

Seaways

The International Journal of The Nautical Institute

Coming, ready or not!

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An inspector calls

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Focus

Home Truths – Hard Facts

“ Too often the failure to act professionally is given as the root cause of an accident, without investigating why an otherwise professional mariner with a good track record acted in this way at that time. ”

Occasionally, over the years, we have received feedback on *Seaways* that its articles are too academic or that some of our readers feel that they no longer seem connected with what is going on in the industry, primarily due to the pace of technological development but perhaps also the changes in regulations. This month's articles should provide some comfort in that they are grounded in the practicalities of the seafaring profession which will be instantly recognisable to all members of whatever age or experience. It is to be hoped that they will be read and acted upon by marine administrators and equipment manufacturers the world over – even though they will encounter some hard facts that may well make them feel uncomfortable.

Let us start with ECDIS and a Chief Officer's Column (see p 4), where Alexander McDonald tells us as it is in the three 'paperless' ships that he has served on so far. He is certainly not against the onward march of technology, but questions why such a sophisticated and mandatory system is not better equipped to serve the needs of the navigator. He is particularly eloquent in his description of the alarm system, a subject that we have focused on many times in recent years in *Seaways* and *Alert!* It should be remembered that the ECDIS alarms are but a small component of the huge array that are concentrated on the bridge – in some cases 200 or more. That they are distracting at critical times cannot be doubted from his descriptions. Similarly, the time taken to use the technology may not be as efficient as the use of the traditional paper chart, and the variety of designs requires frequent training and retraining. A number of these points are replicated in the LinkedIn discussion (see p33) that ensued after Arne Sagen's article in October's *Seaways*, where again there was recognition that ECDIS is here to stay, but is not all that it was intended to be when mandated by the IMO. It is appreciated that it is very difficult to change performance standards after they have been set, but there is mounting evidence that a hard look at them is required as the lack of standardisation in such a critical piece of equipment is a major hindrance to safe navigation. The same applies to lifeboat release mechanisms, as we have said before many times.

Following on from those home truths, and not unrelated in some cases, is the need to delve deeper into the root cause of accidents and incidents.

Captain Bidyut Banerjee brings his considerable experience at sea to bear on this subject (see pp10-12) and questions why the plethora of reports and analyses are not providing the improvement in safety that we all desire. That they provide a wealth of information on the cases from which to learn cannot be denied, but either the lessons are insufficient to drive change or something is missing from the analyses. Captain Banerjee points out that too often the failure to follow procedures and act professionally is given as the root cause of the accident, without delving behind this obvious end result to find out why an otherwise professional mariner with a good track record acted in this way at that time. Many human factors may lie behind the accident and should be fully identified in a thorough investigation, including manning levels and the imposition of multiple inspections in port whilst complex cargo operations are being supervised – all supposedly within the regulated hours of work and rest. In addition to these thoughts on root cause analysis, he provides practical advice to his fellow masters and officers on setting priorities for the safe conduct of the voyage.

The issue of the inspection regime is further explored by Dr Nippin Anand (pp 13-16), who has been interviewing seafarers on this subject recently. As a former Principal Surveyor, it is likely that he got some home truths that he could relate to with a degree of discomfort but he is fully committed to seeking improvements. It is abundantly clear from his research that the inspection regime in all its many forms has multiplied to such an extent that there is a very real danger it is actually having the reverse effect to that intended i.e. it is diminishing rather than enhancing safe operations. The point is made time and again that many of these inspections focus unduly on petty regulatory compliance and documentation rather than assessing major risks. Those doing this work and their superiors need to take a long, hard look at what they do, why they do it, and what effect it is really having. Finally, we are pleased to introduce a new service, the *Seaways* App for tablets and phones. It will be much more user-friendly than the present online version, which will be maintained. It will also allow us to put in additional content, like video or audio clips, or relevant documentation. Download of the App is free, but members will need their membership password to log in.



p13



p21



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p35



Mariners' Alerting and Reporting Scheme

MARS Report No. 280 February 2016

MARS 201606

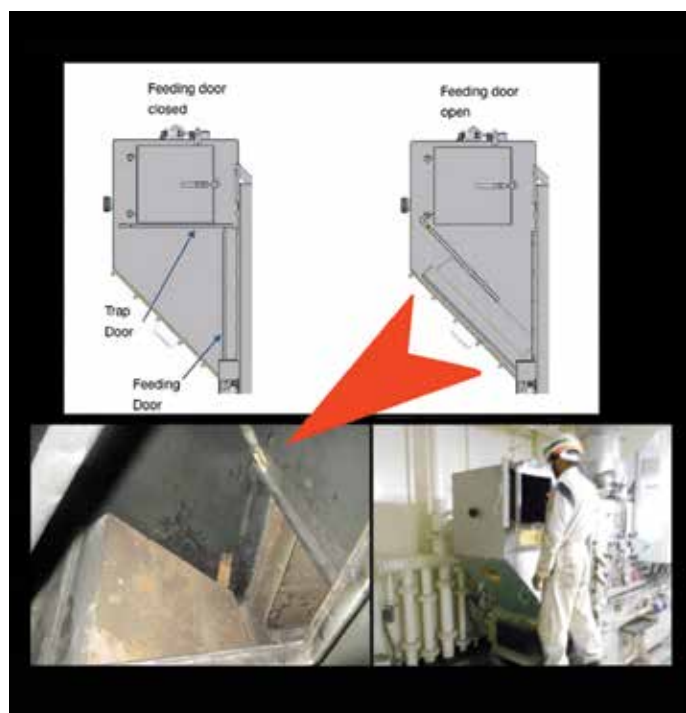
Incinerator safety devices bypassed

→ The vessel was underway when the incinerator alarm sounded, indicating the inside sluice gate was open. The incinerator was stopped and allowed to cool. A few hours later, the 4th engineer went to the incinerator room to investigate.

Standing on a small step, he opened the garbage loading door and also the sluice gate. (The incinerator feed system is such that when one door is open, the other must be closed and vice versa. Two different safety devices near the feed door ensure this operation; these must be overridden in order to look into the incinerator sluice chamber.) When the sluice gate was opened, he saw a piece of wood at the opposite end of the garbage loading door. While checking, he accidentally dropped his torch inside the incinerator door. While trying to recover the torch, the automatic sluice began to close and trapped his arm.

His arm firmly stuck, the 4th engineer tried to call for help but nobody heard him. After coffee, the 2nd engineer went to the incinerator room to see how the job was progressing and investigate why the 4th engineer was not at coffee. He found the 4th engineer trapped; he immediately released the victim and brought him to the ship's hospital. Emergency notifications were initiated and treatment was given as per medical advice. The vessel deviated from its route but evacuation was delayed by foul weather and darkness. The next morning the vessel was brought alongside and the victim evacuated by land.

In the hospital, no fracture was apparent but a total obstruction of all blood vessels to the hand and forearm was confirmed. Surgery was performed immediately but to no avail and amputation of the forearm was unavoidable.



Lessons learned

- Never bypass the safety features of an installation and always follow the procedures.
- The amount of waste fed at any one time should be in quantities that do not tend to block the incinerator doors.
- Working alone in isolated areas has increased risks and should be the subject of a risk analysis.
- Apparently, objects blocking the incinerator doors was a fairly regular occurrence (once a month) on this ship. It is possible that this 'common occurrence' encouraged complacency and risky behaviour such as taking shortcuts and bypassing safety features on the equipment.

■ **Editor's note:** Readers may remember a fairly recent MARS report that was strikingly similar; 201551. The lessons learned from that incident were:

- Proper training and supervision are critical with operations such as incineration.
- Incineration on this ship is best undertaken by two persons.
- Ship-specific Job Hazard Analysis should be done for incineration, as for all vessel activities.
- Under normal conditions, safety devices such as micro switches should never be 'tricked'.
If junior officers are by-passing safety features such as micro-switches in the course of their normal duties, it is highly probable that senior officers are aware of this behaviour. This would indicate a lack of safety leadership, undermining the safety culture.

MARS 201607

Overboard fatality

Edited from official Antigua & Barbuda W.I. Department of Marine Services and Merchant Shipping Report

→ Maintenance work was taking place on deck; a risk assessment had been done followed by a hazardous work meeting after which a work permit was issued. The work permit and risk assessment clearly stated the risks at hand, namely eye injury and electrocution. All personal protective equipment required for the job was listed and also used by the crew on the job.

The weather was fair with moderate winds and sea and a swell of about one metre. As no seas were being taken on deck this danger was not assessed. The power cable for the grinders was deployed across the deck, which was about two metres above sea level. The cable was in a worn condition.

While the deck maintenance was ongoing, a wave higher than the rest hit the vessel's side and washed up on deck; sea water covered the electrical cables and power tools in use. Everyone, now standing in the water, felt a light electrical shock in the form of an uncomfortable tingle and tried to escape to a higher, dryer position. Two crew jumped up on the cargo hatch while another crew jumped onto the railing. The crew member on the railing slipped and fell over the side.

Rescue operations were initiated but the crew member was recovered deceased – he had drowned.

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Lessons learned

- A vessel with low freeboard is susceptible to ship seas on deck even in relatively fair weather.
- When running temporary electrical cables and connections, always think of possible outcomes and plan accordingly.
- Never patch or repair a worn or defective extension cord; worn electrical extension cords should always be replaced with new ones.

MARS 201608

Gangway away

➔ The pure carrier was berthed starboard side to. A pilot boarded and was in the pre-departure briefing with the Master and bridge team when it was reported that the gangway had fallen. Although the wire had been replaced in the last six months, the gearbox had failed and the gangway had crashed to the berth below. Fortunately no one was on the gangway when it failed and the incident resulted only in equipment damage and a minor delay in departure.



- Never linger unnecessarily on a gangway.
- Although gangway wires are an obvious maintenance item, gangway gearboxes and motors should be inspected annually.

MARS 201609

Ultra Low Sulphur Fuel Considerations

As edited from USCG Safety Alert 13-15

➔ Various reports have revealed that main engines may not attain the expected speed when using ultra low sulphur (ULS) fuel oil. A list of recommendations to vessel owners and operators about the importance of establishing effective fuel oil changeover procedures contains, among others, the following points:

- Ensure fuel oil switching is accomplished outside of busy traffic lanes and the Emissions Control Area (ECA);
- Consult with engine and boiler manufacturers for fuel oil changeover guidance and to determine if system modifications or additional safeguards are necessary;
- Consult fuel suppliers for proper fuel selection;
- ***The energy content of a given volume of ULS fuel oil may differ from residual fuel, therefore established throttle settings may not give the desired shaft RPM or generator loads; performance and speed trials on ULS fuel oil may need to be conducted;**
- ***As part of the Master/Pilot information exchange, discuss the vessel's manoeuvring characteristics, including any change in RPM associated with ULS fuel oil;**
- ***Determine if using ULS fuel requires amendments to the pilot card;**
- **Provide initial and periodic crew training for accomplishing safe, effective and leak-free fuel switching;**

- Anticipate that there may be many technical challenges for operators when beginning to use ULS fuel oil. These range from excessive leakages of fuel system components, increased wear and tear on these components, lack of lubricity of the fuels, and the need for possible changes in maintenance schedules, operational methods, etc.

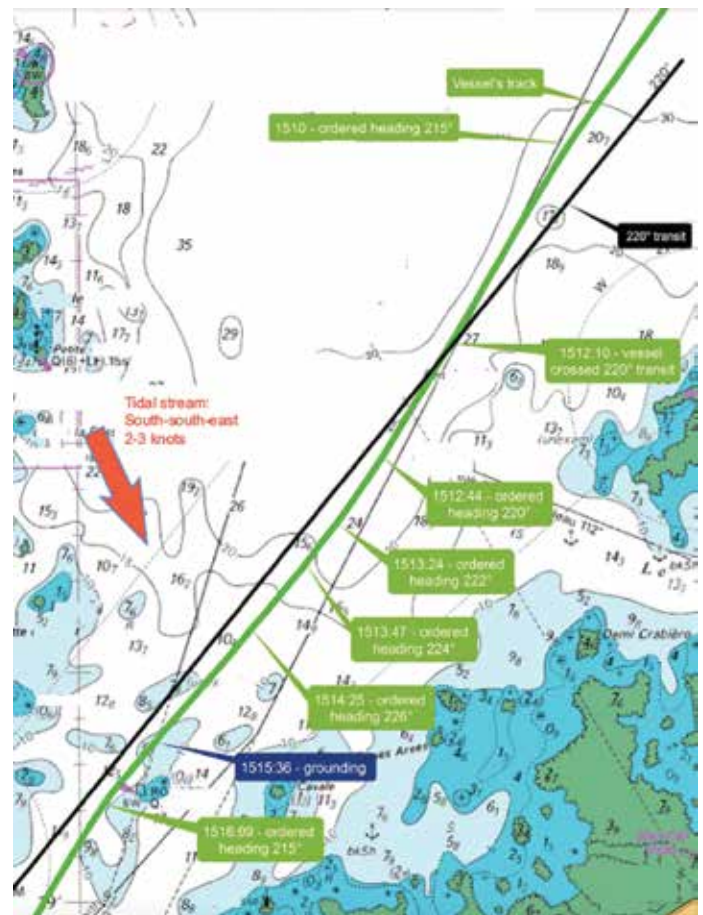
MARS 201610

Scraping the bottom

As edited from UK Marine Accident Investigation Board (MAIB) official report 18-2015

➔ A ro-ro ferry was inbound in a restricted waterway on a heading of 220° at full sea speed (18 knots OTG). The vessel was approximately one cable to starboard of the 220° transit line when the Master ordered an alteration to port to 215° in order to bring the vessel onto the 220° transit line (see figure).

Soon, the vessel crossed the transit and the Master ordered the helmsman to return to a heading of 220°. The vessel did not steady on this heading, as a further alteration to 222° was ordered. Two further alterations to starboard were made in quick succession; to 224° and then to 226°. As the Master ordered the successive alterations to starboard, the chief officer went to the centreline of the bridge to visually assess the vessel's position. While on the heading of 226°, a noisy shuddering vibration lasting about nine seconds was heard and felt throughout the vessel. The Master slowed the vessel but nothing unusual was seen astern nor were there any alarms. Steering and propulsion were also responding normally so the Master returned the vessel to full sea speed and continued the approach to the harbour.



Once berthed in port, cargo discharge, reloading and a lifeboat drill went ahead as planned. A pre-planned divers' inspection of the hull also went ahead and divers soon discovered significant bottom damage; the vessel was thereafter withdrawn from service.



Bottom damage

The investigation found, among other things, that:

- There had been insufficient passage planning for the voyage; in particular, for the transit through the restricted waterway of the port approaches. For example, the extremely low tide and effect of squat were not properly considered. This resulted in the bridge team being unaware of the limits of safe water available. Despite the bridge team's apparent good positional awareness, they headed into danger without appreciation of the risk.
- The absence of any alarm, steering and propulsion responding normally, and the Master's conviction that there had been sufficient depth of water, led to a collective denial of the possibility that the vessel might have grounded.
- The highly repetitive nature of the ferry's schedule induced a degree of planning complacency.
- The ECDIS was not utilised effectively as a navigation aid. In particular, the safety contour value was inappropriate, the cross track error alarm was ignored, and the audible alarm was disabled.
- The layout of the central bridge console prevented the chief officer from utilising the ECDIS display to support the Master during pilotage.

Lessons learned

- If you hear loud shuddering noises accompanied by vibrations throughout the ship, you should suspect you have touched bottom even if all else appears normal. Have all tanks sounded as a precaution.
- Beware of complacency – it can creep in when you are most sure of yourself.
- ECDIS is a wonderful tool if used effectively. In particular, learn how to appropriately set the safety contour and safety depth.

MARS 201611

Read my mind: Green to green

Edited from official Swedish Accident Investigation Authority report 2015-10

→ A ro-ro passenger ferry departed berth and, as usual, made a securité broadcast on VHF radio. Once underway and in the midst of a turn at



A few minutes before the close quarters situation

about 15 knots, an inbound fishing vessel was observed. The bridge team on the ferry deemed the fishing vessel to be on the wrong side of the fairway. Hence, the starboard turn was slowed and the ferry continued on the south side of the fairway to give some room for the fishing vessel; ostensibly dictating a green to green passing.

The fishing vessel's operator, who had heard the ferry's securité call, saw the ferry and instinctively turned to starboard, towards the south side of the fairway. The vessels were involved in a very close quarters situation but last minute manoeuvres avoided a collision.

The investigation found, among others, that the situation was caused by:

- Inadequate positioning of both vessels.
- Lack of communication resulting in misunderstanding of intentions.

Lessons learned

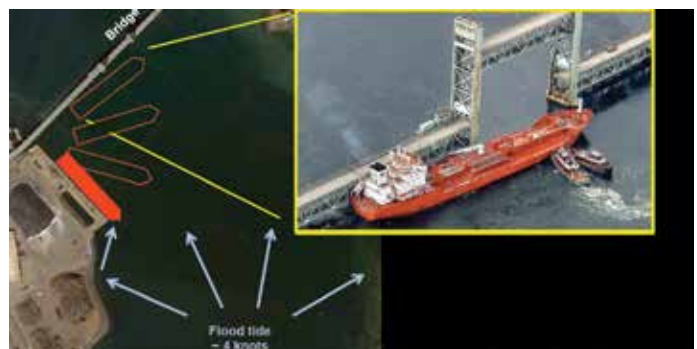
- If you intend a green to green encounter, best communicate with the other vessel to confirm their understanding of the situation.

MARS 201564

Reader's Feedback

→ Readers may recall MARS 201564, where a vessel was secured in a river berth subject to strong tidal currents. Mooring lines failed and the vessel drifted and hit a nearby bridge. One of our readers and a member of The Nautical Institute, Mr Vilas Salukhe, wrote to express the following:

'The berth allotted for bunkering the vessel may not be suitable considering the length and draft of the vessel, particularly the angle at which the head lines were leading. Also, considering the strong river current, the location of the berth at less than 100 metres distance from the bridge would benefit from a risk evaluation review.'



Some additional lessons learned from this accident could be:

For the port authorities

- Review the suitability of the berth in view of its vicinity to the seemingly unprotected commuter bridge.
- Consider vessel's draft and length before allowing the berth for bunkering operations.
- Consider using vessel's anchor for berthing to provide additional holding power.

For the vessel

- Consider keeping engines on standby when faced with high river currents and tight berthing situations.
 - Anticipate change in draft due to bunkering and suitably attend to mooring lines with sufficient manpower on deck.
- **Editor's comment:** We are always pleased to accept reader's thoughts and comments regarding reports published under the MARS banner. The more people are involved and thinking about risk reduction, the better.

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