

Seaways

The International Journal of The Nautical Institute

Soft skills

The Master/Pilot
exchange p5

A real ISM?

The debate
continues p21

Coping with piracy

The human
element p23

An inspector calls

Correcting non-
conformances p32



Making training count p9



Focus

Experiential Learning

“
Mankind has
always learnt
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”

Experiential Learning

This is a subject that we cover in various ways each month in *Seaways* and it has been a consistent output of the Institute from its inception. The terminology may have changed over the years, as has the means of acquiring such learning, with the revival of mentoring being a particular focus of ours under the current Strategic Plan, but the fundamental need remains the same. Mankind has always learnt from experience and the mark of a professional is his or her willingness to learn and adapt in this way.

There is an old saying 'Those who cannot learn from history are doomed to repeat it' which rather assumes that all of history is bad. That is clearly not the case. However, we certainly hope that members learn from the MARS reports each month and that companies make use of them in safety circulars to their fleet. More reports from individuals or SMS incident reports from companies are always welcome - and please remember that near miss (or near hit) reports are as valuable as reports of actual accidents. Similarly, learning from the knowledge and experience of others through the practical books published by the Institute is a valuable means of professional development. The latest addition to our Maritime Security series is *Coping with Piracy*, which is a subject relevant to all seafarers and their employers in these troubled times (see pp 23-24). A copy should find its way onto every ship and into every owner's or operator's office so that effective preparations are made.

The willingness to learn from experience is largely a matter of having a positive attitude to do so and this is emphasised in a number of articles this month. It is good to hear from a young 3rd Officer, Matthew Finn, really enjoying his appointment and highlighting the mentoring he is receiving from the Masters and Chief Officers in his daily work (see Mate's Column p4). He also benefits from the mentoring scheme run by the Honourable Company of Master Mariners based here in London. The outcome is clearly increasing professional confidence and pride - which is also an aim of our new periodical publication *The Navigator*. By promoting this, we are convinced that safety will be improved and the likelihood is that retention rates among sea staff will also be improved.

At the other end of the professional timeline in terms of his many years of experience, Captain George Sandberg provides a concise and very useful guide to the effective use of simulation in Bridge Resource Management (BRM) training which can be described as experiential learning in a controlled and safe environment (see pp 9-12). He covers the four stages of the learning process, highlights the dangers, and summarises the very important role of the instructor. Also on the subject of the bridge team, we have an evocatively titled piece from Dr Katherine Devitt, recently retired as a senior lecturer and researcher at Warsash Maritime Academy. 'The Deadly Sins of the Master-Pilot Relationship' (see pp 5-8) may generate some emotive correspondence but is a well balanced assessment on the basis of a limited research group, of the difficulties in achieving an effective relationship. She identifies six deadly sins, none of which are likely to be surprising to experienced navigators or pilots, but they will nevertheless act as a useful aide memoire to guard against failings in this crucial relationship.

Just by reading these articles you are engaging in experiential learning and Continuing Professional Development (CPD), and the same is true of making the ISM Code work for you. Love it or hate it, it is here to stay, so for your own peace of mind as well as the regulatory necessity, you need to ensure that it is effective. Evan Simkus, who is back at sea after some years of management positions ashore, suggests how the Code and particularly the Safety Management System (SMS) can be made to work well for you (see pp 21-22). He sets out what should be done by each entity - the authorities, companies and mariners - without taking reams of paper to do so and identifies the use of non-conformities to achieve positive change.

ISO 9001:2008 Quality Assurance

Whilst thinking of non-conformities and their beneficial uses, we are pleased to announce that the Institute has received accreditation under the ISO 9001:2008 standard after about a year of preparation. During this time the ISO procedures have been written and refined with the full engagement of all the HQ staff which has also led to the improvement of many underlying processes. 🌐



Mariners' Alerting and Reporting Scheme

MARS Report No. 251 September 2013

MARS 201351

Weather terminology rains confusion

Official report edited from MAIB 8/2013

→ A small coastal cargo vessel had been loading limestone at an exposed, tide-constrained berth when the weather, as predicted, continued to worsen. The master, after listening to the weather predictions, decided to finish loading and then put to sea. However, strong winds and large waves overwhelmed the vessel while it was manoeuvring away from the jetty, causing it to be driven onto the shore. The vessel was later declared a constructive total loss.



Although several contributing factors were at play in this casualty, one of particular interest was the Met Office's use of qualifying terms in describing the arrival of weather patterns and winds in their weather forecasts (see below). Although these terms are defined, quantitatively, in Admiralty List of Radio Signals they are not part of the international meteorological lexicon. This accident demonstrates that they have the potential to cause misunderstanding; in this case the master, a non-English mother tongue speaker, although aware that the weather was likely to deteriorate, was confused by the terminology used in UK maritime weather forecasts. He did not appreciate the meaning of the term 'imminent' and, as a consequence, did not fully comprehend how quickly the bad weather was forecast to arrive.

MET Office terms used for approaching weather systems and their corresponding meaning

| | |
|----------|--|
| Imminent | Expected within six hours of time of issue |
| Soon | Expected within six to 12 hours of time of issue |
| Later | Expected more than 12 hours from time of issue |

Lesson Learned

The official MAIB report states that it would be beneficial to make warnings about severe weather explicit and self-explanatory. Watchkeepers should not be left in doubt or need to look up definitions.

MARS 201352

Weather tightness of hatch covers

→ Even on new ships hatch covers are only truly weather tight in the static condition; weather tightness can't be guaranteed in dynamic conditions such as at sea and especially in rough weather. When water

does enter the hatch cover, by design it goes into the drain channel, through a non-return valve, and then passes on to the deck. The non-return valve ensures water can only go from the drain channel to the deck and not vice versa.

Unfortunately, inspections have revealed missing, blocked or otherwise plugged non-return valves and drain channels. Some non-return valves have even been found capped. These conditions mean that water which enters the hatch cover is not able to pass out from the hatch cover drain channel and instead goes into the hold, resulting in cargo damage.

Inspections have also revealed hatch cover rubber packing that is missing or damaged. Where repairs have been effected, they sometimes appear to have been made too localised to the damage (six to twelve inches, whereas manufacturer's instructions normally require a minimum of twenty four inches to be changed.) The ends of the repair packing should be cut at a 45 degree angle, not vertically, and the packing should be hammered from the centre towards the sides.

Another deficiency noticed during inspections is with the rubber washers of cleats. Often, these washers are either too hard (due to age) or covered by thick layer of paint which makes the rubber washer ineffective.



MARS 201353

Hatch covers and cranes

Edited from official report of the Dutch Safety Board

→ While closing the hold a hatch fell out of the hatch crane and into the hold. This then caused the hatch crane to come off its rails on the starboard side. The first mate, who was operating the hatch crane alone from the operating platform, fell approximately eight metres into the



hold; he was not wearing personal anti-fall protection (safety harness). He suffered serious injuries as a result of this fall and was admitted to hospital in a critical state

The hatch crane and hatch arrangement are similar to those in many small ocean going and inland vessels. The hatch crane rides on both sides of the hold over rails which are fitted to the hatchway coaming. The crane consists of two vertical uprights and a yoke, placed athwartships [across the width of the vessel] and fitted with hooks from which the hatches are hung during hatch movement. The hatches are fitted with attachment points, referred to as 'pockets'. There are markings on both the hatches and the hatch crane to indicate the correct position of a hooked-up hatch relative to the hooks of the hatch crane. The person who operates the crane stands on the hatch crane, either on one side or on top, and rides along with the hatch crane while the hatch is moved.



The hatch crane with hatch in hooked position

Because the hatch was being transported in a high position, not only was its centre of gravity higher than need be, but also there was little chance of it coming to rest on the hatchway coaming when it fell. The investigation also determined that the hooks of the hatch crane yoke on the starboard side did not connect to the hatch attachment points but to the rounded (outer) side of the attachment points. Contrary to the vessel's procedures, this was not checked by a second person at the time of the manoeuvre.

Since 1992, a total of 15 incidents involving hatch cranes on board Dutch flagged ships have been reported to the authorities. These have resulted in three deaths and 13 serious injuries. Investigations have revealed two categories of incidents/accidents. On the one hand, many occurrences involved

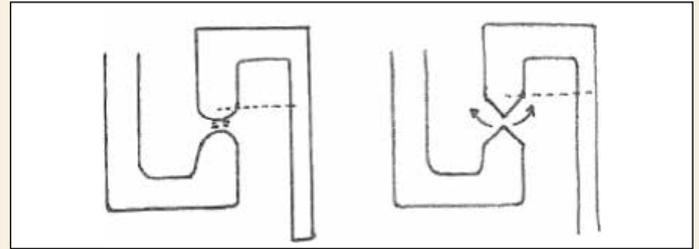


Hooks used with blunt end

contacts between the crane and people on or near the rails. On the other hand, eight other occurrences involved hatches falling out of the crane hooks, potentially causing the hatch crane to topple or shift, and then the operator to fall. Dutch authorities made a number of recommendations to limit this type of accident. They can serve as a list of lessons learned;

Recommendations

- 1 Use claws on the hatch crane which grip the rails so that the crane cannot topple or shift off the rails.
- 2 Use sharp ended hooks and pockets, so that the hook cannot lift the hatch if it is not properly connected.



- 3 Operate the hatch crane only if there is a person on each side to check whether the hooks are connected properly.
- 4 Apply markings to the hatch crane and the hatches so that it is clear whether the crane is correctly positioned in relation to the hatch.
- 5 Move the hatch crane only when the pontoon is in the lowest possible position to keep the crane's centre of gravity as low as possible.
- 6 Use 'brushes' in front of the wheels, so that fingers can be pushed away instead of becoming trapped.
- 7 The installation and maintenance of audiovisual warning signals in order to warn bystanders of the driving crane.

MARS 201354

Working at height without restraining gear

Edited from official MAIB report 25/2012

→ As part of a drill, the outboard lifeboats and tenders of a passenger ship were lowered and held alongside deck nine by their tricing pennants. The lifeboat's bowing tackles were rigged, tensioned from



the coach roof and secured to bitts welded to the bowsing tackle blocks fitted to the lifeboat lifting plates.

On the order to release the tricing pennants, the forward crewman was unable to remove the tricing pennant hook release lever pin while at the same time holding the bowsing tackle on the bitts. The overseeing officer went to assist. As the officer removed the pin and operated the release lever, the crew member stepped to one side, which caused the bowsing rope that he was holding to come free from the bitts. Without tension on the bowsing tackle, the lifeboat swung violently away from the ship's side and heeled to port. The officer and crew member, who were not wearing any form of personal restraint, slipped from the smooth coach roof and fell 22 metres into the water below. They were quickly recovered by other members of the crew. Luckily, the two men sustained only minor injuries.

Lesson learned

While other factors contributed to this accident, had the men been wearing proper fall restraint equipment they wouldn't have taken a 22 metre plunge into the harbour waters. When working where risk of falling is present, fall restraint PPE is your last line of defence.

MARS 201355

Foundering at night

Edited from official MAIB report 12/2013

→ In darkness and heavy seas, a small general cargo ship began to founder. Although a Mayday message was broadcast on VHF radio channel 16, Digital Selective Calling (DSC) was not used. The voice Mayday call was short and incomplete.

After the general alarm was sounded, the crew assembled on the bridge and donned immersion suits collected from two decks below. These were a mix of different types - some of the suits were required to be donned with lifejackets, others were not. As the vessel's freeboard reduced, the master realised that the vessel was sinking and ordered the crew to prepare to launch the liferafts. At about the same time, the second officer collected the two search and rescue transponders (SART). However, he had difficulty activating them because of the design of the gloves integral to his immersion suit (see picture below), and eventually had to use his teeth to operate them.



Less than 20 minutes after suffering a catastrophic structural failure, the vessel foundered. Two crew survived, climbing into a liferaft that had inflated after the vessel sunk beneath them. The master and five crew perished. About an hour after the vessel foundered, a rescue helicopter arrived on scene and spotted the two survivors in the liferaft, winching them to safety.

Safety Lessons

Abandoning ship in the middle of the night in rough seas is a situation no seafarer wants to experience. Unfortunately, many do, and although SOLAS requirements place a great deal of emphasis on the importance of life saving appliances (LSA) and abandon ship drills, tragically lives continue to be lost. To improve the likelihood of all crew surviving should the need to abandon ship arise, vessel owners, managers and crews are strongly advised to take into account the lessons to be learned from this accident. In particular:

- The importance of ensuring that all crew are fully briefed on mustering procedures and that they are able to properly don the immersion suits and lifejackets available through regular and realistic abandon ship drills.
- The benefits of transmitting distress messages in the recommended and internationally recognised format. This can quickly and accurately be achieved via digital selective calling (DSC), but in situations in which the use of voice procedures is preferred, a simple aide-mémoire, showing the format and information required, is a straightforward and cost-free option.
- Having several different types of immersion suit and lifejackets on board is potentially confusing and increases the risk of the equipment either being donned incorrectly or not quickly enough. It is commonsense that all of the immersion suits provided on board a vessel should be of the same type; i.e. either they all have in-built buoyancy, or they all need to be worn with a compatible lifejacket, but not a mix of the two designs. Even in large fleets that carry many types of suits and lifejackets, this can usually be arranged through good planning.
- The provision of life saving apparatus (LSA) should be goal-based and holistic in order to ensure that the components are compatible and that the 'system' is fit for purpose. The compatibility of individual items of equipment cannot be taken for granted, even where the LSA provided meets the required performance standards.

MARS 201356

Vessel strikes island

→ Recently we handled a damaged vessel which had a head on collision with a small unlit island during the night. The vessel's course line passed directly over this small island, a fact that was overlooked by the navigation team. Point to note is that the vessel was using a chart with no colour tints. In modern charts, shallow patches are more easily visible due to the use of contrasting colours, as recommended in the current chart specifications of the International Hydrographic Organization.

All officers must check the sounding for 10-20 miles on each side of the course track in their watch and be aware of any other dangers. Besides this, the officer who prepares the courses must check the soundings for all the charts and mark the dangers very clearly on the chart.

■ **Editor's Note:** When establishing and especially when checking the vessel's passage plan, charts of the largest scale should always be used. Small unlit islands can be anywhere and a course drawn across seemingly empty ocean on small scale charts is just the formula for a grounding that could have easily been avoided. Of course, keeping a sharp lookout is also a watchkeeping task that may have helped avoid this accident.

FEEDBACK TO MARS 201324

Improper footing caused ankle injury

→ I read with interest report number 201324, where an improper footing caused an ankle injury. There was no mention of the footwear worn for the task. Slip resistance of the soles of boots varies significantly, so it would be possible to wear boots that provide greater slip resistance.

We use a human subject based ramp test derived from DIN51130 to test the slipperiness of footwear which provides a very good comparison of the slip resistance with bespoke combinations of surface and contaminant. There has also been some work done in the off-shore oil sector showing that use of laced ankle boots can reduce the severity of ankle injuries when a mis-step does occur.

case the Master added shackles and in addition, dropped the second anchor to prevent excessive anticipated yawing.

It is well-known that vessels with high windage are prone to suffer from excessive yawing, due to their unusual shape. As such, there is no better remedy than weighing the anchor and leaving the anchorage area for cruising until the weather abates. When done in ample time and beforehand, this is considered good seamanship. It would be unwise to let bad weather control your actions if this can be avoided with prudence.

FEEDBACK TO MARS 201323

Windlass damage when weighing anchor in gale force winds

→ A prudent Master facing a gale approaching within 3 hours and having in mind that his vessel is not well prepared for such a condition due to her excessive windage would have done better to think of weighing anchor whilst the weather is still reasonable. Instead, in this

MARS REPORT NUMBER CORRECTIONS

→ In the June edition of *Seaways*, the MARS report numbering was incorrectly published. Please find the correct correlation below. The on-line data base remains correct.

| Published No. | Correct No |
|---------------|------------|
| 2013 25 | 2013 31 |
| 2013 26 | 2013 32 |
| 2013 27 | 2013 33 |
| 2013 28 | 2013 34 |
| 2013 29 | 2013 35 |
| 2013 30 | 2013 36 |
| 2013 31 | 2013 37 |

MARS: You can make a difference.

You can save a life, prevent injury and contribute to a more effective shipping community.

Everyone makes mistakes or has – or sees – near misses. By contributing reports to MARS, you can help others learn from your experiences. Reports concerning navigation, cargo, engineering, ISM management, mooring, leadership, design, training or any other aspect of operations are welcome, as are alerts and reports even when there has been no incident. The freely accessible database (<http://www.nautinst.org/mars/>) is fully searchable and can be used by the entire shipping community as a very effective risk assessment, loss prevention and work planning tool and also as a training aid.

Reports will be carefully edited to preserve confidentiality or will remain unpublished if this is not possible.

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