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Seaways

The International Journal of The Nautical Institute

Command seminars

Setting the agenda for the industry p6

The Nautical Institute

Philip Wake MSc, FNI Chief Executive

Focus

Valuable contributions

> Your input to The Nautical Institute's work is important and we are looking forward to receiving your guidance for the future of the Institute through the President's Questionnaire

This month the Institute's new edition of *The Admiralty Manual of Seamanship* will be launched aboard the historic *HMS Warrior* in Portsmouth, in conjunction with the authoring team from the Royal Navy. Then at the AGM Event on May 11-12 in San Francisco the new edition of *The Nautical Institute on Command* will be launched. Both these books are important contributions to the Institute's work to improve standards of seamanship, navigation and command throughout the world fleet of merchant and naval vessels. These professional standards have been consistently identified in recent years as in need of focused action and they are an important part of the Institute's current Strategic Plan. The book on Command is designed to help prepare aspiring Masters and is equally valuable for those already in command as there is always more to learn about the role and its responsibilities. We are indebted to the multiple authors of this book as well as the technical editor, Captain Trevor Bailey FNI, and Bridget Hogan's expert publishing team for their work to bring out this fully revised edition. One extract is reproduced here, in which Captain Nick Cooper FNI considers safe working practices (see pp 10-11) and provides sound advice on the step change from Chief Officer to Master or indeed from 1st Lieutenant to Captain.

Making time to learn

These books should be on every ship – and as Captain Bidyut Kr. Banerjee AFNI points out in his Captain's Column (see pp 4-5) it is equally important that people are given time to read them. Too often officers are overloaded with copious volumes for the Safety Management System and a multitude of check lists, with the predictable result that the former are not properly read and implemented, while the latter become a mere tick box exercise with no real meaning. He asserts on the basis of experience in a well run, long established company that it does not have to be like this and a concise SMS Manual is far more effective. He identifies changes of personnel in the office ashore as a cause of changes to the SMS and an increase of administration for the ship's staff which means there is even less chance of providing much needed mentoring to junior officers to increase their professional knowledge and capability. It is to be hoped that this article is read by the superintendents/managers and generates a review with the sea staff on whether the company's system are really supportive of best practice at sea and ashore.

Command seminars

Over the past six months or so we have been reporting on the Command Seminar series on the theme of navigational competence, which comprised well supported seminars in Sydney, London, Cyprus, Glasgow and Manila. Generation Y seafarers were a particularly important component at each seminar and made valuable contributions to the presentations and discussions. We are pleased to provide a summary of the series this month with the collated conclusions and a set of recommendations aimed at those organisations in the industry that can make a difference as well as at individuals (see pp 6-8). The Institute will be using these conclusions in our work and will follow up on the recommendations to try to ensure implementation. As part of this process, the AGM Seminar picks up on one of the conclusions of the series and will try to help close the gap between fast evolving technology and training.

A particular case in point is the implementation of ECDIS carriage and its subsequent use, whether as the primary means of navigation or in conjunction with paper charts. Captain Brian McKenna AFNI, speaking at the Ireland Branch seminar on ECDIS, identifies the different upbringing and mindset of Generation Y as a point that needs to be taken into account, in that there are both advantages and disadvantages to being tech-savvy (see pp 12-13). He concludes that there are a number of challenges to face and resolve for the effective and safe implementation of ECDIS. Proper training for all is crucial, but other aspects must be taken into account as well.

Returning to the theme of valuable contributions, the IMO report (see pp 21) and our input to the Polar Code debates at the IMO (see pp 22-23) are testimony to the efforts of staff and volunteer members in putting the practical, maritime professional's views into the regulatory process. Your input to this process is important and we are looking forward to receiving your guidance for the future work of the Institute through the President's Questionnaire, which will go live online on 1 May. The first phase will be conducted as a short electronic survey so please spare the time to complete it and submit your views.

p21

p25

p30

p36

Mariners' Alerting and Reporting Scheme

MARS Report No. 270 April 2015

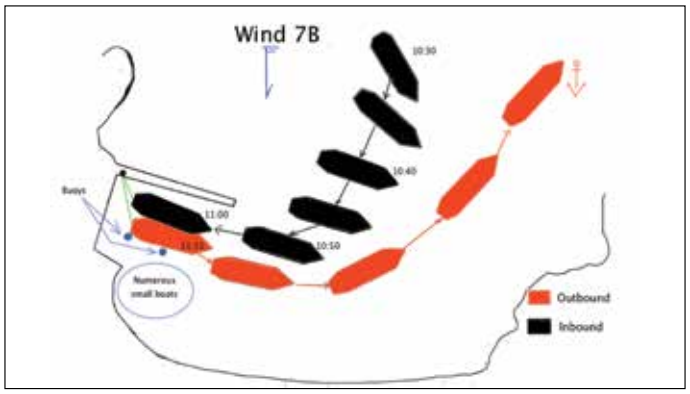
MARS 201519

Aborted berthing

➔ A small general cargo vessel in ballast was to enter a port to load logs with drafts fore and aft at 3.5m and 4m respectively, with winds from the north at Beaufort force 7. At 10:30, after the pilot boarded there was a short conversation on the berthing manoeuvre and the vessel headed inbound. The pilot requested the stern line should be secured first to hold the stern. About six minutes later, the Master asked the pilot to repeat the details of the berthing manoeuvre. He also asked if a tug was necessary. The pilot repeated how he intended to back in and pivot and also replied that a tug would take six hours to arrive.

At 10:40 the bow thruster was put to full port and three minutes later the main engine to full astern. The vessel soon started to go astern. As the vessel approached the berth the pilot shouted to send the heaving line. The line was sent and a mooring line set on the berth but the mooring winch could not hold the stern, which was drifting south away from the berth. At 10:54 the pilot ordered to let go and full ahead in an abort manoeuvre. Hard to port helm was also ordered and applied but a grinding noise was heard at about this time.

The vessel was manoeuvred out of the port without further incident and anchored. Divers attended later and found a large bundle of rope fender in the propellor, which itself was slightly damaged.



As it turned out, the Master had only recently been promoted to Captain.

Some of the actions taken and lessons learned by the company:

- Proper training for the ships Masters/crew was scheduled with reference to proper passage planning, bridge resource management and seamanship.
- The procedures of promotion of seafarers, evaluation of seafarers and office visits by seafarers to be reviewed. Feedback/findings (verbal or in writing) from office departments have to be incorporated in these procedures.

■ **Editor's Comment:** By any measure this berthing was attempted on a wing and a prayer. With a strong wind pushing south, away from the berth, no tug assistance, and a flotilla of small boats and buoys just south of the berth, the bridge team appears to have given little forethought to the manoeuvre. Given the conditions, the consequences could have been much worst. An inexperienced Master and an apparently impatient pilot met at the wrong time in the wrong place.

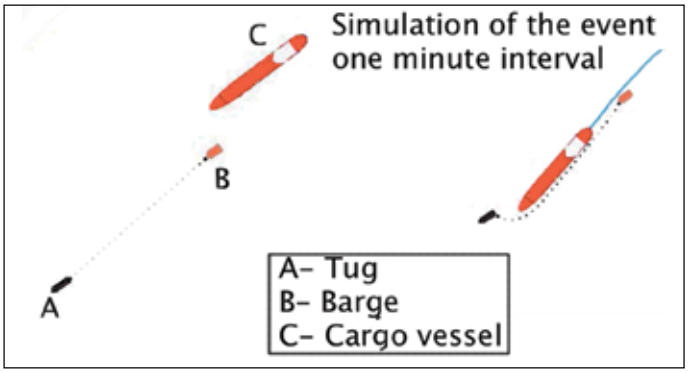
MARS 201520

Towing vessel becomes the towed

As edited from official MAIB report no 29/2014

➔ A multi-purpose cargo ship was making way in a busy TSS at about 15 knots at night and with a sole OOW on the bridge. The vessel was gaining on a tug towing an un-manned crane barge about 6 nm ahead. The tug and tow were proceeding at 6 knots and keeping to the northern edge of the traffic lane to enable other vessels to pass down its port side. The length of the towline was 250m.

When the cargo ship was almost at the level of the tow, the OOW adjusted the autopilot to port in order to overtake the tug on its port side. Seconds later, the vessel collided with un-manned crane barge; then continued to pass between the crane barge and the tug, catching on the towline on the way through. The OOW on the cargo ship quickly reduced the ahead pitch on the CPP but his vessel continued to overtake the tug. On the tug, the lead of the towline moved from astern to ahead, which pulled the tug through 180° and now saw the tug being towed stern-first by the cargo ship.



The tug's OOW immediately took the main engine out of gear and shouted down to the accommodation to warn the rest of the tug's crew of the situation. Seconds later, the bitter end of the towline broke free from the towing drum; the tug stopped in the water with the un-manned barge off its starboard side. The barge's wheelhouse had been set forward in the collision and crushed. The jib of its crane was buckled, guardrails bent, the tow's hydraulic winch motor seriously damaged and several hydraulic connections ruptured. The cargo vessel suffered a gash in the forecastle.

Some of the analysis and findings of the official report, as edited, are:

- For nearly 55 minutes before the collision, the radar targets associated with the tug and barge were clearly visible on the X-band radar of the cargo vessel. Additionally, the aft lights on the tow would have been visible from the cargo vessel for at least 20 minutes before the collision. The OOW had ample time to detect, assess and take avoiding action.
- The OOW had not been keeping a proper lookout and had only seen the tug just before he altered to port; he failed to see the un-manned barge at all.
- It is almost certain, as deducted from the sequence of events, that the cargo vessel's OOW was relying solely on AIS information as shown on the ECDIS; but the tug and barge were not transmitting AIS information.

- The radar targets directly ahead and closing should have prompted the OOW to look out of the window and attempt to correlate the targets with visual information. As he took neither of these actions, and the targets were on the radar for almost one hour, it is likely that the OOW was not monitoring this instrument at all.
- The level of arousal of the cargo vessel's OOW was low. Consequently, he was not proactive in maintaining his situational awareness or reactive to changing circumstances. This is supported by his failure to use radar or ARPA and to keep an effective visual lookout.
- It is impossible to determine whether a lookout's presence on the bridge would have assisted the OOW in making a more accurate assessment before altering towards the barge. However, it would have increased the probability of the tow as well as the tug being seen. A lookout's presence would also have probably helped keep the OOW alert.

Lessons learned

For collision avoidance, a balance needs to be struck between over-reliance and effective use of AIS. In this case, the OOW's apparent exclusive use of AIS information displayed on ECDIS indicates that he was not aware that many vessels, such as small fishing vessels, leisure craft, warships and vessels under 300gt, might not be displayed.

MARS 201521

Faulty interlock + faulty training = uncontrolled descent

As edited from official ATSB report No. 275 MO-2010-004

➔ The crew of an LNG tanker were in process of lowering the fast rescue boat (FRB). The FRB was nearly 6.5m in length, weighed 2,200 kg and could be launched from a remote control unit (as below) or from inside the boat, using a winch brake release wire.

As one crew was about to release the brake to lower the FRB, another crew reached across and pressed the 'wave compensator' button on the remote control unit. His understanding was it must be activated before the boat reached the water. As soon as this button was pressed the FRB descended at high speed hitting the water about 18 metres below. Several of the FRB crew were seriously injured and had to be evacuated.

The wave compensation feature was designed to ensure there was continuous tension on the fall wire when the FRB was riding the sea swell. When active, the lifting capacity of the davit was reduced by approximately 90% to around 300 kg; the davit winch would continuously tension the fall wire but would have insufficient power to lift the FRB.

The manufacturer's instruction stated that the wave compensation feature should only be activated when the FRB was waterborne. As an additional safety measure, to prevent the wave compensation unit from activating if the wave compensator button was pressed before the FRB was waterborne, the system was fitted with a safety interlock. In this case, the safety interlock did not function correctly.

Lessons learned

- The FRB davit wave compensator safety interlock did not operate as designed to prevent the fast rescue boat from free falling to the water. It was found that the safety interlocks on the wave compensator systems on board this vessel and two sister ships had been electrically by-passed thereby preventing them from functioning. As a result, the wave compensators on board all three ships could be engaged regardless of whether the FRB were waterborne or suspended from the fall wire.
- The maintenance and testing of the FRB davit by approved service agents had not identified that the wave compensator safety interlock was not correctly functioning on board the vessel.
- The training provided to the crew did not ensure they were sufficiently familiar with the function or operation of the wave compensator or its safety interlock.
- The FRB manual, as supplied by the manufacturer, did not provide sufficient guidance for the crew in the operation of the wave compensator and its safety interlock.
- The job hazard analysis for the operation of the FRB was incomplete and did not include an assessment of the hazards associated with the operation of the wave compensator.

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MARS 201522

Short training proves insufficient

As edited from official TSB report M13L0067

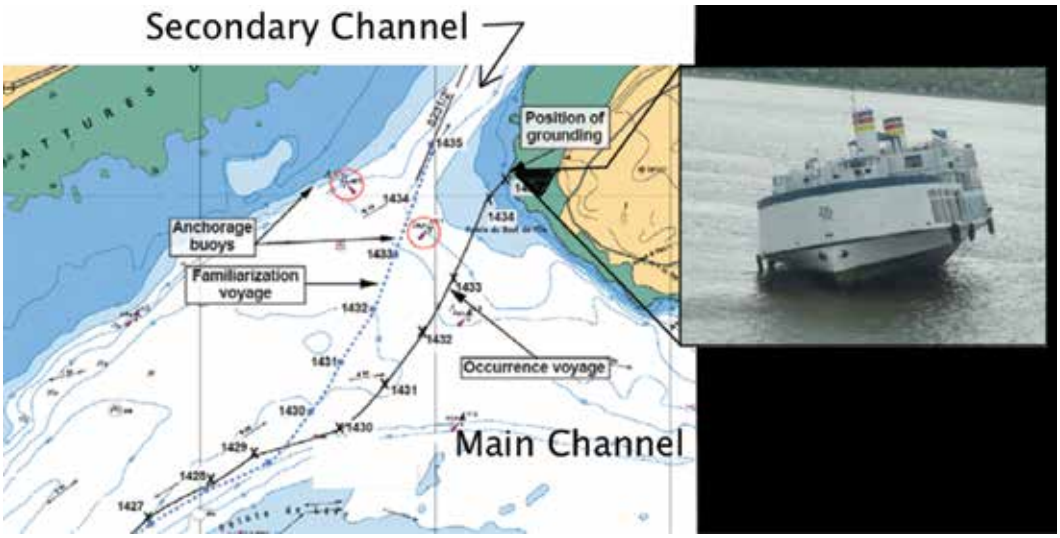
➔ A new mate joined a small inland passenger vessel for his first day of work. That same day, with the new mate (OOW) at the wheel and the Master guiding him, the vessel was navigated on a typical day cruise that lasted one and a half hours. Later that same day, the vessel embarked on an evening cruise, following a different route than the afternoon cruise. Under the master's guidance, the OOW was at the helm again for most of the two hour cruise, all the while learning the various courses and alterations.

The next day in the ebbing tide the vessel left for a harbour cruise following the same route as that of the previous afternoon; the OOW was at the helm and the Master remained on the bridge but was doing paperwork and making phone calls. As the OOW continued to steer the vessel, the Master turned periodically and looked out the window. At one point, the OOW asked the Master if the alteration to port could be initiated. The Master looked out, then agreed; the OOW then altered to port.

Over the next four to five minutes, as the vessel crossed the channel in a northeasterly direction, the OOW searched in vain for the leading lights, normally between two anchorage buoys, indicating the secondary channel. He was navigating visually, not utilising the bridge navigational equipment or charts. While still looking for the leading lights, the OOW glanced at the echo sounder and noticed that the water depth was decreasing. The vessel was making approximately 10 knots and a course over ground of approximately 027°. He then glanced at the ECS and alerted the Master, who quickly ordered the rudder hard to port. The OOW put the helm to port but at the same time the vessel struck the river bottom and remained grounded.

Some of the findings and lessons learned from the official report were:

- The OOW focused on finding a visual reference and did not utilise the bridge navigational equipment to effectively monitor the vessel's progress as it proceeded off the intended course and went aground. During this time, the Master was not participating in or supervising the navigation of the vessel, and there was no communication between the Master and the OOW. As a result, the deck watch was effectively composed of a single person who was expected to fulfill all of the tasks of navigation, maintaining a lookout and steering.
- The Master did not assess the OOW's understanding of the navigational requirements for the intended voyage following the familiarisation trip on the previous day, and there was no documented plan for the OOW to use for guidance.

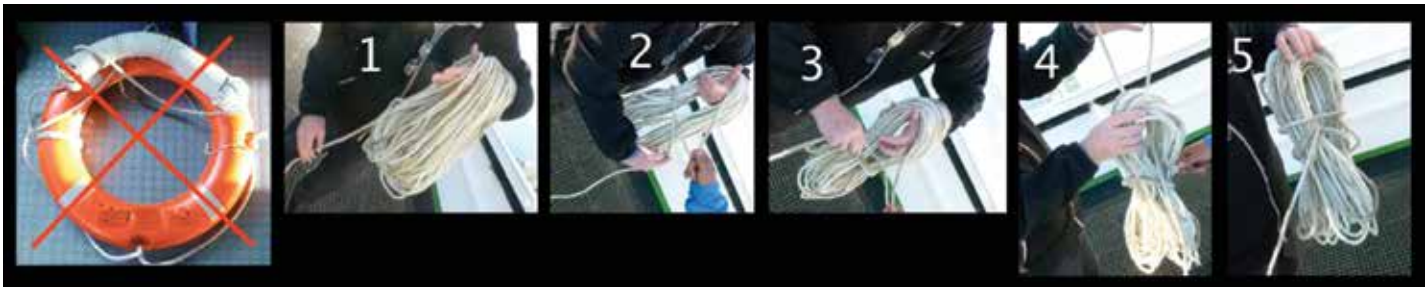


MARS 201523

Tight coil/slow rescue

➔ When I was a cadet, one of my friends drowned after he fell from the gangway into the water. Since that time I have taken particular interest in lifebuoys with lifelines. Now, when I visit ships as a marine safety inspector and auditor, I often find the lifebuoy line coiled as a tight 'sausage' (see below left). When coiled in this manner it takes, on average, two minutes to unravel before the buoy can be thrown into the water.

The proper way to coil a rope for quick and easy use is illustrated in the pictures 1 through 5 below.



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MARS 201524

Hand injury during mooring operations

➔ A bunker barge was approaching the port side of a Platform Supply/multipurpose Vessel (PSV) at anchor, for bunkering operations. The crew of the bunker barge passed the 'messenger line' to a crewman on the PSV, along with two mooring ropes. The crewman took the ropes and put the eyes of the two mooring ropes on each of the twin aft bollards and returned the messenger line to the bunker barge crew. The crewman on the PSV, assuming the mooring operation was over, started to walk away. As he reached amidships the Master of the bunker barge got his attention and indicated that he should go aft again and shift one of the mooring ropes to a different bollard. As the barge crew slackened the mooring rope a little the PSV crewman tried to remove the rope. At that moment there was sudden tension on the rope (due to relative movement between the vessel and bunker barge) and his left palm got stuck between the rope eye and bollard.

The PSV crewman suffered severe laceration injuries to his left hand. First aid was given and the victim was taken to the ship's hospital for further checks before going ashore for further treatment.

Lessons learned

- The mooring rope was handled without insisting on it being sufficiently slackened.
- The PSV crewman failed to take into account the relative movement of the vessels, which led to his hand getting stuck between the eye of the rope and the bollard.
- There was no very high frequency (VHF) communication established between the bridge of PSV and the bunker barge. The injured person was not in VHF communication with the duty officer and was taking instructions directly from the bunker barge Master and crew.
- The PSV crewman was attending to the moorings alone which was contrary to the existing job hazard analysis which required attendance in pairs.