

Seaways

The International Journal of The Nautical Institute

Deliberate calm

Reacting in an emergency **p04**

Accident investigation

Are we looking for the wrong things? **p14**

Bridge alarms

Useful aid or dangerous distraction? **p21**

IRPCS in a nutshell

Colregs knowledge needs refreshing **p28**



Simulation: upping the game

Making assessment count **p 6-10**



Focus

Calm Response

“What can the mariner do to develop calmness and be an effective leader? Gaining professional knowledge and experience is the key to building confidence in handling situations.”

Most, if not all, of the time, it is more effective to respond calmly to challenging situations. This does not imply a lack of urgency in addressing a situation, as amply demonstrated by the three examples Captain George Livingstone uses to illustrate his point in our Pilot's Column this month (see p 4). Remaining calm under duress is a necessary skill that professional seafarers in particular need to develop as it is in the nature of the job that the elements, among other things, will put them in challenging situations. It is also a sad fact of modern shipping practices that they may well be put under duress in port by the march of officials and surveyors up the gangway as soon as the ship docks, all claiming attention at once, as discussed in the Solent Branch report on p 32. Hopefully, the latter will not be life threatening – but the working of the ship at sea and during cargo operations in port certainly can be, as many MARS reports over the years have shown. It is in these situations that calmness is indeed needed, but can it be learned, or is it an intrinsic capability that could be tested for in selection processes? To an extent, this question is similar to the one we were asked back in 2003 when we were promoting the need for leadership training standards. Some maintained that leadership could not be taught – the 'born leader' school of thought. Babies are indeed naturally demanding, but have a lot of development to do to become leaders and learning calmness is certainly one of them.

So what can the mariner do to develop calmness and be an effective leader? Gaining professional knowledge and experience is the key to building confidence in handling situations. A good place to start for those members and readers serving at sea or training for the seafaring career, is acquiring a thorough knowledge of the Colregs and gaining experience in their correct application. Captain Yaswant Chhabra has been conducting research and training workshops on this subject and his results are cause for substantial concern (see p 28 and Philippines Conference report p 29). High percentages of officers are displaying dangerous decision making. John Third's rough guide to collision avoidance (see pp 24-25) in our new book 'Navigational Accidents and Their Causes' will help to address the knowledge gaps but applying the rules needs practise.

Gaining experience

Gaining this experience in a safe environment is of course difficult at sea and some situations will be encountered rarely. That is where simulators come into their own and provide the required training environment where mistakes can be made and learnt from without other consequences. In one form or another, they have been in use for many years and are of course becoming ever more sophisticated and technically capable, as are the bridge and engine room systems they simulate. However, it is only relatively recently that their use in assessment and evaluation has started to develop beyond the exercise debriefing session. Jillian Carson Jackson makes the point that skill is needed in using simulators to assess just as it is needed to use them to effectively teach (see pp 6-7). On a similar theme, Transas explains their development of automated scenario-based assessment tools (see pp 8-10) to help with the objective part of training assessments, while accepting that the subjective assessment of soft skills is also still required.

Sounding the alarm

Clearly these articles are dealing with the usual bridge and engine room simulators geared to training the core professional skills. However, they can also be designed to simulate emergency situations, and it is worth asking whether the industry is making sufficient use of technology for this purpose. Take for example the problem of multiple alarms on the bridge all going off at the same time and the difficulty of stopping them (see pp 21-22). The disorienting effect on the bridge team or lone OOW can be devastating – and usually is. Would it not be good to put the designers of these systems in that situation in a simulator to make them understand their effect and generate improved designs? Training for emergency response is vital (see pp 12-13) and is all too often unrealistic and barely adequate to even tick the regulatory box. Naval personnel devote considerable, regular effort and expertise to such training on board as well as in simulation facilities ashore, because they know they may face a war situation. Commercial shipping may not face the same risks but emergencies do happen and practising coping with them will help to build that confidence and calm to see you through.



p8



p17



p30



p36



Mariners' Alerting and Reporting Scheme

MARS Report No. 275 September 2015

MARS 201548

Haphazard storage creates fire hazard

→ An oil/chemical tanker was berthed at a shipyard for routine dry docking. Prior to entering dry dock, seven pallets of paints and thinners for coating the cargo tanks were received on board from the shipyard. These were stowed on the starboard side of 'A' deck, between the engine room casing and the accommodation. The products were stored on wooden pallets covered with plastic wrapping, with the thinner cans stored on top of the paint cans in cardboard packages.

About seven days later, at lunch break, a fire broke out among the paint and thinner cans. The fire alarm was sounded and the Master ordered ship staff to assemble on the quay side. All appropriate authorities were informed immediately. Simultaneously, shipyard firemen were preparing the hoses to fight the fire. Within an hour the fire was totally extinguished but boundary cooling was continued for some time afterwards.



Although two separate investigations failed to determine the origin of the fire, it was suggested that the paint and/or thinner cans may have leaked due to expansion and contraction resulting from exposure to the elements. Vapour escaping from the cans was then contained within the plastic wrapping and the fire may have been caused due to spontaneous combustion. The pallets were stowed in direct sunlight and ambient temperature on the day of the incident was 25°C.

The investigation found no evidence of smoking in the area (which was prohibited). There was no hot work done in the vicinity nor were incompatible items stored nearby.

Lessons learned

- In future dockings, managers/Master shall not permit shipyard to store bulk quantity of paint and thinners onboard the ship. Shipyard shall be instructed to bring onboard sufficient paint drums for the day's work.
- Store paints and thinners in their original container, protected from direct sunlight in dry, cool and well ventilated space, away from incompatible materials.

MARS 201549

Minor spill reported

→ A laden tanker encountered heavy weather during the Pacific Ocean passage. Pre-arrival checks of the discharge ports were completed including pressure testing of all three cargo lines.

Once arrived at the lightering area, the lightering vessel was berthed alongside the tanker and the cargo hoses connected. At one point during cargo transfer operations, drops of oil were seen leaking from the dresser coupling of number two cargo line. Cargo operations were stopped and clean-up operations carried out. Oil was contained in a catch-all below the dresser coupling area (total quantity spilled was less than one litre). The dresser coupling from the leaking area was tightened and the cargo line was isolated and drained. The discharging operation continued with the two remaining lines without any further incident.

After investigation, the company suspected that isolated flexing of the dresser coupling may have occurred during the heavy weather passage. This was not apparent during testing. A hazard occurrence report was produced as per the company's SMS requirements and closed out by management. An oil spill drill was carried out including simulation of reporting procedures to all parties concerned.

■ **Editor's note:** Even though the spill was very minor, the company reporting procedure was activated and all parties were informed – even MARS! This is a sign that the company's safety culture is alive and well. MARS needs your reports too – let us know what happens so others can learn the same lessons you learned.

MARS 201550

Don't be drawn in by a drawstring

Edited from International Marine Contractors Association (IMCA) Safety Flash 04-15

→ On an offshore platform, a construction team were fitting pipe supports; part of this task involved drilling holes through the deck plate with a magnetic drill. Owing to the poor weather conditions, the crew were wearing parka-style storm jackets with a draw string closure.

At one point, the draw string and toggle on one worker's clothing was observed to be hanging close to the revolving spindle of the magnetic drill. One of the work party members noticed this unsafe condition and realised there was potential for the drawstring to be drawn into the tool causing injury to the operator. He immediately stopped the job and the hazard was highlighted and corrected. The entire work party removed the drawstrings from their jackets and the hazard and intervention was shared with the rest of the crew. The intervention was further discussed at start of shift meetings. It was apparent that these lanyards could and had become snagged when climbing ladders and had got caught



Dangling lanyards pose a potential snagging hazard

on plant and equipment etc. It was agreed that the drawstrings were impractical as their use on this type of jacket would restrict both leg movement and body positioning.

MARS 201551

Incinerator ends sea career

→ The second engineer distributed the day's work to the engine room staff, verbally instructing the junior wiper to burn the garbage in the incinerator. He was familiar with the job, having done the task for the last seven months. A little while later, the fourth engineer went up to the incinerator room to check the safety parameters of the equipment. He found all systems in satisfactory condition and so he returned to the control room. The junior wiper was standing outside the incinerator room waiting for the combustion temperature to reduce prior to loading the second garbage pack.

About 30 minutes later the junior wiper rushed to the Master's office; he had sustained very deep burns to his left palm. The vessel was diverted to an anchorage and the junior wiper disembarked for medical treatment. All five fingers of his left hand were badly burnt and after assessment by doctors, four fingers were amputated. The junior wiper had to return to his home country for further reconstructive treatment. To all intents and purposes, his seagoing career was over.

The company conducted an investigation and found the following:

It appears the junior wiper, because of his small stature, had always used a bench to better access the incinerator door. Also, in this case he may have tried to push an oversized garbage bag down the incinerator sluice with a long handled poker. To do this, the junior wiper had to hold down the incinerator door micro switch (to simulate a closed door) and press 'start sluice action', all while trying to push the bag down.

Lessons learned

- 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'.

■ **Editor's note:** According to the company, ship's personnel interviewed during the investigation indicated that the use of a bench to access the incinerator was not a safe practice. Yet this practice had been tolerated for many months and was never identified as a non-conformity or unsafe practice during the course of work or during safety meetings. This indicates some important latent unsafe conditions contributing to this accident: a less than adequate safety culture and poor safety leadership.

MARS 201552

Small slip with unfortunate consequences

An oiler was on his usual rounds when the internal telephone system sounded. He quickly proceeded towards the engine control room to answer the call. As he stepped on the insulation mat in front of the main air compressor breaker panel, the mat slipped under his foot and he fell. After examination it was determined that his shoulder had become dislocated.

The company investigated the incident and has since removed the mat from service as the underside was worn and not gripping properly. All other mats have been checked for their grip and wear.



■ **Editor's note:** A very mundane accident that brings to light hazards that are right under our nose. Although the oiler should not have been so hasty in his movements, the mat was still inadequate for service. This teaches us that we should always have our 'safety eyes' on – being continuously on the lookout for hazards in plain view. Readers may remember a similar case of 'hazards in plain view' – the steel plates from MARS report 201423. Readers can view all past MARS reports on-line at: <http://www.nautinst.org/en/forums/mars/search-all-mars-reports.cfm>

MARS 201553

Fall protection device improperly attached

Edited from Marine Safety Forum – Safety Flash 15-12

→ The starboard side lifeboat was being hoisted back on board after being deployed. As it reached the upper deck, it was noticed that the Fall Protection Device (FPD) was not properly secured; it was only attached to the davit lifting lug without passing through the lifeboat check release mechanism.

Lessons learned

- Attention to detail when attaching a FPD is critical.
- Crew should be properly trained in FPD procedures and refresher training given regularly.



MARS 201554

Steam cleaning and flammable atmosphere don't mix

Edited from IMO sub-committee III 1/WP.3

→ A chemical tanker in ballast was en route and the crew were preparing the tanks for loading. The crew had just completed washing of one of the tanks, which had previously carried benzene. The next steps were to strip the tank, ventilate it for a few hours, and then carry out tests to determine the cleanliness of the tank.

A crew member decided to carry out steam cleaning before ventilating the tank. A steam hose was inserted into the tank, steam pressure was increased and a cargo pump was started to remove any water collecting in the tank. A few minutes later there was an explosion and fire. Unable to contain the fire, the crew abandoned ship and were later rescued. However, one crew member went missing and was presumed deceased.

The investigation found that the explosion was the result of the ignition of the tank atmosphere, which contained benzene gas that was within the flammable limit. The source of the ignition was most likely an electrostatic discharge from the end of the steam hose coming into contact with the tank side or other structure. The steaming of the tank, which was performed immediately after washing and before ventilation, also likely gave rise to an electrostatically charged mist.

Lessons learned

- Prior to tank cleaning, a pre-cleaning meeting should be held to ensure that crew members understand their duties and the proper procedures to be followed. Any deviation from the procedures must be reported immediately.
- After carrying a flammable cargo, always assume that the atmosphere within a tank is flammable.
- Be aware of the extreme danger of using steam injection to clean flammable cargo tanks due to the risk of static electricity.
- Benzene is a significant fire and explosion hazard based on its physical properties, including its flash point, vapour pressure, and boiling point. It can quite readily form explosive mixtures in air as a result of its high vapour pressure. Preventive measures against the accumulation of static electricity should always be employed.



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