community as a very effective risk assessment, loss prevention and work planning tool and also as a training aid.

Reports will be carefully edited to preserve confidentiality or will remain unpublished if this is not possible.

See p16 for cooperation between MARS and CHIRP

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