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Seaways

The International Journal of The Nautical Institute

Maintaining active navigation

Ensuring situational awareness p12

The Nautical Institute

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Focus

Active or Passive?

> Modern systems put the navigator into a monitoring role that should allow the time for improved situational awareness

This question is posed by Captain Paul Whyte this month with regards to the conduct of navigation (see pp 12-13). He briefly traces the art of navigation from the early 20th century through to the present day and identifies each phase in terms of active involvement or passive monitoring by the navigator, depending on the available chart type and systems. He recognises that modern systems provide far greater accuracy of position and their integration puts the navigator into a monitoring role that should increase the time for improved situational awareness. However, over-reliance on GNSS as the sole position provider remains a concern, even though the requirement for the navigator to set many of the parameters and control features of the ECDIS re-establishes the active role. The vulnerabilities of GNSS have been written about many times in this and other professional journals together with the need to continue to use all available means of navigation to cross-reference and guard against failures. Captain Whyte concludes with the hope that the IMO's eNavigation concept will provide the accuracy, integrity, availability and continuity of service that is needed for a position fixing system. Perhaps it will, eventually, but the progress towards its implementation is barely discernible despite some seven years of debate, and the lack of consensus or even enthusiasm for it among many maritime nations must give cause for concern that it will ever come to fruition. In the meantime, if you are a navigator, ask yourself whether you are being active or passive on a regular basis. In fact, every watch, as it will help to make and keep you safe in your navigation.

Membership activity

The active or passive question equally applies within the Institute. The HQ staff and volunteers in the branch areas are very active on the members' behalf as the large number of reports in the NI Log (pp 27 to 31) show. These are generally activities of real value as continuing professional development (CPD) with the occasional social event or one of historical interest thrown in, and they are equally good for networking which may well provide career opportunities. They are certainly worth making the effort to attend, and it is interesting to compare the reports on navigation audits from different parts of the world (Houston and London).

Every branch has a small team of members putting in the work to arrange these events for which Council and the Executive Board are really grateful (see Governance Proceedings pp 8-10). However, even in a branch with a large number of members, such as the Solent in the UK (375 members), cyclical downturns can occur. When that happens, it is necessary to help the branch revitalise and we are delighted that 40 members turned out for the relaunch of the Solent Branch on 14 January despite the wild weather. A new committee and officers were elected to take the branch forward into a new era of CPD events to meet the needs of the diverse membership throughout its area. Similarly, there is burgeoning interest in developing a new branch in India (South West) based around Kochi. We wish the members there every success and look forward to the launch event.

For those who prefer the occasional major event there have been the Command Seminars to attend over the past year and the one in Glasgow is reported this month (see pp 5-7). This was the penultimate one in the series of five and the report from the final seminar in Manila will be published next month. Once again, there was an wide cross-section of the industry at the seminar, from cadets to serving masters, pilots, managers, insurers, trainers and many others. The level of questioning and comment in the open forum sessions was excellent. It is these sessions from which the conclusions of the seminars are derived.

If the physical meetings do not fit with your work and lifestyle, you can be equally active in our LinkedIn group (over 13,000 members) and/or Sea-going Correspondence Group (SGCG). Their input feeds into the Institute's work at the IMO and many other decision making bodies where the voice of the maritime professional, whether at sea or ashore, needs to be heard. There are many ways to be active rather than passive – and enjoyment, as well as career development, is very likely to be the outcome.

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Mariners' Alerting and Reporting Scheme

MARS Report No. 268 February 2015

MARS 201507

Small and manoeuvrable but still out of control

➔ On a clear night, a small feeder ship with controllable pitch power (CP) was brought out of a restricted port in order to shift berth from port to starboard side. It was to be turned around and brought back in. A passage plan was presented and discussed during the Pilot/Master exchange prior to leaving the berth. The passage down river to the sea was uneventful. The vessel turned outside the port and began the approach to re-enter.

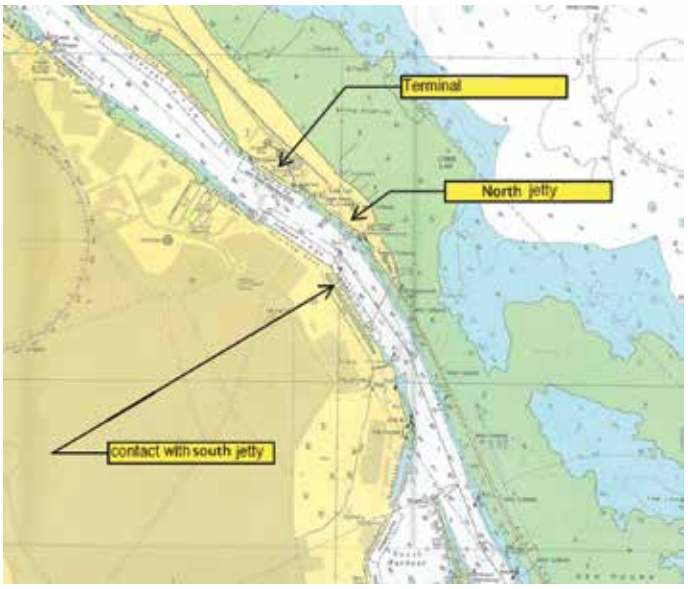
While passing the breakwaters the vessel's speed was approximately 8.5 knots (40% pitch). As they progressed in the gyro was checked against leading lights and found to be out by up to 8°. The pilot suggested that another bearing be taken on the inner harbour leading line. During this phase of the transit, verifying the gyro occupied the bridge team to a great extent.

On approaching the jetty, the pilot ordered a reduction of speed to minimal ahead. The pitch was subsequently reduced from 40% to 10% but this sudden reduction caused a large swing to port. The pilot ordered starboard helm and more propeller pitch to aid steerage. Now at about 2-3 cables from the terminal berth, the pitch was put to 0% and then full astern which swung the bow to starboard. This resulted in the vessel grounding south of the terminal berth at about 3 knots.

Coming full astern brought the vessel off the ground very quickly, but caused the stern to swing rapidly to port. The vessel then made heavy contact with the south jetty on the opposite side of the river. At this point, control of the vessel was regained and the vessel completed berthing starboard side to at the terminal berth.

Lessons learned

- The gyro error distracted the bridge team during a critical period of the berth approach.
- Background lights and darkness made visual observation of the berth, and the closing distance, more difficult to judge.
- The Master was unaware of the pilot's contingency plan, which was to overshoot the berth (go further up-river). This was not communicated during the Master/Pilot exchange.
- As is common with CP power vessels, the abrupt decrease of speed caused the vessel to lose steering and take a shear.
- The Master played a passive role during the manoeuvres and could have been more aware and involved in the handling of the ship and its movements.



MARS 201508

Expired flare improperly discarded

Marine Safety Forum – Safety Flash 14-32

➔ A discarded marine flare ignited on the picking line at a depot where ship's garbage is sorted. Fortunately there was no injury to personnel but some damage was done to the conveyor belt.

Flares and other special wastes should not be disposed of within the waste receptacles provided by the port for the use of ships. Disposal of expired ship's flares or any marine pyrotechnic should only be arranged through an approved provider for such services.

MARS 201509

Being tough may not be enough

Edited from Marine Accident Casebook

➔ There are concerns that freefall lifeboats being installed in vessels currently under construction may not be compliant with the Life Saving Appliance (LSA) Code. Despite type-approval and acceptance by a major classification society the design does not comply with LSA Code

(Chapter IV 4.7.2.2), which calls for at least 650mm free clearance in front of the backrest. In this design the distance is only about 150mm. Under certain circumstances such a limited distance can be dangerous or even fatal to any person sitting in that seat. In addition to the personal injury hazard the non-compliance could put the vessel at risk of detention in the event of a port state control inspection.

Efforts are underway to resolve the situation with the lifeboat manufacturer in question. However the same issue may arise with other lifeboat designs, and crew should be aware of the issue.

Lessons learned

1. Even classification societies and the class inspector on board during the vessel construction can make mistakes or miss something. Mariners should remain vigilant as ultimately they will be the ones using the equipment.
2. Shipowners, Masters and mates should ensure that lifeboats aboard their vessels are compliant with the LSA Code and, in event of non-compliance, advise their owners and class society.

MARS 201510

Gangway to heaven

Edited from UK P&I Club Technical Bulletin 42-2014

➔ Many serious injuries (or deaths) are caused by falls from gangways or embarkation ladders. Vessel risk assessors frequently see gangways that are badly rigged or otherwise in a poor condition and witness dangerous working practices.

Often, accidents occur while the gangway is being rigged. Rigging the stanchions and the side ropes is inherently dangerous as there can be little for crew members to hold on to until this is completed. On the other hand, many ships are now fitted with a gangway safety wire to which the safety harness line can be attached or even fall inertia blocks which allow for greater freedom of movement.

No lifejacket or safety harness

Consider how best to rig stanchions and safety chains. In the photo below on the left, it is clearly difficult to step onto the bottom platform from the bow of the launch, while on the right access from a launch to the gangway or vice versa is much easier.

Wrong **Correct**

Sometimes the bottom platform has not been adjusted to suit the ship's draught. The bottom platform should be as close to the horizontal as possible to ease access and increase safety.

Bottom platform not horizontal

Other common faults with gangways include incorrectly rigged safety nets, slack sidelines, slippery steps and loose or missing stanchions.

Missing stanchions

The gangway safe weight limit (SWL) is often unrealistically large, sometimes as much as one person per step. Although the physical static strength of the gangway and wire could probably bear this number of persons, the dynamic load (bouncing effect) should be considered.

Unrealistic SWL

Lessons learned

1. Crew should always wear a safety harness and lifejacket while rigging a gangway. Even though installing a safety harness line can sometimes be difficult and movement restricted by the length of the harness line, a life saved is well worth the effort.
   Gangways should be inspected regularly. Particular attention should be paid to areas where there are aluminium alloy to steel connections. The absence or deterioration of the insulating gasket can lead to electrolytic corrosion, which will cause wastage and hence weakening.
3. Ensure a proper and realistic SWL is indicated on the gangway. Strictly enforce this limit, even when stevedores, agents, inspectors and chandlers want to board 'en masse' as soon as they are able.
4. Gangways should never be raised or lowered when personnel are on them.
5. In certain situations, the use of pilot ladders may be the safest, or only, option. However, as their name infers, these are mainly for the use of pilots who are specifically trained in their use.

MARS 201511

A small defect leads to a large collision

Edited from official BSU accident report 417-13 (Germany)

➔ A small container vessel was making way in a restricted waterway under pilotage. Earlier that day there had been intermittent main engine problems due to a drop in lubricating oil pressure, but the exact cause of the reduced oil pressure was not yet known.

The vessel decided to overtake a much larger container vessel. As it was overtaking, the lubricating oil problem occurred again, and main propulsion on the small container vessel automatically shut down. Hard starboard rudder was quickly applied, but the vessel became unmanoeuvrable and was drawn to port towards the larger vessel due to hydrodynamic interactions. The forecastle of the smaller ship rammed into the starboard side of the larger vessel's aft section at an angle of about 60°. The force of the collision caused 15 containers on the smaller vessel to fall overboard. Due to the ebb current and the loss of manoeuvrability, the smaller vessel then ran aground outside the fairway. Both ships sustained material damage above the waterline and the fairway had to be temporarily closed to transiting shipping.

Photo credits to Abeltine Janssen-Ottes

Lessons learned

1. The loss of main propulsion on the smaller container vessel caused a reduction in speed, among other things, and made the vessel unmanoeuvrable. Hydrodynamic effects then took over and caused the smaller vessel to move unavoidably towards the larger.
2. Even after extensive investigations it was not possible to conclude, with absolute certainty, the cause of the oil pressure drop of the main engine. However, seizure marks were found on the discharge piston of the pressure control valve of the lubricating oil system. The most probable theory is that this valve became blocked in the fully open condition from time to time enabling a disproportionately large amount of lubricating oil to flow back into the retention tank.

Pressure control valve as installed

3. Considering the vessel had several episodes of main engine problem during the day, it would appear that insufficient attention was given to the risk of an accident due to this anomaly during the time the vessel was in the restricted waterway.
4. VDR data for the time of the accident on the small container vessel was not available for the investigation. No technical faults were found on the VDR; it is likely that the data backup button was not depressed as per the manufacturer's specifications. It may have been held down for either less than the two seconds specified by the manufacturer, or longer than the maximum five seconds.

■ **Editor's note:** Since the introduction of VDRs, accident investigation and hence root cause analysis has made great strides. However, a lack of VDR data subsequent to an accident, as in this case, is still all too common. Owners and operators that value safety should consider regular testing of this equipment and ensure clear, vessel-specific procedures on how to operate the VDR. Test procedures can even include the use of the VDR 'test data' for navigational audit purposes, thus accomplishing two important tasks at once.

MARS 201512

Broken gear deals a KO blow

➔ Stevedores were securing containers on board a vessel with chain slings. During the securing of one container, the chain broke at the hook and hit a stevedore on the head. The stevedore's helmet took the brunt of the impact and was cracked in the process. The victim was treated with stitches and had to take 11 days medical leave.

During the investigation the Master was asked to show the schedule of inspection/maintenance of the lashing equipment but none was available.

Lessons learned

- Although inspecting chains and lashing equipment is an arduous task, it must be done and proper records kept on board.
- Fortunately, the stevedore had his protective helmet on – yet still received stitches and many days of recuperative leave. Imagine the injury and lost time had he not had his helmet.
- The contributor of this report suggests that one way inspection and maintenance of such gear on busy vessels can be adequately carried out is by leaving it to properly trained personnel at a shore workshop. Readers with experience in this area who would like to share their best practices with others are invited to send their comments to mars@nautinst.org.

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