

May 2015

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Seaways

The International Journal of The Nautical Institute

Making safety matter

Look at the reality, not the appearance **p22**

Taking responsibility

Making lessons reported into lessons learned **p24**

Training and mentoring

Moving the agenda on **p30**

Manning levels

No rest for the weary? **p35**

Annual report

Expanding The Nautical Institute and the services we offer **p6**





Focus

Working for you – what you can do

“If you are within striking distance of a Nautical Institute seminar or other branch event, spare the time to attend and enjoy the company of likeminded professionals, learn from them and contribute your own experience

”

As usual the May issue contains the Annual Report of the Executive Board, the Annual Accounts and the list of those members providing their time and expertise to the governance structure of the Institute, for which we are all most grateful. Not listed but equally important are the members devoting their time and energy to running the branches in our worldwide network. The branches are semi-autonomous and many are self-funding through generating a surplus from seminars and social events as well as generous donations from sponsors. Support for the branches is always available from NIHQ, whether financially or as guidance or through visits by the officers or staff. Such is the case for the AGM Event in San Francisco on 11-12 May, hosted by the new US West Coast Branch (see p 31) and the preceding BC Branch Conference on maritime energy transportation in Victoria on 7-8 May (see For your Diaries p2). Both are well worth attending for professional development and networking, while the CEO's follow-on visit to Houston for the seminar on Dynamic Positioning Operator training (19 May), hosted by the US Gulf Branch, will be of most interest to those in this specialised discipline.

These activities all take a good deal of planning and much of it falls on a core team of branch committee members who deserve our fullest support. So if you are within striking distance of these events or others advertised by the branches, spare the time to attend and enjoy the company of likeminded professionals, learn from them and contribute your own experience (see Ireland Branch ECDIS Seminar pp 28-29). This is one way that you can contribute to the work of the Institute and there are many other ways too. Volunteering to serve on the branch committee or within the Institute's governance structure (see p21) is always welcome, and invariably far less onerous than members imagine. It is also very useful experience, as it is not uncommon to come across committees or working groups in professional life. Just contact the Branch Secretary or NIHQ to put your name forward.

Other ways to contribute include submitting MARS reports, as we all see or experience unsafe practices, near misses, or accidents from time to time (see pp 17-20 for good examples); writing an article or letter

for *Seaways* (the Captain's and Naval Columns are fine examples this month); authoring a book or chapter; submitting a piece for *The Navigator*; volunteering to be a delegate at the IMO (see p 36); or engaging in debate through the Institute's LinkedIn, Facebook or Twitter groups. By the time you read this, the President's Questionnaire to gather members' input for the Institute's Strategic Plan 2016-2020 will have been circulated electronically and will be available on the website, so please take the few minutes required to complete it and shape your Institute for the future. Last but by no means least, recruiting your friends and colleagues into membership is a huge help to the Institute and is recognised through an Awards Scheme.

Let safety see the light of day

As Captain Singhal so aptly says, 'Don't sweep safety under the carpet' (see pp 22-23). He is concerned that the overwhelming desire of companies to present a perfectly clean audit trail of paperwork to satisfy inspectors is actually doing a disservice to improving safety, as it discourages deficiency reports that should be made and rectified. In the reports to the Confidential Hazardous Incident Reporting Programme (CHIRP) with which we are involved, and with whom we have a joint CHIRP/MARS ambassadors project, reluctance to report concerns through the company's SMS is cited more often than not, perhaps because people are fearful of losing their jobs. This perception or culture must be addressed and can certainly be put in the Lessons Identified category as it is probably well known. However, as Admiral Essenhigh points out in his Naval Column (see p 24), to turn a Lesson Identified into a Lesson Learned requires positive action and an assurance that the desired improvement has actually occurred so that the deficiency or problem will be prevented in future. There are lessons for all of us in this article, which should certainly be applied by owners and flag states to the perennial criticism of Minimum Safe Manning Certificate calculations (see Nautelex p 26). It is good to see a major insurance company tackling this longstanding issue and providing pertinent advice which is no doubt backed up by their own claims data in hard cash terms.



p6



p28



p32



p36



Mariners' Alerting and Reporting Scheme

MARS Report No. 271 May 2015

THE EDITOR'S VIEW

Hindsight - not quite 20-20

→ The often quoted saying 'Hindsight is 20-20' would have us believe that an accident, once analysed from the comfortable perch of hindsight, cannot happen again because we know exactly why it happened. But similar accidents seem to happen over and over again – even to people that know better. This editor's humble suggestion is that safety is an ongoing effort – it is hard work that needs constant attention. Every crew member should increase their own risk awareness by reading and understanding accident reports such as MARS. Help us help the marine community by sending us your reports.

MARS 201525

Moving gantry causes serious injury

→ While in port, several cargo hold hatch cover pontoons had to be shifted from forward to aft. An officer was operating the hatch cover gantry crane and a deck crew member was standing nearby, but at one point the crew member was not within the field of view of the operating officer.

It appears that the crew member was standing with his back to the oncoming gantry, so he did not see the gantry nor the flashing warning lights to indicate its operation. Additionally, the noise of the port may have drowned out the ringing of the gantry alarm.

The crew member's coverall became stuck on the leg of the gantry and pulled his left hand and arm between the gantry crane leg and the structure of the cargo crane. The crew member's left arm was severed at the elbow and the remaining tissue badly mangled. He was transported to a local hospital where the remaining part of his arm was surgically removed.

The company investigation determined, among other things, that safety is not achieved through rules and procedures alone but also depends on the actual actions of people.

Some of the solutions brought forward were:

- Clear 'danger area' paint markings could be applied at the forward part and aft part of each crane base (black and yellow stripes with letters reading 'danger area' for example).
- On the port side of the gantry crane, a horizontal nylon cord could be installed at a height of about 120 cm from the main deck, connected by means of an electrical switch to the emergency gantry stop.
- A fish eye camera could be installed on the port side of the hatch cover gantry crane, including a display at the operation unit of the crane. The operator would then have a clear view on the port side area of the crane.



■ **Editor's note:** Even with physical 'defences' such as functioning lights and an alarm, a serious accident occurred and a crew member's seagoing career was instantly ended. Physical defences appear to be insufficient for this workplace, although a camera for the gantry operator would probably increase safety. Additionally, procedures would need to ensure 'no go' zones were enforced while the gantry crane is in operation.

While the photos of this report were too ghastly to publish, one can imagine the scene where a person's arm has been torn from their body. In this case, quick first aid and pressure applied to the shoulder were able to slow the bleeding enough for transport to the hospital, probably saving the victim's life.

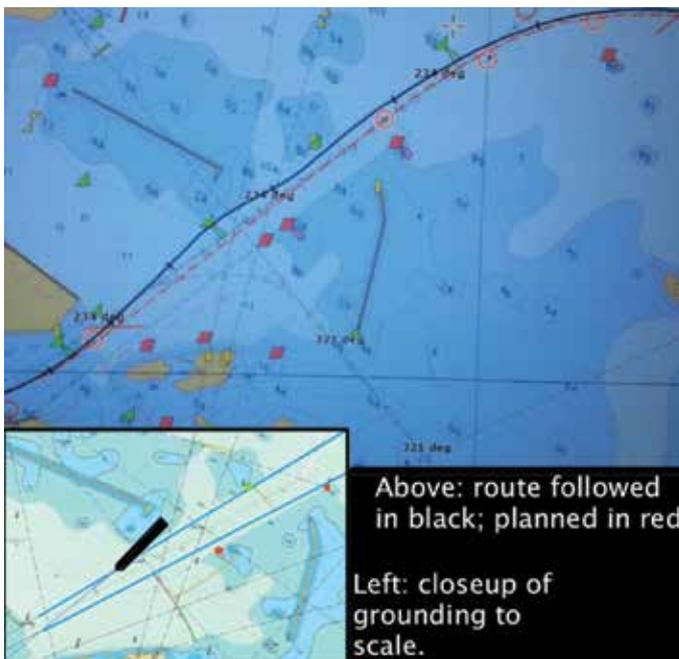
MARS 201526

Familiar port – unfamiliar outcome

Edited from official report RS 2014:11 (Swedish Accident Investigation Authority)

→ In darkness and good visibility a ferry (196m in length) was making a routine entrance into one of its normal ports of call. There was a light northerly current and SSE wind of about 20 knots. As the ship approached the port at a speed of 14 knots, the OOW initiated the turn to port to follow the fairway using the autopilot and a preset turning radius of 0.3 nm. The autopilot was set in 'heading mode', which meant that the drift was to be corrected manually. After the turn, the first green buoy encountered was passed somewhat closer than planned and a little beyond the intended route. At that moment, the Master told the OOW he was manually taking over the steering and engine control on the starboard bridge wing. He then disengaged the autopilot.

Soon thereafter the OOW indicated to the Master that they had



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drifted from their planned course and the Master affirmed. He applied starboard rudder in an attempt to bring the stern away from the starboard shore before the aft part of the vessel had completely passed the buoy. The Master then looked forward and perceived that the next green buoy was straight ahead, so he put the rudder to port and crossed the engines to place the ship on the correct side of the buoy. He then saw the green buoy disappear under the vessel at approximately mid-length. The vessel made contact with the bottom shortly thereafter.

The investigation found, among other things, that:

- The central navigation stations were not equipped with hand steering, and bridge routines had developed whereby control of the ship was taken at the bridge wings during the last (critical) part of navigation into the port.
- There were no log or wind indicators at the bridge wing controls.
- The division of workload between bridge team members when navigating in narrow fairways is critical.

■ **Editor's note:** Entering a port, even a familiar one, where the room for error is so small, given the size of the vessel, the speed of 14 knots, and that it was night time, is also cause for concern here. Night navigation and manoeuvring is more tricky than in daylight; visual perception of speed, distance and general situational awareness are less than in broad daylight.

MARS 201527

Slippery deck gives way to new risk assessment

➔ Deck crew were preparing for port arrival. It had been raining and the deck was wet; as a crew member was pulling a messenger rope he slipped while standing on a part of the deck that was painted yellow to indicate a snap back zone. He landed on his left hand, with the full weight of his body coming onto his wrist. This caused a splintered fracture of the radius wrist bone.

The deck where the crew member slipped was not treated with a non-slip material. An earlier assessment had determined that to avoid abrasive damage to the HMPE ropes used for mooring it was preferable to leave the snap-back zones smooth.

Lessons learned

- Prevention of slips and injury should take precedence over avoiding damage to the ropes.
- The damage to HMPE ropes can be minimised by careful handling during mooring and preparation.

■ **Editor's note:** This report is a good example of how risk assessments should be 'living documents'. A risk assessment must never be cast in stone and should be reviewed regularly, and especially after an incident or accident. In this case, the company wisely reviewed their earlier assessment and corrected the deficiency.

MARS 201528

Chart corrections while navigating contribute to grounding

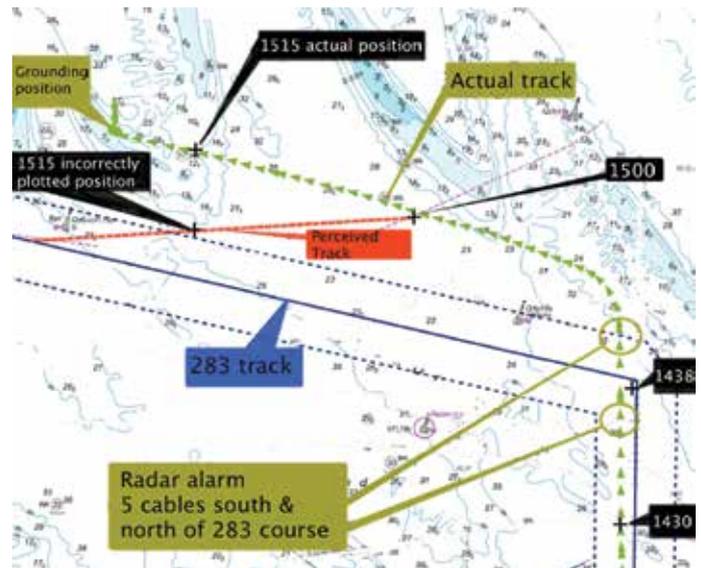
Edited from official MAIB report 30-2014

➔ With the vessel on a northerly course, at 1430 the OOW fixed and plotted the vessel's position, but did not calculate the predicted time for the next course alteration. About seven minutes later a radar alarm sounded indicating that the vessel was five cables south of the waypoint marking the start of the 283° track. The OOW acknowledged the alarm and fixed the vessel's position at 1438 using GPS and a range/bearing from a nearby RACON buoy. He then continued with his chartwork,

completing corrections on some newly delivered charts.

At 1441, the radar alarm sounded again, this time indicating that the vessel was crossing the northern boundary of the five cable safety corridor on the 283° track. Realising that he had missed the turn to the 283° course, the OOW came to port and steadied the vessel on a heading of 270°. At 1500, the OOW recorded and plotted a fix which showed that the vessel was significantly to starboard of the planned course; he then adjusted the vessel's heading further to port, to 267°.

At 1515 the OOW took a GPS fix but incorrectly plotted it one mile to the south of the vessel's actual position. At 1521, the vessel's speed started to reduce and the bow swung to port as it grounded.



Analysis

When the relieving OOW took over the watch, he did not check to identify what navigation marks would be made or the potential dangers that lay ahead. Neither did he make an assessment of the expected effects of tidal stream or wind.

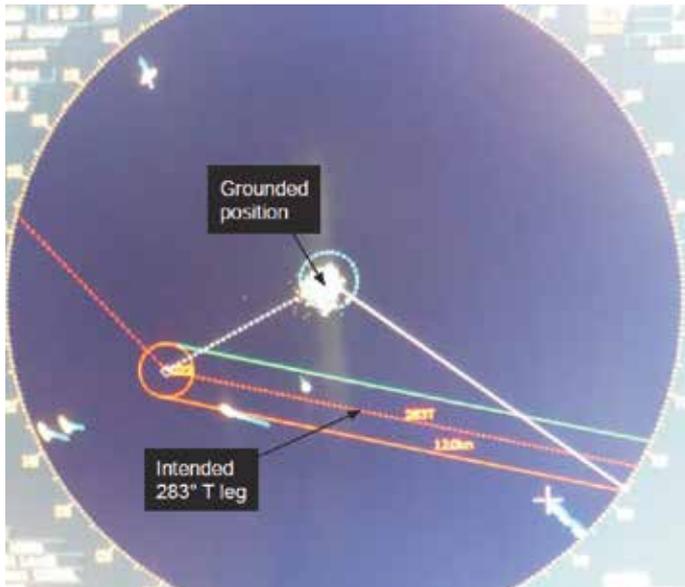
When the OOW eventually altered course to port, the vessel was already well to starboard of the 283° track. His choice of 270° and then 267° were not effective in regaining track. When plotting the fix at 1515, the OOW's unfounded understanding of the situation was that the vessel was regaining the track. As a result, it is highly likely that he plotted the fix showing where he perceived the vessel to be based on this incorrect assessment.

Yet, other clues that the vessel was not regaining the planned track were available. Had the OOW correlated visual observations with the chart, it would have been readily apparent that a nearby buoy on the port bow should have been to starboard.

Additionally, the S-band radar and map function would have clearly shown the vessel's actual track diverging away from the intended track as seen in the diagram overleaf.

The GPS display would also have shown the course and speed over the ground which, if compared with the course and speed through the water, would have indicated a very significant difference.

During his watch, the OOW spent long periods of time at the chart table correcting and preparing the newly delivered charts. With responsibility for navigation, it is understandable that he felt a strong duty to prepare the charts for the passage ahead. However, this task distracted him from his primary role of maintaining a lookout and monitoring his vessel's passage, and resulted in him missing the planned turn to port.



All of these factors meant that the OOW did not have continuous and accurate positional awareness.

Some of the findings, as edited, of the official report were:

- The vessel was underway without a complete berth-to-berth passage plan.
 - When taking over as OOW, the officer did not make himself aware of the navigational hazards ahead or the very significant effects of wind and tidal steam.
 - The OOW was distracted from his task of navigating the ship by undertaking passage planning and chart corrections when on watch, causing him to miss the planned course change and lose positional awareness.
 - After the alteration of course to 270°, the OOW did not effectively monitor the vessel's position; no fix was taken when steady on the new course, no estimated position (EP) was calculated and radar parallel indexing was not used.
 - Unaware of the significant northerly set, the OOW assessed that the intended track was being regained and plotted the 1515 fix where he perceived the vessel to be.
- **Editor's note:** Good navigation results are unlikely if the OOW is preoccupied with other duties such as chart corrections. Close coastal navigation requires 100% of your focus and attention.

MARS 201529

Modified hull magnets cause concussion

From US Coast Guard Safety Alert 14-14

→ While boarding a vessel a pilot suffered a concussion; a modified embarkation ladder hull magnet device disconnected from the ship's hull and struck him on the head. Unfortunately, this was not an isolated incident. Incidents with injuries have occurred on other vessels at several different ports. In each of those instances the hull magnets had been modified prior to the accident. Moreover, in all cases, after restoring the hull magnets to their original design no further problems were experienced.

Hull magnets are easy to operate devices and when two of them are positioned correctly they provide substantial holding force. The handle of the magnet is also a lever and enables easy release from the hull of the vessel. Proper use of the magnets is shown in the image below left.

In the incidents where the magnets unexpectedly detached from the hull, only one securing magnet was used, placed between the rails of the ladder and alterations (remote release device) that deviated from the manufacturer's design had been made (image below right).

Lessons Learned

Specialised embarkation equipment should be used as per manufacturer's instructions and should never be modified other than under manufacturer's specifications.

Regular inspections of existing vessel boarding equipment should be carried out and any improper modifications returned to the manufacturer's original design.



READER'S FEEDBACK

MARS 201510 Gangway to heaven

→ Several readers quite rightly objected to our labelling of the photos in MARS 201510. The photo on the left was labelled 'wrong' and that on the right 'correct'. Of course, we were referring to the method of rigging the stanchions, keeping the outboard side clear for easy access to and from a launch. However, in both photos the crew member is without a lifejacket and/or safety line, so in that sense both photos are wrong.



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Fire in paint store

Re-print of MARS 200154

→ Our vessel was undertaking a refit in a repair yard in Europe. Modifications requiring 'hot work' were being made to the paint store by shore personnel. The morning shift came on board and started work straight away without informing the ship's staff or taking any safety precautions.

In the vicinity of the hot work were drums of paint, thinners and other combustible material. A molten piece of metal from the plate being cut landed on a drum of thinners and set it on fire. No means of fire fighting had been provided in the vicinity of the work and the shore personnel

started panicking. It therefore took some time for the ship's crew to realise what had happened. As soon as the picture became clear, the crew extinguished the fire and isolated the drum of thinners. If this action had not been taken, the entire Bosun's stores could have been gutted and all the contents, including mooring ropes, lost.

Lessons learned

- Shore personnel should never start work on board without the knowledge of a responsible ship's officer.
- The officer must inspect the work site and issue the required work permits only after ensuring that there is no combustible material in the vicinity, that fire fighting equipment is readily available and a fire watch is being maintained.

Making a difference to the shipping community

The Institute gratefully acknowledges the support of its Nautical Affiliate partners. Through their contributions, MARS saves lives, prevents injuries and contributes to a more effective and safer shipping community.



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