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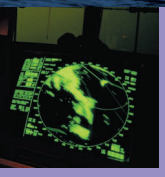
RISK WATCH

Britannia
The Britannia Steam Ship Insurance Association Limited



Navigation and seamanship

Containers and cargoes

Regulatory update

Personal injury

Loss prevention

Charts: the importance of keeping charts up to date

The Club's surveyors have noted in a number of recent condition surveys that temporary & preliminary (T&P) notices to mariners have not been correctly applied to charts. In some cases, the notices have been identified but have not been applied correctly to the charts in use on the passage. In other cases, the T&P notices have not been noted at all. These deficiencies have been found on ships that are using traditional paper charts and also on ships that are using ECDIS as the primary means for navigation. The application of T&P notices is a vital part of keeping charts up to date and they must be treated with the same care and attention as permanent notices to mariners.

The information contained in all notices to mariners is of great importance to safe navigation and without it mariners could find themselves in peril or in contravention of local laws. If the information is not correctly transferred to the charts, this could result in a ship grounding, a risk of damage to property, a pollution incident or contravention of local laws. Additionally, if there is a casualty, the seaworthiness of the ship could be called into question. There may also be other consequences such as detention of the ship, fines for the owners and also personal fines for the master and crew.

An example of where T&P notices are often not correctly applied is in a traffic separation scheme (TSS). If the TSS has been altered and a preliminary notice issued to warn mariners of the changes, it is intended that these changes are noted on the existing charts pending the release of new editions. If the preliminary correction has not been applied, the mariner could easily contravene the new limits of the TSS, which could result in heavy penalties as well as the obvious safety risk.

Feedback received from the Club's condition survey programme and from discussions with mariners attending the Club's technical seminar programme shows that some seafarers are unsure about how the T&P notices should be applied to Electronic Navigational Charts (ENCs). It is important to note that not all ENC producers include T&P notices in their ENCs. The current status of T&P inclusion in ENCs can be found at the following link:

tinyurl.com/Admiralty-PDF

Where T&P corrections are not included in the ENCs, they can be applied manually by referring to the notices to mariners. Additional services are available such as the 'Admiralty Information Overlay' service which ensures that T&P information is up to date on electronic charts. Again it is important for all persons concerned with the upkeep of the navigational charts to ensure that all relevant notices are applied.

In summary: failure to keep charts up to date is in contravention of SOLAS and puts the ship, the owner and seafarers in danger. It can also lead to action being taken by port state control officers. It is important that all notices to mariners are noted, including T&Ps, NavWarnings and local notices on the charts.

It is essential that masters and any persons responsible for the upkeep of charts are aware of the procedure for collating the information from all notices to mariners and ensuring that all applicable notices are applied to the charts in use.

Port of Chittagong: risk of collisions

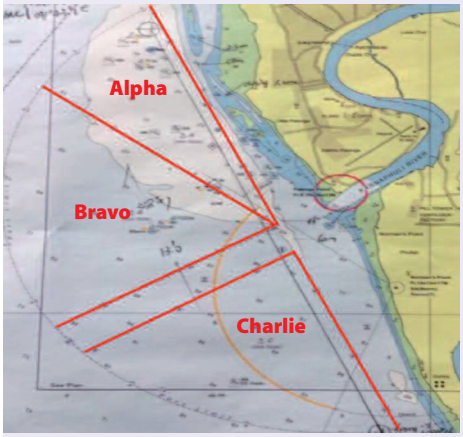
The Club has noted a recent increase in the number of incidents at Chittagong, particularly at the outer anchorage, involving ships either dragging anchor or colliding with anchored ships whilst manoeuvring at close range in what is currently a very congested port area.

In recent years, the port of Chittagong has developed into a very busy port, currently handling more than 220 ships per month. Inevitably, vessel traffic at the anchorages has also increased.

Anchorages:
The Port of Chittagong is situated in the lower estuarial section of the Karnaphuli River, which meets the Bay of Bengal near its north eastern corner. Chittagong is a tidal port. The tides in the Bay of Bengal are semi-diurnal and the tidal range is between 1.5 and 6 metres.

On arrival, deep draft ships (those with drafts in excess of 10 metres) usually drop anchor at Kutubdia open sea anchorage, south of Chittagong outer anchorage, and discharge part of their cargo before shifting to the outer anchorage. Pilotage from Kutubdia to the outer anchorage is not compulsory but the appointment of a pilot is recommended.

The Chittagong outer anchorage area is divided into three sections as follows:



Alpha: for ships with a draft of more than 10 meters.

Bravo: for ships scheduled to enter the Karnaphuli river within 24 hours.

Charlie: for lightering ships and others not scheduled to enter the port within 24 hours. Lightering is necessary to ensure that ships comply with the port's maximum draft, which ranges between 8.50 and 9.50 metres.

Approaches to the anchorages:
From Kutubdia to Alpha anchorage is approximately 4 hours steaming. Most incidents occur when ships are navigating from Charlie to the busier Alpha and Bravo anchorages. Ships with limited under keel clearance are more prone to lateral drifting, with increased risk of losing steering control when performing manoeuvres in close proximity to other ships.

Weather and sea conditions
The weather in Bangladesh is governed by the monsoon. The wind direction is from south to south east during the months of April to September. Winds then turn to a north and north easterly direction from November to January and to a westerly direction during February and March. In May, October and November cyclones often occur with wind velocity in excess of 30 knots.

Conditions at the anchorages
- Tidal streams during spring tides are very strong, between 6 and 8 knots and the ebb tide is stronger than the flood tide. Heavy rainfall may cause the flood tide to increase.
- The height of tide between low water and high water usually varies from 0.4 to 1.5 metres (low) and 2.4 to 4.6 metres (high) during the year.
- During high winds and long swells, conditions can be even more difficult particularly during the southwest monsoon.
- Due to the strong underwater current, there is a significant risk of anchor dragging for relatively deep water draft ships (drafts in excess of 10 metres) but this risk decreases for ships with drafts of less than 10 metres.
- The sea bed at Alpha and Bravo anchorages is soft mud with holding ground described as 'moderate'.

Lightering operations
Lightering of cargo at Chittagong outer anchorage becomes more challenging with the onset of the south west monsoon during the period from May to October. Rough seas and bad weather are common during the monsoon and the weather conditions often deteriorate rapidly. Lightering ships made fast alongside a mother ship usually experience heavy rolling and pitching which may cause hard scraping, bending and indentations to the mother ship.

Members should remind masters:
- To manoeuvre with great care while embarking/disembarking pilots
- That the usual dragging line is 160 deg (T) and 340 deg (T) and therefore not to attempt to cross the bow of adjacent ships in close proximity or underway to avoid possible collision/contact
- To anchor at a safe distance from other ships bearing in mind the swinging circle of anchored ships at the change of the tide
- If possible, to approach the anchorage during slack water when the tide is almost neutral
- To avoid anchoring near the river entrance
- To use a sufficient length of cable when anchoring
- To take extra care if the ship's under keel clearance is less than 2 metres because of the strong underwater current
- To have the main engine ready for immediate use in case of dragging anchor, especially during spring tides
- To maintain strict anchor watch and, if required, the anchor should be heaved up and dropped into a new location
- To monitor the weather closely so as to enable a prompt response to any sudden change
- To cast off lighter ships alongside if dragging of the anchor is suspected
- To avoid heaving up the anchor during low tides, especially if the ship's draft is over 10 metres or the under keel clearance is less than 10% of her length overall.

Summary
Members are recommended to pay special attention to the prevailing conditions and circumstances in order to assess the risk of collision and dragging of anchor at Chittagong. The navigating officers should remain vigilant and, if there is any sign of dragging, they should have the engines made ready for immediate use, any lightering ships should be cast off and the officers should be prepared to heave the anchor up promptly.

– Attempted attack – Boarded – Fired upon – Hijacked – Suspicious vessel

Somalia/Gulf of Aden

Guinea/Nigeria/Benin/Ivory Coast

Indonesia/Malaysia/Philippines

Piracy update

In January 2017 the International Maritime Bureau (IMB), a specialised division of the International Chamber of Commerce (ICC), published its 2016 annual report on Piracy and Armed Robbery Against Ships.

From January to December 2016 the IMB recorded 191 actual or attempted attacks on ships worldwide, a reduction from 246 the previous year and the lowest annual figure since 1998. However, the number of crew kidnappings was the highest in ten years. A total of 151 crew members were taken hostage and 62 kidnapped from their ships.

Somalia/Gulf of Aden

There were two new attacks recorded by the IMB, neither of which were successful. A typical incident involves high speed skiffs carrying armed pirates which target ships near the pirates' base close to the coast of Somalia or which come from mother ships in the Gulf of Aden. The pirates will attempt to board the ship, bring it to a stop and capture the crew, even when the ships are high sided and moving at high speed.

While the presence of naval ships in the region and the adoption of Best Management Practice 4 (BMP4) have contributed to a significant reduction in pirate activity, Somali pirates remain capable of launching further attacks. The IMB believes that a single successful hijacking will result in more attacks by pirates. Shipowners and masters are therefore urged to remain vigilant and avoid complacency.

Guinea/Nigeria/Benin/Ivory Coast

There has been a reduction in the number of reported attacks in Guinea, Benin and Ivory Coast, while attacks in Nigeria have increased from 14 in 2015, to 36 in 2016. Attacks are often connected with the movement of oil, particularly bunkering and STS operations within territorial waters.

In Guinea, three ships were boarded by armed pirates while at anchor off Conakry. In each case the pirates stole cash and personal belongings and also harmed or threatened the crew.

In Nigeria, 17 ships were boarded and one hijacked. Of these, 14 ships were attacked while underway and four ships were berthed. Attacks while underway typically involve armed pirates approaching ships between 30 and 110 nm off the coast of Nigeria.

In Benin, a refrigerated cargo ship was hijacked by armed pirates while anchored in Cotonou Outer Anchorage. The Nigerian Navy dispatched two warships to locate and intercept the ship. As the warship approached the cargo ship, 15 pirates escaped with three kidnapped crew members.

In Ivory Coast, a product tanker was hijacked by 18 armed pirates approximately 77 nm from Abidjan and the crew were taken hostage. The pirates repainted the tanker's name and provided false information to the Togo Navy. After the true identity of the ship was established, a Nigerian warship intercepted her and after an exchange of gun fire, recovered the ship and crew.

Indonesia/Malaysia/Philippines

In the Sulu Sea, South West of the Philippines, armed pirates linked with a militant group, Abu Sayyaf, have attacked several ships using high speed boats in order to kidnap the crew and hold them for ransom. These attacks represent a change in tactics, which previously focused on slow moving targets such as tugs and barges, and now represents a threat to all merchant shipping.

In the Philippines, there have been 10 attacks with the most violent attacks occurring on ships underway. Crew have been taken hostage and kidnapped, with pirates targeting both personal property and cargo.

In Indonesia, there were 49 attacks reported and of these, 45 ships were boarded, one ship was hijacked and three attacks failed. Most attacks occurred while at anchor and involved the theft of ship stores. Typically the attackers escaped once the alarm was raised. Nevertheless in one example armed pirates boarded a product tanker 26 nm from the coast and took the crew hostage.

In Malaysia, there have been several attacks by heavily armed pirates. The attackers often approach ships in small boats and take the crew hostage before targeting equipment, personal property and cargo.

While the number of attacks recorded by the IMB has fallen in 2016, piracy still represents a significant threat to merchant shipping. It is important that shipowners and crew members are aware of the risk of piracy, remain vigilant in areas where piracy is reported and continue to take action to minimise these dangers in accordance with BMP4.

Members are referred to the Piracy focus page on the Britannia website:

tinyurl.com/Piracy-focus

Cockroaches: a cautionary tale

In a recent case reported to the Club, a Member found a significant number of cockroaches on board a modular container ship. This meant that all the cargo had to be discharged and the cargo and the ship had to be fumigated, leading to additional expense and causing significant delay to the ship.

There are three types of cockroach commonly found as domestic pests; German, Oriental and American. Of these, the German cockroach is the type most commonly found on board ships. This is due to a number of factors:

- They are present on all continents and all major islands
- They have a faster reproductive cycle than the other species
- They produce a large number of off-spring
- They have adapted and developed immunity to a number of chemical pesticides.

The German cockroach is smaller than the other species (around 1.6 cm) and prefers to hide in confined spaces, which means it can be difficult to detect. The cockroach is light tan in colour and has two easily identifiable stripes behind the head.

Identification on board

Frequent inspections and early identification of sites of infestation may eliminate breeding sources. German cockroaches normally feed at night, therefore seeing them during the day is usually a sign that there is a large number of them on board. The presence of immature and adult cockroaches together indicates that the cockroaches are well-established on board. Cockroaches like warm, confined spaces such as: steam lines, cable bundles, behind false bulkheads, lagging and torn pipe insulation, ovens and oven hoods and the housing of motors such as reefer motors.

Prevention

Other pests, such as the destructive Asian Gypsy Moth, have been targeted by carrying out inspections in high risk areas during the flight season and these measures can prove successful in preventing the pests getting on board. However, these are specific measures for specific pests which originate in specific geographic locations. Their aim is to prevent the pests from being carried to another location.

Cockroaches are a very different type of pest as they are present in all continents. Given the number of container movements and the variety of cargoes that are carried they can only be contained through the use of a variety of preventative strategies described below.

Before loading cargo

Cockroaches can come on board a ship in many ways. They can arrive in the cardboard packing of ship's stores and with personal items carried by the crew – all of which can easily be inspected before they come on board. However, inspecting cargo is a different and more complex matter.

For containerised cargo, the IMO/ILO/UNECE Code (Code) for the Packing of Cargo Transport Units (CTU) does contain some practical advice in Annex 6, although it must be remembered that the Code is mainly written for shore side movement of cargo. It should also be noted that the Code is not mandatory unless made so by a national body and is not intended to conflict with any national legislation.

The Code provides some useful guidance on how to prevent pests such as cockroaches coming on board and then how to deal with them if they get on board. CTU doors must be kept closed and the seals should be kept intact. There is guidance on the use of sticky traps, light traps, chemical and biological controls as well as advice on using pesticides in various formulations such as dusts, granular formations, microcapsules, wettable powder and in suspension applications. The Code explains where fumigation should be used to suffocate or poison the pests and how this should be done safely. The full text of the Code is available on the IMO website:

tinyurl.com/IMO-safety-code

Gas carriers: make sure that the crew have appropriate training

With recent design and technology advances, a new generation of gas carrier is being built that is capable of carrying segregated cargoes of gases which may each require different cooling specifications.

Training in these cargo handling systems is essential to ensure that crews, even very competent ones, are fully familiar with their operation and procedures for maintaining full segregation and avoiding cross contamination of cargo, including the cargo heels.

A recent case handled by the Club involved various parcels of cargo carried over three voyages. The first voyage was a full cargo of ethylene, which was loaded and discharged without incident. The second voyage was an LPG mix of butane and propane which were carried separately and were also loaded and discharged without incident. A heel of ethylene, taken from the first cargo, had been retained in a deck tank for the purposes of gassing up and cooling the tanks prior to loading a cargo of ethylene for the third voyage.

On the second voyage, the LPG cargo was loaded into tanks which already contained ethylene vapour as the voyage orders contemplated that the tanks would not require further conditioning for this LPG cargo. However, the ethylene heel in the deck tank had to be segregated.

The LPG cargoes had to be mixed on board prior to discharge. During the voyage to the discharge port for this LPG voyage, the port and starboard cargo and refrigeration compressors were segregated from each other. The starboard system was set to run to cool and reduce pressure in the deck tank and the port cargo compressor system was used to condition the cargo of LPG.

After discharge of the LPG cargo, and on passage to the third load port, the ship gas-freed all cargo tanks to breathable air for visual inspection, purged all the cargo tanks and the cargo system with nitrogen and then gassed up and cooled with the ethylene heel from the deck tank. At this point, the ship had made common the refrigeration and compressor systems across all tanks. A full cargo of ethylene was then loaded for the third voyage.

Samples taken immediately prior to discharge of this ethylene cargo showed it to be contaminated with hydrocarbons and further testing and investigation confirmed that the contaminants were butane and propane in the same proportions as the mix of cargo from the second voyage. This contamination was also confirmed to exist in the deck tank.

Two possible causes of contamination were suggested:
- Either the LPG had not been properly purged from the system during the change of grade process; or
- The coolant parcel in the deck tank was contaminated with LPG during the time it was carried on board.

Several simulations were planned and then carried out on board. The conclusion was that there had been insufficient segregation between the compressor and refrigeration systems used for the deck tank and the systems used for the LPG cargo. Analysis of system data identified crossover readings on the condensate return lines between the two systems which were supposed to be physically segregated. This indicated that the two systems were not completely segregated as they should have been, although the responsible officers had believed that the system was sufficiently segregated by design.

The investigation identified two distinct points where the physical segregation was not complete, with one point identified by the ship and the other only discovered by a professional investigation team.

During the investigation the Member identified various problems and issues on board which, although not exclusively the root cause of this loss, can be shared to provide guidance to others:

1) There was no fixed procedure for operations such as changing grades of cargo.

2) There were also no valve checklists available on board explaining what valves, spool pieces, blanks and spectacle blinds should be in place for various operations, especially when loading or operating with segregated cargoes.

3) None of the valves in the cargo systems were numbered or labelled, which made identifications and checking individual valves more complicated. (The ship had actually been delivered from the yard with no identification name plates on any of the cargo system valves).

Summary
There must be a thorough risk assessment when different grades and types of cargo are carried. All crew should receive the necessary training and must be familiar with the ship's systems, especially if the ship is a new design. Even if the crew are experienced in the trade, they may not be familiar with the individual ship's cargo carrying system.

Ballast Water Management Convention: an overview

The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) enters into force on 8 September 2017 and will apply in numerous states (with the notable exception of the United States).

Ships can be stopped, detained and fined for non-compliance with BWM Convention requirements. Compliance may be monitored by both flag and port states. To assist crewmembers with these new compliance requirements, we provide the following summary of the main provisions of the BWM Convention.

Documents required:
The BWM Convention requires ships to maintain the following documents on board:
• BWM Convention certificate or statement of compliance
• Ship-specific BWM plan (approved by the flag state)
• Ballast water record book

Inspection procedure:

Stage one: During an initial inspection, inspectors will look for the documents mentioned above. These should all be found on board and should meet the BWM Convention requirements. Paperwork should always be consistent with operations on board the ship. Inspectors may check crew familiarity with the BWM system. Checks will be in the nature of a general impression and visual observation of the system.

Stage two: If inspectors are not satisfied with the initial investigation, they may investigate further to establish the following:
• Is the BWM system working properly?
• Has it been bypassed?
• Is the crew managing sediment according to the appropriate plan?
• Can the designated officer demonstrate necessary knowledge of the system and how it operates?

Stage three: If inspectors are not satisfied with the two stages above, they may take samples of ballast water and perform an indicative test for compliance.

Stage four: If the results for any samples tested do not meet the BWM Convention standards then a further detailed analysis may be carried out.

If problems are found with the BWM system, port state authorities may permit a ship to go to the nearest repair yard to resolve any issues with the faulty system. It may also be permitted to keep untreated ballast water on board in order to either discharge it to a reception facility ashore or to return it to the port of origin.

Contingency planning:
As part of the compliance requirements, contingency plans should be developed for problems which may arise with BWM systems on board.

The ship's flag state may require that any ship-based contingency measures should be addressed in the ship's BWM plan. This could include the following situations:
• When a ship cannot process ballast water
• Where no tank-to-tank transfer is possible
• Where no reception facility is available ashore
• Where no emergency treatment is possible

Training:
Crew members responsible for BWM operations should have adequate training to deal with all the compliance requirements. If the ship is fitted with a BWM system, crew members should have all necessary additional training to enable them to operate the equipment and to deal with minor maintenance issues.

Sediment:
Ballast tanks should be cleaned and sediment must be removed before a BWM system is installed. The BWM plan should also explain how to deal with sediment. Port state control may require inspection of the sediment removal plan to check for appropriate entries in the ballast water record book.

Ballast water exchange:
Until a BWM system is installed, the ship will be dealing with numerous ballast water exchanges at sea. A risk assessment should be carried out to determine any potential effect on the ship's pumps, strength or stability.

National BWM requirements:
In addition to the requirements of the BWM Convention, there are a number of national, regional and local BWM regulations. It is recommended that port state authorities should be contacted before entering their jurisdiction to ensure compliance with any relevant local BWM regulations that may be in force in addition to the requirements of the BWM Convention.

For further information on the issues involved with BWM and details of the alternative system in place in the United States, please see the BWM Focus page on the Association's website:

tinyurl.com/BWM-focus

Moving heavy objects: consider the risks

In a recent case handled by the Club, three crew members were moving ten pieces of steel plate around the steering gear room while the ship was underway. Each piece measured 2.4m x 1.2m and was 5mm thick.

An oiler and an engine cadet were holding the plates against the railings in the engine room, while another oiler (positioned in the middle) was trying to secure the plates to the railings using a piece of rope. The ship rolled unexpectedly due to the large swell and the plates moved. They fell on top of the oiler, partially crushing him as he tried to escape. The oiler was extremely fortunate that the other crew members were there to help remove the plates but he did suffer very serious leg, arm and internal injuries.

The ship was diverted so that the oiler could receive emergency medical treatment. He spent six weeks in hospital before his condition stabilised sufficiently to allow his repatriation home to continue his medical treatment.

A risk assessment and tool box talk was carried out but were found not to have been done properly. During the risk assessment process, the risk of personal injury was identified as highly likely. Therefore the task should not have been carried out without proper consideration of the lifting arrangements. In this case the lifting should have been carried out using chain blocks or other specialised equipment, not just with a piece of rope. Also, the lifting arrangements should have been checked by a responsible officer which did not happen in this case. The tool box talk was a tick box exercise only; the risks were not discussed and the job was not adequately supervised as per the work plan.

According to the master's analysis, the root cause was a failure to comply with the safe practices on board which included the following issues:

- Crew negligence
- Lack of concentration
- Lack of materials and resources
- Lack of procedure and control
- Failure to follow procedures and instructions
- Lack of knowledge and experience
- Improper lifting, handling and storage
- Improper position for task

In order to prevent such incidents in future the following actions are recommended:

- The risk assessment should be fit for purpose and should be clear to everyone involved
- During a tool box talk the risks and actions must be discussed thoroughly with the people involved
- The crew should be encouraged to challenge and contribute during risk assessment and tool box talks
- Whenever possible the correct lifting equipment (such as chain blocks and cranes) should be used
- The crew must be encouraged to use the 'stop and think' approach if things do not go according to plan
- If the procedures are not effective they should be reviewed and changed
- Lesson learned should be shared with the fleet

Tindall Riley (Britannia) Limited
Regis House
45 King William Street
London EC4R 9AN

Tel +44 (0)20 7407 3588
Fax +44 (0)20 7403 3942
www.britanniapandi.com

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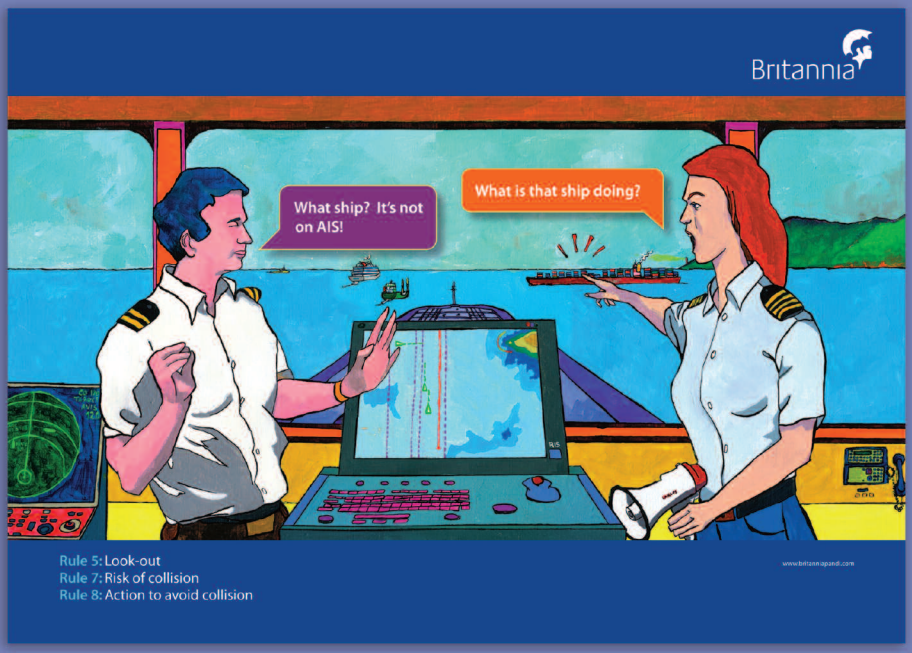
Loss prevention



Rule 5 of the International Collision Regulations (COLREGs) states that:
Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

Look-out and Automatic Identification Systems (AIS)

The next in our series of posters on collision avoidance deals with look-out and the use of AIS.

In the scenario shown in the poster, we can see that the ship is in an area of high traffic density. The master has just arrived on the bridge and is asking the officer of the watch (OOW) what the container ship is doing. The flustered junior OOW has not actually seen the ship, even though it is clearly visible. The container ship is not transmitting AIS and therefore is not being displayed on the ECDIS.

The radar, which is clearly not being monitored, shows the target quite clearly. If the ECDIS had a radar overlay installed, then the ship would show up on the screen but without any AIS data.

AIS relies on a ship to transmit the appropriate signal and therefore the ship keeping look-out has no control over the accuracy of the information received. For this reason, the COLREGs do not specifically recognise AIS as an aid to collision avoidance. Information obtained from AIS does not become more reliable or accurate merely because it is displayed on an ECDIS screen. Rule 7(c) states that assumptions shall not be made on the basis of 'scanty information'.

Rule 5 requires ships to use all available means to make a full appraisal of the situation. AIS, whether displayed on an ECDIS screen or not, may be one of those means but should not be the only means. The ARPA radar will provide course and speed and closest point of approach of the target ship, based on a series of ranges and bearings, and is more reliable than the AIS feed which may be incorrect.

The Club's loss prevention team believe that many navigational errors and resulting incidents stem from over-reliance on the data as presented on the ECDIS screen and a simple visual observation is often forgotten.

Editor's message We are always looking for ways to maintain and increase the usefulness, relevance and general interest of the articles within Risk Watch. Please forward any comments to: **rwatched@triley.co.uk**