



ECDIS: the underlying value of quality training

The timetable for mandatory implementation of ECDIS is advancing. The first deadlines for mandatory ECDIS carriage have passed – passenger ships of 500 gt and upwards, tankers of 3,000 gt and dry cargo ships of 10,000 gt and upwards constructed on or after 1 July 2012. The next phase-in will be in 2014 for existing passenger ships of 500 gt and over.



Nevertheless, for Owners of other classes of existing ships, implementation plans are already well advanced or complete to the extent that ECDIS is already adopted as the primary voyage planning and monitoring system. Industry-wide initiatives have also progressed to address legal, procedural, technical and human resource issues that will arise with the development of this new facet of e-navigation.

One such issue is the potential risks involved in replacing more traditional means of voyage planning and monitoring with advanced technology. Ineffective use of any electronic navigational aid can lead to marine accidents. A causative factor in a number of recent grounding accidents is the incorrect operation of ECDIS. Industry-wide accident investigation

reports have highlighted a number of ECDIS-assisted grounding incidents, identifying deficiencies in the level of training and a lack of understanding as contributory factors, where ECDIS is used as the primary planning and monitoring system on-board.

In one such investigation, the UK Marine Accident Investigation Branch (<http://www.maib.gov.uk>- Report No. 2/12) reported that a laden bulk carrier grounded in restricted coastal waters causing structural damage. ECDIS was the primary monitoring system. All officers had undertaken generic ECDIS training, but not "equipment specific" training for the ECDIS type onboard. The duty officer made premature course alterations to avoid a risk of collision, but failed to effectively monitor the ship's position and track on the ECDIS, also failing to notice the activation of the visual grounding warning alarm. The ship's draft was 10.6m, but the safety contour was set inadequately at 10.0m. The bridge management team was unaware that the anti-grounding audible alarm had been disconnected. The location of the ECDIS unit on the bridge was not conducive to an effective operation.

As well as the importance of proper equipment design, where ideally the ECDIS / user interface should be as

user-friendly as possible, it is essential that the navigator is not only effectively trained in the proper use of ECDIS, but also understands the limitations of the equipment and its primary role as a decision support system.

Primarily, the statutory requirements for ECDIS training are covered in the STCW Convention, the ISM Code and SOLAS Chapter 5. The IMO ECDIS Model Course 1.27 should facilitate the navigator with the required level of understanding, competency and confidence for application in all aspects of navigation. However, with a vast array of ECDIS manufacturers, there is a challenge for the navigator to reach an acceptable degree of competency in a specific onboard system. Familiarisation of type-specific ECDIS, whether provided by the manufacturer, manufacturer's agent or a trainer, has been identified as a priority for training. The additional challenge is to ensure the quality of such training, both generic and familiarisation, is of sufficient quality to reduce the risks associated with this transition to new technology, whilst satisfying the scrutiny of external parties, such as Port State Control, where the focus will be on demonstrating operational competency on the ship's ECDIS equipment.

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Revised MARPOL Annex V and Hold Cleaning

Following a review by the IMO, various amendments to MARPOL Annex V took effect from 1 January 2013.

The revised Annex prohibits the discharge of all garbage into the sea, with limited exceptions. Importantly, this prohibition now affects the disposal of cargo residues, and this article will focus on those amendments which change the way cargo residues are considered, especially when they are classified as harmful to the marine environment (HME).

Cargo residues now "Garbage"

Prior to the revisions, in the majority of cases operators of bulk carriers were free to clean their holds and decks of cargo residues by discharging into the sea either directly or when included with wash water.

Now, as a result of the amendments, cargo residues are included within the definition of "Garbage". Therefore, this new treatment of cargo residues will have significant implications for owners who could potentially be faced with the burden and expense of disposing of cargo residues and hold washings that cannot be discharged into the sea.

The discharge at sea of cargo residues is permitted provided that certain criteria, specified in MARPOL, are met. However, where the cargo or cleaning agents used are classified as HME the cargo residues cannot be discharged into the sea. The limit date for compliance with this prohibition has subsequently been extended until 31 December 2015, subject to certain conditions being met, as specified later in this article).

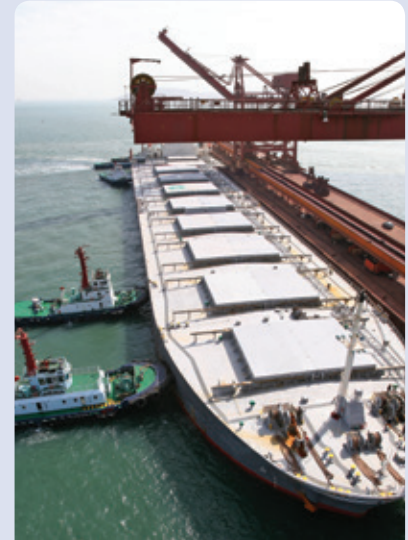
In order to establish whether the cargo should be classified as HME, it is necessary to refer to the guidance note MEPC/63/23/Add.1 Annex 24 provided by the IMO. A substance will be HME if it is designated as such by

the shipper (or whoever this obligation has been passed on to) after considering seven criteria set out in the United Nations Globally Harmonized System for the Classification and Labelling of Chemicals (the UN GHS).

Ultimately, there will be a harmonised database specifying whether different cargoes are or are not HME, and which will therefore save the time and costs associated with considering the seven criteria. Unfortunately, this database is not expected to be complete and fully operational until 2015, and in the interim period any declaration provided can be limited to three of the seven criteria under the guidelines, namely:

- data concerning acute aquatic toxicity
- data concerning chronic aquatic toxicity
- data concerning the synthetic polymer, rubber, plastic or plastic feedstock content of solid bulk cargoes

However, the note on provisional classification of solid bulk cargoes states that shippers of solid bulk cargoes should still make every effort to classify the cargoes within the seven criteria stated in the guidance note and found in the UN GHS.



Difficulties with classification and associated penalties

Without the database, this classification obligation is a heavy burden, and it is unlikely that this declaration, even limited to three criteria, can be made without input from a chemical expert and, therefore, without incurring additional costs. The guidance suggests that governments draft appropriate legislation to enforce compliance with the new Annex. Considering the potential environmental implications of non-compliance, any incorrect declaration is likely to result in a criminal penalty which even for the least serious offences will probably amount to a significant fine.

Further, the difficulty of classifying cargoes in this way is that a blanket classification for a certain type of cargo may not be sufficient. The chemistry of an ore, for example, may differ depending on which mine it is extracted from and the other components that are mined with the ore. Accordingly, it appears that it will be necessary to test ore from each mine and possibly each different seam in order to ensure that the HME criteria are declared correctly. Even when the database of classification is fully operational, there may be occasions when the testing of a particular cargo may be required.

What to do with HME cargo residues which cannot be discharged into the sea

The changes to MARPOL Annex V are likely to have the greatest effect once the cargo is discharged. If the cargo is HME, the Master of the ship will be prevented from discharging cargo residues, wash water and hold bilges at sea and, therefore, there may be an accumulation of this material that will need to be retained onboard until the ship reaches a port with suitable reception facilities.

Under Regulation 8 of Annex V, governments must ensure that adequate port reception facilities for garbage from ships are provided. However, currently it is acknowledged by the IMO that reception facilities are not available in all of the world's ports.

It is also necessary to ensure that in circumstances where the cargo is not HME, the cleaning agents are also not HME.



Implications of these revisions for Owners/Charterers

The costs of dealing with any HME cargo residues will depend on the extent to which a cargo is harmful and the availability of reception facilities. However, the potential expenses arising out of dealing with a HME cargo are not currently allocated in standard form contracts, and so it is not clear where this liability will fall.

BIMCO have provided a cargo residues clause (for time charters) which, at least on the face of it, deals with the issue of where the costs will fall. However, the clause does appear to have far-reaching consequences for Charterers, and would potentially allow Owners to divert, at Charterers' expense, to dispose of cargo residues, where reception facilities are not available at the discharge port. If this is the case, Charterers would require a reciprocal arrangement with any sub-charterers.

Further, it is not clear where the liability may fall if the cargo is not correctly disposed of, or indeed is incorrectly declared, and this leads to a pollution incident. In these circumstances, where environmental damage occurs, the costs of clean-up and reputational damage could be significant for whichever organisation retains the liability. Accordingly, clear contractual mechanisms should be put in place to deal with this issue.

The position until 31 December 2015

Since introduction of the revised Annex, the IMO have acknowledged that as a result of the difficulties being experienced by shippers in classifying cargoes, consequential problems were being created for shipowners and operators in obtaining HME declarations and, when cargoes have been classified as HME, finding adequate reception facilities. It was therefore agreed at the sixty fifth session of the IMO's Marine Environment Protection Committee that, until 31 December 2015, cargo hold washwater from holds previously containing solid bulk cargoes classified as HME may be discharged outside Special Areas, providing:

- Based upon information received from the relevant port authorities the master determines that there are no adequate reception facilities at either the receiving terminal or the next port of call;
- The ship is en route and as far as practicable from the nearest land but no less than 12 nautical miles;
- Before washing, solid bulk cargo residue is removed (and bagged for discharge ashore) as far as practicable and holds are swept;
- Filters are used in the bilge wells to collect any remaining solid particles and minimise solid residue discharge; and
- The discharge is recorded in the Garbage Record Book and the flag state is notified utilising the Revised Consolidated Format for Reporting Alleged Inadequacies of Port Reception Facilities.

Next steps

Since the amendments under MARPOL Annex V have only recently taken effect, it is difficult to foresee all of the practical and legal implications that the new definition of garbage will have. Certainly without the database having been completed, the obligation to classify a cargo as HME or not HME is an onerous and potentially expensive burden. Therefore, we would recommend Members ensure that their Charterparties are reviewed to ensure that they contain appropriate clauses specifying each party's obligations, and to contact the London P&I Club for any further guidance.

Thanks to Richard Gunn (Partner) and David Handley (Master Mariner) from the Reed Smith Shipping Group based in London for their assistance in the preparation of this article.

Complacency on the bridge

The London P&I Club recently undertook a "Root Cause Analysis" of collision cases which, unsurprisingly, concluded that the majority of root causes could be categorised as Human Errors. Within this group of causes, it was apparent that upon detailed examination a degree of complacency may have contributed to some of these incidents.

A notable example is that of an entered bulk carrier which was nearing the end of a Traffic Separation Scheme. The ship was slowing to make an ETA at a pilot station in the adjacent Inshore Traffic Zone, and was soon to make a substantial alteration of course to Starboard in accordance with her passage plan.

At the same time, the ship in question was being overtaken by a container ship with a very small CPA on her Starboard side. As the changeover of the navigational watch was approaching, it became apparent to the OOW that the overtaking ship was not taking action to pass well clear in accordance with her obligations under Rule 13. A VHF conversation took place in which the entered ship made her intentions known to the overtaking ship, and an agreement was reached whereby the entered ship would make her alteration to Starboard soon; and that the overtaking ship should alter course to Port and pass on the Port side of the entered ship.

It was soon after this conversation that the relieving officer arrived on the bridge and the watch handover process began. It was apparent that the OOW of the entered bulk carrier was confident that the plan was fully understood by both ships and expected the Containership to pass on the Port Quarter. Unfortunately, the OOW failed to monitor the situation, failed to alter course to Starboard as agreed, and was taken by complete surprise in mid-conversation when the overtaking containership collided with the bulk carrier just forward of the bridge on the Starboard side.

It is clear to see that throughout the described situation, the ships were in a developing close-quarters situation, and that good seamanship ought to have dictated that the OOW monitored the conduct of the overtaking ship very closely until she was finally past and clear, possibly delaying the watch-handover. Misplaced complacency and overconfidence in the circumstances may have significantly contributed to this collision claim.



ACCIDENT INVESTIGATION WORLD ROUND-UP

In direct response to inquires from Members, this new and regular feature will round up some of the eye-catching accident investigation reports from around the globe:

Wah Shan MAIB – United Kingdom

The death of a crew member during the securing of a tug's line as the ship arrived in port. The report serves as a valuable reminder of the importance of proper planning of mooring operations and the role of the officer in charge.

http://www.maib.gov.uk/cms_resources.cfm?file=/WahShan.pdf

Associated Safety Flyer:

http://www.maib.gov.uk/cms_resources.cfm?file=/Flyer.pdf

Juniper Pia – Japan Transport Safety Board

The death of a ship's officer having fallen into an open ship's hold. The report highlights the potential dangers of open hatch covers when crew are moving around deck.

http://www.mlit.go.jp/jtsb/eng-mar_report/2012tk0029en.pdf

Hanjin Bombay Transport Accident Investigation Commission – New Zealand

The grounding of a bulk carrier departing the Port of Tauranga as a result of engine failure. The report highlights the importance of the full knowledge of a ship's operating systems in the event of an emergency situation.

[http://www.taic.org.nz/ReportsandSafetyRecs/MarineReports/tabid/87/ctl/Detail/mid/484/InvNumber/2010-204/Page/0/language/en-US/Default.aspx?SkinSrc=\[G\]skins%2ftaicMarine%2fskin_marine](http://www.taic.org.nz/ReportsandSafetyRecs/MarineReports/tabid/87/ctl/Detail/mid/484/InvNumber/2010-204/Page/0/language/en-US/Default.aspx?SkinSrc=[G]skins%2ftaicMarine%2fskin_marine)



The London P&I Club



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A. Bilbrough & Co. Ltd.,
50 Leman Street, London E1 8HQ, UK.
Tel: +44 (0) 20 7772 8000
Fax: +44 (0) 20 7772 8200
E-mail: stoploss@londonpandi.com
www.londonpandi.com

