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Seaways

The International Journal of The Nautical Institute

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Philip Wake MSc, FNI Chief Executive

Focus

Learning from reality

> The shoreside management of shipping operations have as much to learn from near misses, accident reports and other experiential sources as their sea staff.

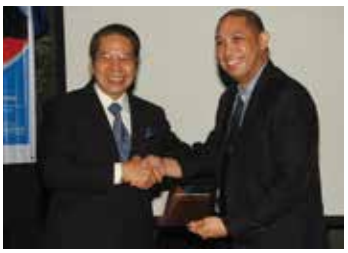
As anyone who has been a member for some time will know and have experienced, the Institute takes a practical and professional stance on the issues facing the industry. At the same time we do not lose sight of the value that academic research can bring to defining these issues and hopefully seeking solutions. Our publications are written by practitioners for practitioners, making the authors' wealth of knowledge and experience available for others to learn from. This is one form of experiential learning which we provide to the membership and industry in general. Similarly, the MARS reports are a valuable form of learning from others, in this case from their misfortunes, as are the official reports into casualties. However, in the Captain's Column this month (see p 4), Captain Mark Bull questions whether these valuable sources of lessons are reaching those that need them. Primarily these will be seafarers, but we would make the case that shoreside management of shipping operations have as much to learn from them as their sea staff. Captain Bull laments the dearth of hardcopy publications now reaching ships, although the Institute is making substantial progress on that front with the distribution of *The Navigator*. Instead, he suggests ways need to be found to get the information onto seafarers' personal hard drives and/or YouTube – although the continuing reluctance of many companies to give access to the internet to their seafarers mitigates against the latter.

On the same theme of learning from failure, Dr Nippin Anand poses a number of searching questions about accident investigations, whether carried out by the company or official authorities (see pp 24-25). He makes a strong case for the investigation to seek the underlying causes of an accident rather than taking the easy route of blaming human error – and the unfortunate seafarer at the end of the error chain. It should be recognised that almost all accidents are a complex combination of factors and that pre-conceptions are to be avoided by the investigators. Instead they should try to look through the eyes of those involved in the accident and develop a sense of 'local rationality'. Hopefully, this will help them to accurately interpret what they see and hear on the VDR.

Simulation versus reality

Two of the Branch reports this month offer the opportunity for members and other maritime professionals to consider the value of simulation training (see pp23-24). For those working ashore, visits to simulators are also an excellent opportunity for an update on the levels of automation in a modern ship's bridge or engine room. Debating to what extent training in simulators could or should replace real life training on board ship is both valuable and essential. There can be no doubt that the required sea time set by STCW is already at the low end of the scale, and we constantly hear that there is a lack of practical experience in each rank because of this. The reality may be that we cannot win the argument for an increase in real sea time so best use must be made of simulators to fast track 'experience' into seafarers, particularly in handling emergency situations. Through the Command Seminars last year, we also heard how greater use should be made of simulators for the assessment of competence and for on-going or refresher training. The consensus throughout these seminars was that simulators need to present as real a situation as possible, with as much of the equipment being the same or at least very similar to that which will be experienced on board. The report of the Command Seminar in Manila is included this month (see pp 5-7) and the overall conclusions and recommendations of the five seminars will be published next month.

It is the case that more and more of the ship's equipment is being automated, and the debate has already begun about fully autonomous ships without crews (the London Branch will hold a conference on this subject later this year). For the time being, the equally important matter of how navigators interact with the automated systems already on board needs to be addressed. Captain George Livingstone asks 'Is automation all it seems?' (p22) and we can expect this topic to feature in the AGM Event Seminar in San Francisco on May 11th/12th this year (see p 5 and brochure enclosed). The balance between the correct use of technology and maintaining core seamanship skills is a delicate one that we are constantly seeking to maintain.



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Mariners' Alerting and Reporting Scheme

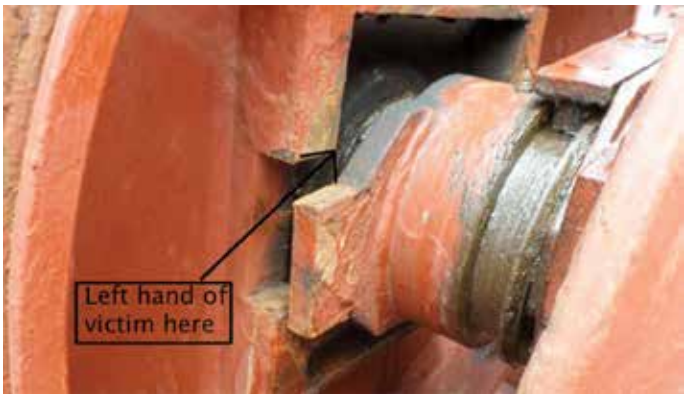
MARS Report No. 269 March 2015

MARS 201513

Serious injury while greasing

➔ The deck team undertook the greasing of the aft mooring winches. Using a grease gun, an O/S began greasing a winch. The O/S was holding the hose of the grease gun with his right hand while resting his left hand on the groove where the winch gear is engaged.

The Bosun, unaware that the OS was resting his left hand on the groove of the winch engagement, ordered another seaman to turn the winch slowly to maximise the greasing effect. Suddenly, the OS using the grease gun shouted 'Stop, stop, stop'. The winch was stopped immediately, but not before the gear had seriously wounded his hand. The victim was treated for deep lacerations in the hospital and repatriated, being declared unfit for work for 14 days.



Lessons learned

1 While there was certainly inadequate supervision during this job, miscommunication and a lack of situational awareness among team members also played a large role in the outcome.
2 Although the team had experience with this relatively mundane task, they failed to appreciate the hazards present in such an activity.

■ **Editor's note:** Mundane, everyday jobs can, in some ways, be considered more hazardous than unusual or special tasks. With the latter, we usually take the time to analyse risks, communicate efficiently as a team, and retain high situational awareness. Everyday jobs can find us slipping into complacent behaviour, and when we become complacent, bad things happen.

MARS 201514

Risky behaviour

As edited from the Confidential Hazardous Incident Reporting Programme (CHIRP)

➔ A manager has sent several reports of incidents regarding pilotage in different parts of the world.

In the first, the Master was concerned that the pilot was making excessive use of his mobile phone while piloting the vessel. This was compounded by the pilot's refusal to take advice on his behaviour from the Master.

In a second report, the Master of another vessel was concerned that the pilot was apparently under such time pressure that he did not initially wish to spend time discussing the proposed plan for departure from the port. The pilot was initially reluctant to order the tug to make fast to the ship – 'There's no time for that!' The vessel then passed too close to another moored ship. Finally, the pilot disembarked before the vessel was clear of the port entrance.

In both cases the Masters, with the full support of the manager, had reported the incidents to the appropriate local authorities. On subsequent visits to the ports, significant improvements have been noted.

Lessons learned

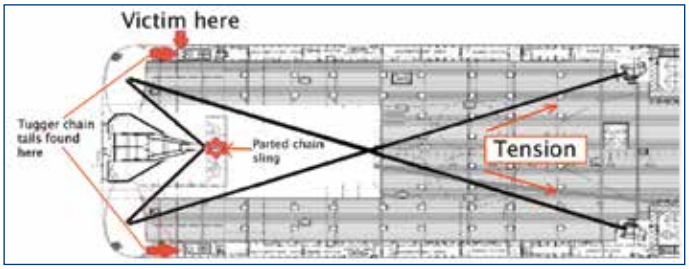
- Mobile phones and proper conning/vessel navigation do not mix well.
- A review and discussion of the proposed passage plan is essential. 'Poor planning produces poor performance.'
- There should always be 'time' for safety.

MARS 201515

Safe haven not safe

Edited from the Marine Safety Forum – Safety Flash 14-34

➔ An anchor handling tug (AHTS) vessel was deploying a 15 ton anchor during a pre-lay operation. Deck personnel were using tugger wires with an endless chain sling connected through the anchor D-shackle to move the anchor along the deck and over the stern roller. During the operation, the rigging assembly (endless chain) parted and both tugger wires recoiled around the cargo barrier. Even though the deck crew were positioned in so-called safe havens, a crew member was struck on the head by a tugger wire and suffered a fractured skull and jaw as well as lacerations to the neck. The victim was provided with medical treatment on board the vessel and transferred to hospital for surgery.



Lessons learned

- Snapback zones were not adequately identified during the job planning.
- The safe haven for deck crew was not adequately assessed.
- Procedures did not incorporate calculation of expected loads, sizing/selection and use of rigging and its limitations.
- Small wire and loose rigging equipment failure has become 'accepted practice' on many AHTS vessels.
- Chain slings are not to be used in configurations such as in this accident due to reductions in Minimum Breaking Load (MBL) as a result of a non-linear pull and rigging around sharp edges. In these circumstances it is possible to have a reduction in MBL of up to 50%.
- When wires and equipment are under tension, no personnel should be located aft of a line extending between the most forward tugger winches on both sides of the cargo rail. The only exception being to take control of anchor handling safety systems such as check of shark jaws.
- The use of a higher grade of chain (120 for example), designed specifically for extreme conditions, should be investigated to improve the factor of safety during such operations.

MARS 201516

No rest for the weary

➔ A Master has sent MARS the following real-life example of the difficulties of getting enough sleep on certain vessels, in this case a livestock carrier:

0400: Controls tested and Master informed.
0500: Crew called for stations for picking up anchor and berthing.
0600: Pilot on board.
0730: Vessel alongside and all made fast.
0800: Authorities including PSC and quarantine board vessel.
1000: Quarantine inspection of the vessel and cargo spaces completed.
1030: Port state authority preload inspection commences as is required prior to loading livestock.
1900: Vessel inspection completed. A few deficiencies were identified during the inspection which required class attendance.
2000: Class surveyor attends vessel.
2200: All deficiencies closed and vessel cleared for loading.

In the meantime, crew are also busy attending other activities such as fodder loading, receiving stores, spares and provisions. While the inspection is in progress, the entire deck crew, Master, chief officer, cadets and duty officer along with engine room personnel are attending the inspection. After the vessel is cleared for loading, the chief officer and his team are busy preparing the vessel to receive the livestock. The Master is busy with emails, communicating to all parties the results of the inspection and forwarding all relevant documents.

Readers will understand the problems in complying with STCW and MLC regulations on work and rest hours.

Lessons learned and recommendations

- Commercial managers, including exporters should be informed/educated about shipboard work/rest requirements.
- If we are to comply with hours of work/rest, there has to be a shore-driven effort to ensure this can be done.
- Suggest allowing a 'cooling off' period for at least four hours after completion of cargo work prior to commencement, allowing ship's crew to take some rest, meals etc.

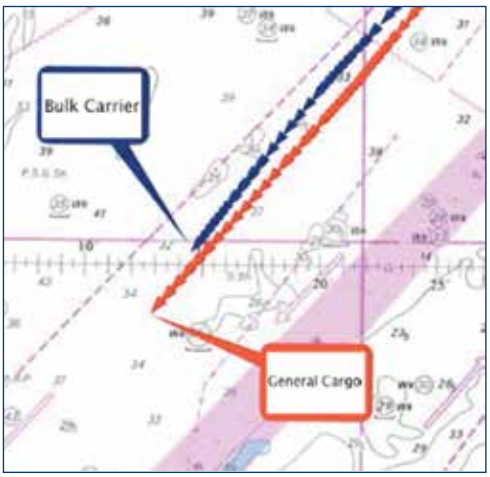
■ **Editor's note:** STCW gives a regulatory framework for work/rest, which admittedly is hard to adhere to under certain commercial conditions; yet within this Convention is what can be considered a fatal flaw. It specifies that the hours of rest 'may be divided into no more than two periods, one of which will be at least six hours in length.' Since the minimum standard is set by this Convention, natural commercial pressures push operators to that level – hence the often maligned 6 On/6 Off system. Scientific studies have shown that restorative sleep is only acquired after seven to eight hours of rest.

MARS 201517

Coast assisted collision

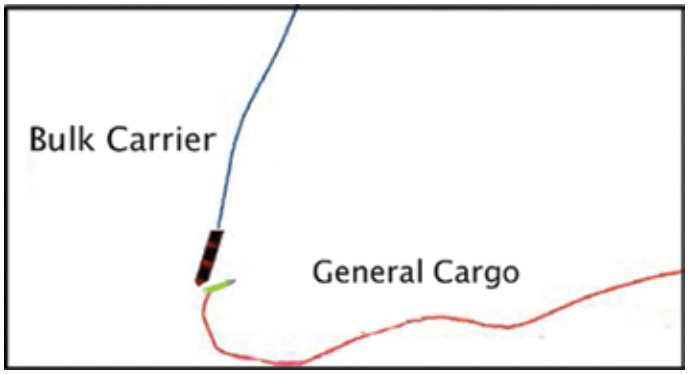
Edited from MAIB official report 25/2014

➔ A general cargo vessel was making way in a busy traffic separation scheme (TSS). A bulk carrier was abaft the vessel's starboard beam at a distance of 1.7nm and slowly overtaking.



The OOW of the general cargo saw another vessel forward, 20° off his starboard bow at 3.9nm and with a CPA of 0.1nm. He did not acquire the vessel on the ARPA or use the AIS data to determine the vessel's name or status. However, he assessed that the vessel was crossing their bow from starboard to port so he judged his vessel was the give way vessel.

As it turned out, this was a fishing vessel engaged in fishing, not a crossing vessel. The fishing vessel began to manoeuvre to port to stay away from the commercial traffic but the OOW on the general cargo vessel did not immediately notice this. When he did notice the change of course, he was confused as this did not match his mental picture of a vessel crossing the traffic lane. His response was to continue to alter to starboard, putting the fishing vessel about 30° off his port bow. By now he was becoming unsure of what to do – and in the following two minutes he made several alterations of course to both port and starboard. He was still unaware that this vessel was a fishing vessel that was manoeuvring out of his way.



The coast guard TSS services, seeing the movements on radar, became aware that an ambiguous situation was developing and called the OOW of the general cargo vessel. A short conversation ensued and the TSS services inquired if the general cargo vessel was executing a 360° turn. Although this was not the OOW's plan, he replied in the affirmative to TSS services; immediately after this conversation, the OOW selected hand steering and applied 35° starboard helm. Since the vessel was equipped with a high lift rudder the rate of turn increased rapidly. He did not realise that the bulk carrier was now about 500m off his starboard beam.

Meanwhile, the bulk carrier's OOW had also been contacted by the TSS services and after a short conversation this OOW ordered hard port helm. Although he had been monitoring and was now aware that the general cargo was to do a 360° turn, he did not think this manoeuvre was already underway. He assumed that the general cargo would pass ahead before starting the 360° turn. But within seconds he noticed that the cargo vessel was turning quickly towards him so he immediately ordered hard starboard helm. Nonetheless, soon afterwards the two vessels collided.

Lessons learned

- Although the fishing vessel had started to alter course in order to clear the traffic lane and avoid impeding the safe passage of the two larger vessels, this alteration was not seen by the general cargo vessel's OOW for over five minutes. This implies that the general cargo vessel's OOW was neither keeping a proper visual lookout, nor effectively using the electronic aids available.
- The intervention on VHF radio by the coast watch officer was timely, appropriate and well-intended. However, because of the language used, it unintentionally influenced the decision-making of the general cargo vessel's OOW and prompted him to improvise a 360° turn, unwittingly turning towards the bulk carrier.
- The general cargo vessel's OOW suffered a complete loss of situational awareness. He was unaware of the proximity of the bulk carrier until the vessels collided.
- The general cargo vessel's OOW was very inexperienced, as shown by his inability to make sense of the fishing vessel's actions and his total loss (or lack) of situational awareness. He had not yet developed sufficient competency to keep a bridge watch in a busy TSS at night by himself.
- As it turned out, the general cargo vessel's OOW had been in charge of only 10 bridge watches before the accident and the Master had only known him for about two weeks. It is not known why the Master was sufficiently confident of the OOW's abilities to entrust him with the bridge watch in such a congested area at night.
- The general cargo vessel's OOW was the sole lookout notwithstanding darkness. An additional lookout was rarely, if ever, employed on board the vessel.

■ **Editor's note:** The MARS archive contains many incidents and accidents where the OOW is the sole lookout in darkness. Yet it is an implicit requirement within STCW to keep a separate dedicated lookout on the bridge, in addition to the watchkeeper, during the hours of darkness and in busy shipping areas while underway. The Editor is curious to know how any company that is ISM certified (or simply values safety and quality) can escape this requirement given the plethora of port state inspections, internal and external ISM audits – not to mention common sense, risk management and best practices.

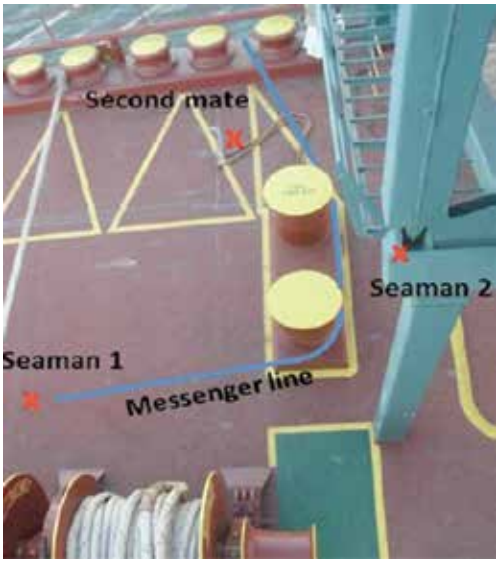
MARS 201518

Caught in a bight

Edited from official Australian Transportation Safety Bureau (ATSB) 2014-005

➔ A vessel that had been assisted by a tug was preparing to let go the tow. In preparation for letting go, seaman 1 ran the messenger line over the drum end of the mooring winch, while seaman 2 operated the winch to pull about two metres of tow line inboard. The second mate wrapped the rope stopper around the main tow line while the messenger line was taken off the drum end and the eye of the tow line taken off the mooring bitts. The messenger line was then put around the forward post of the mooring bits to assist with the controlled lowering of the tow line.

On board the tug, a crewmember was standing on deck near the winch ready to guide the tow line onto the winch drum. Another crewmember was at the remote winch controls inside at the port bridge console. The crewmember controlling the winch waited until he saw the tow line being lowered before he started heaving in. As the tow line was retrieved, seaman 2's right leg somehow became entangled in the messenger line. He was then dragged about four metres across the deck and into the rollers of the fairlead. When his legs entered the fairlead the messenger line came under tension and it severed the seaman's right foot.



Both crew on the tug had seen the messenger line go tight and the crewmember at the winch control stopped heaving. The assisted vessel's second mate ran to the ship's rail and signalled to slacken the line. Medical assistance from ashore was quickly requested and the victim was transported to hospital for treatment.

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Findings from the official report

- From his position at the port bridge console, the crewmember controlling the winch could see the tow line, the winch and the signalling crewmember on the tug's deck. However, due to the freeboard of the assisted ship, no one on board the tug could see past the ship's main deck hand rails. As is usual, the tug's crew had no direct radio communications with the ship's aft mooring team, and were therefore reliant on visual contact with the mooring team for all communications.
- By assisting the two seamen with releasing the tug's line from the bitts, the officer was not at the ship's side where he would have had a clear line of sight of the tug; he had thus relinquished his supervisory role. When the seaman became entangled in the messenger line, there was no one on the assisted vessel in a position to quickly signal the tug's crew to stop heaving or slacken the line.

Lessons learned

Mooring operations are often seen as a routine task but contain dangers that are often not realised until it is too late. As the forces that can be exerted on mooring and towing line cannot be directly observed, they are often underestimated by those working around them.

Serious injury is likely when there is an incident during tug and mooring operations, but the likelihood of such an occurrence can be managed through effective risk assessment, training, supervision, communications and good housekeeping – both prior to and during berthing operations.

View of assisted ship from tug bridge console