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Seaways

The International Journal of The Nautical Institute

A Pilot's Perspective

Communication and challenge on the bridge p4

The Nautical Institute

Making reporting happen

Seeking ambassadors to promote the reporting of accidents and hazardous incidents

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Recently, the CHIRP Director (Maritime) and the Editor of MARS have shared the same concern at the decline in the number of reports they receive. They are keen to reverse this trend and have considered various ways to address the concern. As a result of this review, there is now an opportunity for members of The Nautical Institute to support both programmes through an international network of voluntary Ambassadors. The Ambassadors' role will be to promote CHIRP Maritime and MARS to mariners in their local area or region, and to encourage the submission of reports and to share the learning from accidents, incidents and near-misses.

Briefing material and coaching will be provided to each of the Ambassadors. They will not be involved with the writing of individual reports; these will still need to be sent by each reporter to the CHIRP office at Farnborough (UK) and/or MARS as appropriate and dealt with in strict confidence. Nothing inhibits a report appearing in both publications if appropriate.

What's the difference?

There is often some confusion over the different roles of The Nautical Institute's MARS scheme and CHIRP Maritime. This is not surprising as they each have similar characteristics, but they serve different and complementary roles. CHIRP Maritime is an independent, confidential reporting system that allows pro-active follow-up and investigation of individual safety issues which otherwise have not been reported to ship managers or the authorities. By contrast, the primary purpose of MARS is to identify lessons learned from near-miss and recent incident reports and relay these to mariners at sea and ashore through the *Seaways* magazine and the searchable MARS website. Like CHIRP, the reports are confidential. While both the CHIRP *Maritime Feedback* publication and the MARS reports enable the promulgation of lessons learned throughout the maritime community, MARS does not provide follow-up to individual reports through investigation.

Both CHIRP and MARS accept reports of hazardous incidents, as well as those where an accident took place. A hazardous incident is any event, other than an accident, associated with the operation of a ship that involves circumstances indicating that an accident nearly occurs. It is often referred to as a 'near-miss'.

The CHIRP process

The CHIRP Director (Maritime) validates each report on receipt. Anonymous reports are not normally acted upon, as they cannot be validated. Throughout the process CHIRP makes every effort to maintain the confidentiality of the reporter. Just as in the MARS programme, CHIRP does not seek to apportion blame to any company or individual(s).

Only de-personalised data is used in discussions with third party organisations, thereby protecting the identity of the reporter. This same data is presented to the Maritime Advisory Board of representative industry organisations for their discussion. They make recommendations on the report findings and give advice on whether there is benefit in sharing the results of the report in the *Maritime FEEDBACK* publication. The final results are fed back to the reporter. On completion of the investigation, all personal details are removed from all files. Only key information is retained in order to establish technical or systemic trends or root causes linked with Human Element behaviours. This information can be made available to safety systems and professional bodies.

CHIRP does not intend to undermine onboard safety management systems (SMS), but even where these are well established, there are many hazardous occurrences that go unreported, particularly when interfacing with third parties such as bunkering, onboard contractors, dry docking, etc. The CHIRP investigation will help all parties to develop a common understanding of the level of potential risk(s) involved and the lessons learned from the hazardous occurrence. CHIRP investigations are available at www.chirp.co.uk

> "'I must do something' is much more powerful than saying 'something must be done'."

The MARS process

Similarly to CHIRP, the MARS Editor evaluates each report sent to the special MARS email address, mars@nautinst.org. Also like CHIRP, MARS accepts reports from identifiable individuals or organisations so that validation is possible, while remaining a confidential system.

The MARS Editor will ensure published reports remain anonymous and that the selected incidents provide valuable lessons learned. Some contributors have, in the past, submitted reports about legal or commercial pitfalls but these are usually not published as they do not fall under the banner of safety. Once the monthly selection of reports has been edited for style and form they are sent to the *Seaways* Editor. In addition, all published MARS reports are entered into a database that is accessible to anyone with Internet access at http://www.nautinst.org/en/forums/mars/mars-official-reports.cfm. The database is searchable by keyword, allowing users to easily identify reports on a particular topic.

Just as a strong safety culture should form the nucleus of an organisation's approach to managing risks, so too must a robust reporting culture be the glue that helps bind the other elements together to form a systemic approach to reducing risks to levels that are as low as reasonably practicable (see 'Creating a Reporting Culture,' *Seaways* April 2013). Both CHIRP and MARS are active players in this reporting culture. We need your help so that the marine community becomes ever safer for all involved – consider getting involved as an ambassador, and send us your reports!

Mariners' Alerting and Reporting Scheme

MARS Report No. 256 February 2014

MARS 201407

Tug 1 – Fairlead 0

➔ The vessel was approaching the berth under the pilotage. One tug boat was made fast on the starboard shoulder, forward of another tug boat that was already made fast through the Panama fairlead on the starboard quarter. For the docking, it was necessary for the vessel to swing, head into the wind, and back to dock port side to berth. Recorded winds were Southerly 21-27 knots and the main engines were stopped.

The pilot instructed the tug boat that was made fast through the Panama fairlead to square up and pull. The tug boat did pull the ship, but not as per the pilot's instructions, causing the Panama chock on the starboard quarter to be uprooted. The vessel's forward and aft mooring fittings had an indicated safe working load (SWL) of 45 MT and those of the main deck 24 MT. The maximum bollard pull of the tug boat was 60 MT.

The incident caused considerable damage, with the Panama fairlead detached from the deck plating, an air vent pipe detached from deck mounting, the accommodation stay side frame and plating buckled, the poop deck plate buckled in way of sheared Panama fairlead, internal transverse bulkhead and one bracket buckled, side shell plating bent at the upper edge and adjacent guard rails on the starboard poop deck damaged.

Root causes

1. Failure to follow instructions: The tug boat Master did not follow pilot's instructions.
2. Incorrect use of equipment: Rendering capacity of the tug rope used for the pull up was much higher than the SWL of the fairlead.
3. Adverse sea/weather conditions: Weather was bad, sea was rough, and wind was brisk. The incident also took place during night hours. The bad weather may have contributed to incorrect handling of the vessel.
4. Inadequate supervision. Since the tug boat was using a line with strength considerably higher than the SWL of the deck fittings, the officer on deck should have alerted the Master.

Corrective actions

All vessels in the fleet advised to undertake a risk assessment specifically for mooring operations with tug assistance and use the lessons learned from this incident.

■ **Editor's note:** Although not common, mooring equipment damage of this nature does occur with a frequency that may surprise some. Powerful tugs can exert extreme forces on a vessel's gear. In this case the fairlead came through the incident without any apparent deformation even though it tore loose from the deck; a testament to its indicated SWL. However, its attachment to the deck may have been less than the rated SWL and may be an area for further investigation.

MARS 201408

Lost anchor a mystery

➔ The starboard anchor was weighed and the vessel proceeded to berth. The starboard anchor was again used during berthing along with the mooring lines as per the port procedures, and six shackles were deployed in 25 metres of water. The next day, after discharging a parcel of cargo, the vessel was departing the port; the anchor was to be weighed after letting go the lines.

As the starboard anchor broke the surface of the water the officer on duty informed the wheelhouse that the flukes and crown of the anchor were missing.

Root cause

This could be due to a latent defect, as such an occurrence is unusual under normal usage. Even under excessive load conditions, the D Shackle on the chain, which is the weaker link, should break first. This indicates a probable casting defect which has surfaced after three years of use.

■ **Editor's note:** Although it is difficult to appreciate a lesson learned here, casting defects do occur from time to time. It is prudent practice when in drydock to carefully examine all ground tackle for defects. But even a thorough visual examination can miss a casting defect which is hidden within the gear. Some inspectors use a hammer test that may reveal casting problems or other defects.

MARS 201409

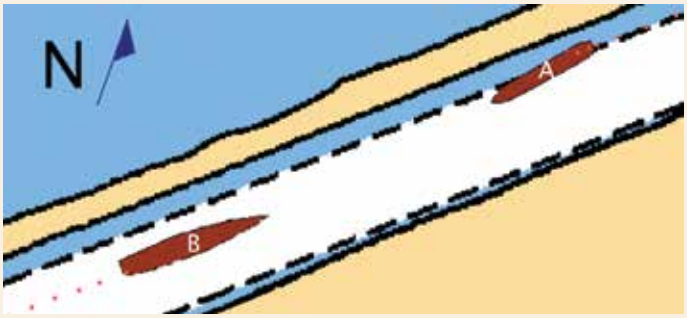
BRM misconnect triggers collision

Edited from Canadian Transport Safety Board report M05C0033

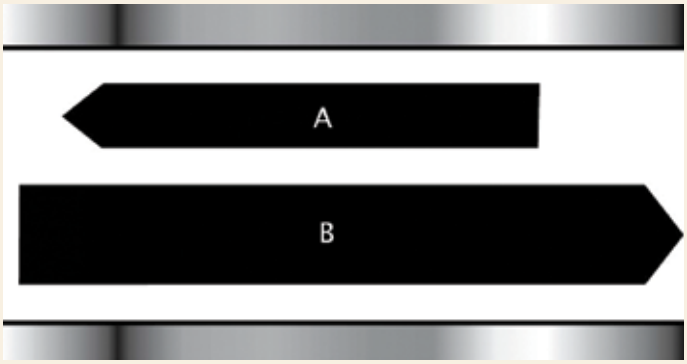
➔ In darkness, two vessels under pilotage were approaching each other in a very restricted canal. Shortly after rounding the bend in the canal, the vessels came into view of one another. It appeared to the pilot of vessel A that vessel B was slightly crowding the north side of the channel. Accordingly, he decided to give a little more room for the meeting to take place by moving closer to the north bank. The pilot did not communicate his intentions to either the pilot of the other vessel nor to the navigation personnel of his ship. When satisfied with the vessel's position in the channel, he asked the helmsman to steer 248° gyro (G). The helmsman complied but found that the vessel needed regular inputs of 5° to 10° starboard helm in order to maintain the heading. The OOW was standing by the helmsman, verifying his actions.

For the next few minutes, more than 10° starboard helm was applied to maintain the heading on vessel A. Thereafter, 20° to 30° starboard helm was necessary to steer the desired course and, as the vessel had a flap type rudder, the helmsman was able to keep the required course of 248°. During this time, the pilot reportedly glanced at the rudder angle indicator from time to time, but there was no exchange of information among bridge team members. During this time the pilot gradually reduced the propeller pitch to slow the vessel down before the meeting. Since completing the bend at 7.6 knots, vessel A was now making 5.7 knots.

There is conflicting information with respect to the helm orders given next on vessel A. The navigation personnel maintain that the pilot ordered the helm amidships, whereas the pilot does not recollect this order. The helm was nonetheless put to midships and the vessel immediately started to sheer to port. Full starboard helm was then applied, but the vessel's heading continued to swing to port. The two vessels collided near mid-channel at a combined speed of approximately 6 knots.



As the vessels close, vessel A experiences bank suction



Ideal meeting, vessels and canal to scale

Some of the findings of the report were as follows:

- The bank suction effect on vessel A became progressively more pronounced, requiring increasing starboard helm; placing the helm amidships caused the vessel to sheer to port.
- There was no relevant communication between the pilots of the two vessels throughout the developing situation.
- Ineffective Bridge Resource Management (BRM) aboard vessel A resulted in critical information not being shared with the pilot, thus precluding timely action.

■ **Editor's note:** Much time and effort has been expended in the past 20 years on providing BRM training for pilots and officers. However, year after year accidents continue to happen due to poor BRM – poor communication. 'Thinking out loud' is one technique that allows the free flow of information and allows other team members to comprehend the action. In this instance, had the pilot said 'I'm coming to the north side of the channel to allow more room for the meeting', the officer may have been more attuned to the bank suction. Additionally, coming from the officer or helmsman, 'Mr Pilot, we now need 20 degrees starboard rudder to maintain the course' would have alerted the pilot to the bank suction in a timely manner.

MARS 201410

Windlass failure

➔ While heaving up the port anchor in an area with strong current, the anchor appeared to be fouled; then suddenly the chain began to run out, causing the windlass to fail. Three shackles slipped away before the brake was tightened sufficiently to stop the chain outflow.

Several hours were required to effect temporary repairs to the windlass before the port anchor could be recovered. Permanent repairs required the replacement of the main shaft, studs and claw coupling among others.

Windlass after accident

Windlass after repair

Lessons learned

The limitations of the vessel's anchor and mooring equipment are of paramount importance. Whenever the anchor is recovered in a fouled position, the first action should be to engage the chain stopper, tighten the windlass brake and disengage the windlass gear immediately before any other course of action.

In this instance there was no procedure for heaving up anchor in a fouled condition and related risks were not analysed. In light of this experience, a procedure will be established whereby attempts to clear a fouled anchor should be made by letting go the brake and manoeuvring until the anchor is cleared. If this should fail after several attempts, an alternative solution to release the anchor that is easy and safe should be devised to save the windlass from being damaged.

Although it was not an issue in this instance, catastrophic failure of the windlass poses a risk of injury from flying debris. Where possible, personnel should avoid standing in line with the motor and should make use of the remote control system, if fitted.

■ **Editor's note:** If a fouled anchor cannot be cleared after several attempts as outlined above, there may be no choice but to cut the chain and have the gear recovered (or not, depending on costs) by alternative means. There is no need to endanger life and limb and put the ship's equipment at risk for an anchor that can be recovered safely through other means.

MARS 201411

One small step – one broken foot

➔ Some crew were in engaged in moving a washing machine from a barge to the tug. The washing machine was positioned on the port side stern of the barge and the tug stores crane was being used to move the washing machine to the deck of the tug. One crew member was on the controls of the crane while the other two were on the barge securing the washing machine to the crane lifting hook. Once the washing machine was rigged, one crew member headed back down to the tug to help land the load on the deck of the vessel.

He first descended the pigeon holes in the barge to a platform with a ladder approximately 1.5 metres off the deck of the tug. He later stated that there was no rush to get down and that he was taking his time. While stepping down from the platform his right foot slipped on approximately the third step of the platform. He then fell feet first to the deck, and was later diagnosed with broken bones in his right foot.

As part of the investigation the following items were looked at:

- The platform, steps, and tug deck were found to be in good condition, clean and dry.
- Decks on the barge were checked for moisture that might have coated the tread of the work boots – no moisture or slick surfaces found.
- The crew member was wearing all the required PPE including work boots, FRC, hard hat and safety glasses.
- The crew member's rest hours were checked (from the incident to 96 hours prior) and he was compliant for this period of time.

Corrective action:

Masters to hold a safety stand down with their crew to advise them of this injury and generally heighten awareness. Also, crew are to review safety requirements when transiting the notch.

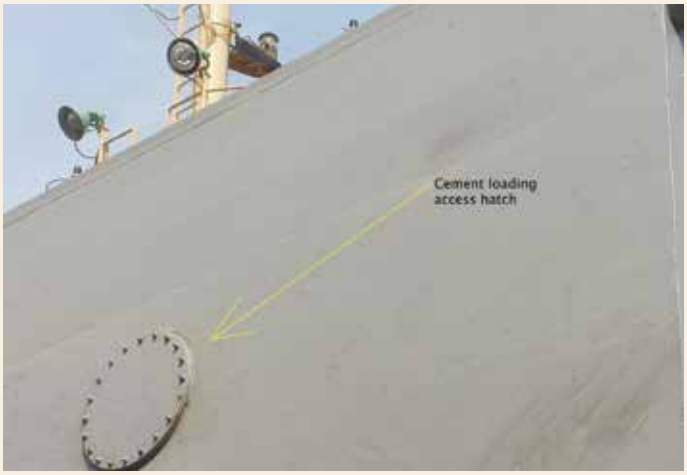
■ **Editor's note:** There do not appear to be any unsafe conditions associated with this seemingly innocuous incident. However, it is a good example of how even a fall of less than two metres, in the best of conditions, can have serious consequences. It can be used as an example to sharpen crew awareness and reduce complacency when undertaking mundane or routine tasks at any height.

MARS 201412

Access hatches need attention too

➔ My vessel was en route to Norway to load cement in bulk through a chute. The cement was to be loaded through the cement access hatch on the main hatch covers. I had joined the vessel two weeks previous as chief officer and found that the cement holes were frozen due to lack of maintenance. A fitter and the deck crew worked many long hours for two days to open the frozen manholes and there was much stress due to this unforeseen complication.

I think many ship staff nowadays are unaware of the purpose of these openings, hence this report. The fatigue/stress/panic of such an event can be easily avoided by doing annual maintenance of these openings, which takes only about 45 minutes; that is opening, cleaning, greasing and boxing back. Some bulk carriers also have ullage ports on top of the hatch covers of ballast holds and the same applies there as well.



Visit www.nautinst.org/MARS for online database

READER'S COMMENT: RE: MARS 201372

Loss of anchor

➔ In my opinion the conclusions drawn need to be reviewed. The function of the chain chopper, whether of the tongue type or the guillotine type, serves to stop the chain as its name implies. This stopper is to be used when the vessel rides on the anchor. When anchored, the stopper is dropped on the chain and the locking pin is put in place. When the wind force increases, the stopper transfers the force on the chain to the vessel's hull. This force is not absorbed by the brake or the gear of the windlass. When the vessel is at sea, the anchor should be housed tight against the hull with a minimum of three points of contact between the anchor shank, flukes and the vessel's hull. The anchor should then be secured with a devil's claw (a two-pronged hook with threaded spindle and wheel) and /or a lashing wire and a turnbuckle that tensions the anchor chain up against the hull. The chain stopper does not play any part in securing the anchor tight against the hull, as it doesn't produce any upward tension in the chain to secure the anchor. The loss of the anchor cited in this MARS report could be due to improper contact between the anchor and the hull of the vessel which can work the anchor loose in rough weather.

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Become a MARS ambassador!

See article opposite and contact MARS at mars@nautinst.org and/or CHIRP at john.rose@chirp.co.uk

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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