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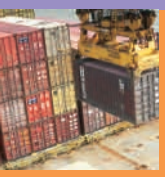
RISK WATCH

Britannia
The Britannia Steam Ship Insurance Association Limited

Navigation and seamanship

A costly trap – the VHF assisted collision



Containers and cargoes

Personal injury

Miscellaneous

The Club's investigation of the following collision has laid out a catalogue of watch keeping errors which serve to highlight the importance of maintaining good bridge procedures.

The most notable error demonstrates the danger of using VHF radio in collision avoidance. Ships in this example have been renamed.

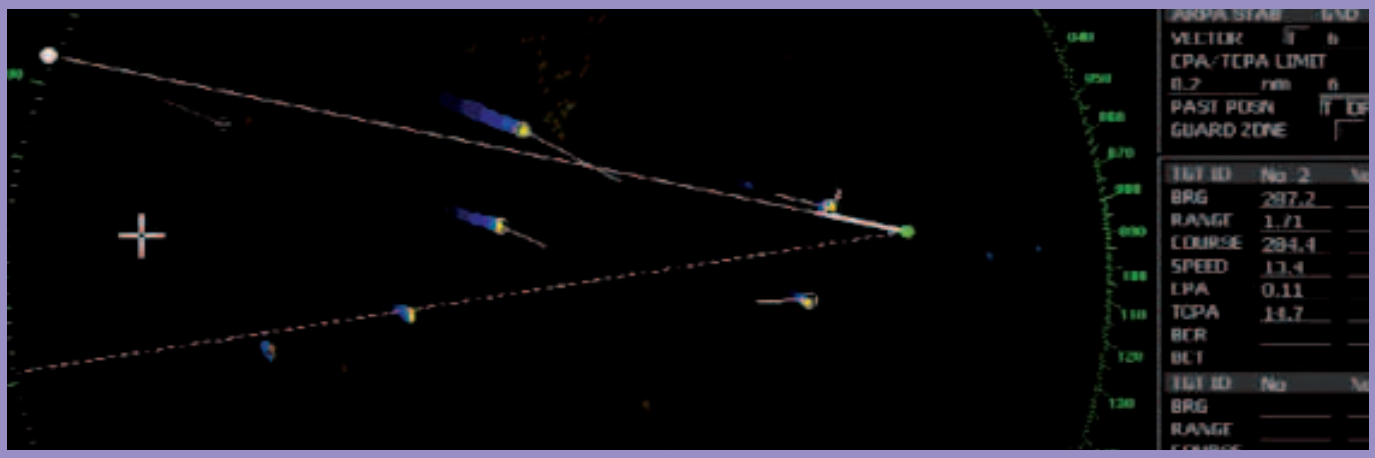
OPPORTUNE (a container ship of approximately 3,500 TEU with a service speed of just over 20 knots) was on passage from Port Klang, Malaysia, to Rotterdam, Holland, via the Suez Canal. She was proceeding westbound through the Dondra Head Traffic Separation Scheme (TSS) off the coast of Sri Lanka.

The 20:00 – 00:00 watch was about to commence and taking over the watch from the chief mate was a newly qualified third officer.

It was his first trip on this ship as third officer, although he had about two months' experience in this rank from his previous ship, where he had been promoted from fourth officer. He had joined the ship barely two weeks prior to the events described here. Also on watch was a first trip deck cadet positioned as look out and an experienced quartermaster.

The weather conditions were westerly winds of force five, generally good visibility and scattered rain showers. The visibility reduced at times to around four miles, due to rain. There were a number of ships in the vicinity.

Navigation and seamanship



A costly trap – the VHF assisted collision (continued)

Shortly after the third officer took over the watch from the chief mate, the ship reached the end of the TSS and the third officer set a course of 288 degrees. Some two miles ahead was another ship which *OPPORTUNE* was overtaking.

Also in the vicinity was *NOTORIOUS*, which the third officer determined was approximately 10 nm away, on a near reciprocal course, to starboard of his course line.

If the third officer had monitored *NOTORIOUS* carefully, plotting the target on the radar and taking a series of bearings, he would have realised that she was going to cross ahead of him and pass just over a mile off his port side in about 13 minutes, the same time as he would be abeam of the ship he was overtaking. In addition, if he had looked at the chart he could have appreciated that *NOTORIOUS* was heading for the eastbound traffic separation lane which was to the south of him.

Rule 13 of the Collision Regulations simply requires an overtaking ship to keep out of the way of a ship being overtaken, without dictating whether the manoeuvre should necessarily be to port or to starboard. However with *NOTORIOUS* known to be crossing ahead and passing down *OPPORTUNE's* port side, it would have been prudent for her to alter to starboard and pass the ship on her port side.

As mentioned, the eastbound lane of the TSS was to the south of the ship and a manoeuvre to starboard would have had the additional benefit of moving the ship away from traffic associated with the TSS.

At 21:14 the third officer altered course. He chose not to go to starboard but to go to port and followed up his decision at 21:18 with a VHF communication to *NOTORIOUS*:

OPPORTUNE: '*OPPORTUNE* calling *NOTORIOUS*'

NOTORIOUS: 'yes, this is *NOTORIOUS*'

OPPORTUNE: 'how are you passing?'

NOTORIOUS : 'are you the ship on our starboard side?'

OPPORTUNE: 'yes, we are the ship on your starboard bow. Do you want green to green or red to red'

NOTORIOUS: 'oh, green to green'

OPPORTUNE: 'ok pass green to green, now I will alter to port'

At this point, *NOTORIOUS* had four ships in her immediate vicinity; two fine to port, one fine to starboard, and another on the starboard beam. Beginning a string of events built on misunderstanding, *OPPORTUNE* confirmed to *NOTORIOUS* that they were the ship 'on the starboard bow'. In fact, they were one of the ships fine to port.

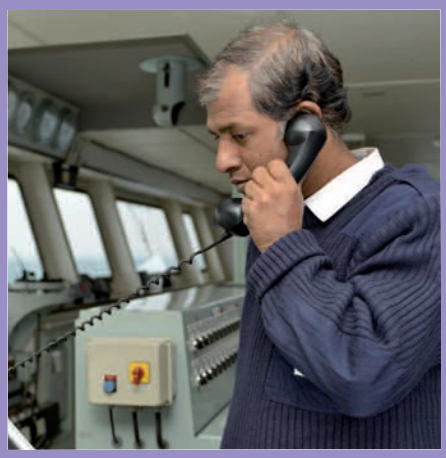
NOTORIOUS made the mistake of accepting *OPPORTUNE's* assertions as to position and identity without corroborating them. Failure to check either piece of information via AIS and radar unwittingly caused the officer of the watch to issue passing instructions which would contribute to a later collision.

Due to the fact that visibility had closed in because of rain, the decision of *OPPORTUNE's* third officer to alter to port also contravened Rule 19 of the Collision Regulations. *NOTORIOUS* was visible to *OPPORTUNE* by radar only (not by sight). The third officer was required by the Collision Regulations to take avoiding action in ample time and to avoid an alteration of course to port for a ship forward of the beam.

The third officer seems not to have registered the conditions of restricted visibility, nor to have been aware of the need to apply the relevant Collision Regulations. The ship was still proceeding at 23 knots and had not altered her speed.

The third officer should have called the master to the bridge in accordance with general instructions in the master's standing orders.

It should also be noted at this point that *OPPORTUNE* had an enclosed bridge. As is common in enclosed wheelhouses, a combination of heavy weather and rain had caused the windows to salt up, preventing a clear view of ships' lights from within the bridge. With this arrangement, the only



way that a watch officer can check on another ship (without using the forward windows) is either to open one of the side windows or to go on top of the monkey island. It was difficult for the lookouts and the third officer to see the lights of *NOTORIOUS* clearly enough to determine how the ship was crossing, yet no-one went outside to look.

At 21:14 the third officer brought the ship round from 288 degrees to 260 degrees and steadied up on that course. Realising that *NOTORIOUS* was continuing to close on him, at 21:24 he made contact again by VHF:

OPPORTUNE: 'you wanted green to green but now I see your red light what is your heading'

NOTORIOUS: '120 degrees. I will maintain my course and speed'

NOTORIOUS had not changed her heading throughout the ship's approach. The radar trace and the future track information on the radar screen would have made it clear that the ship was crossing ahead of *OPPORTUNE*. The two ships were now about 1.5 nm apart.

At this time the third officer still had time, had he appreciated the situation and altered to starboard, to manoeuvre free of *NOTORIOUS*. It is possible that had he called the master to the bridge at this point, the resulting incident may have been a near miss rather than a collision.

The third officer altered course further to port, bringing the ship round to 248 degrees. A few minutes later he called *NOTORIOUS* by VHF:

NOTORIOUS : 'altering course to starboard'

OPPORTUNE : 'ok, you alter to starboard'

The third officer's next order to the helmsman (whom he had meanwhile instructed to take the wheel) was 'port ten', followed by 'hard to port'.

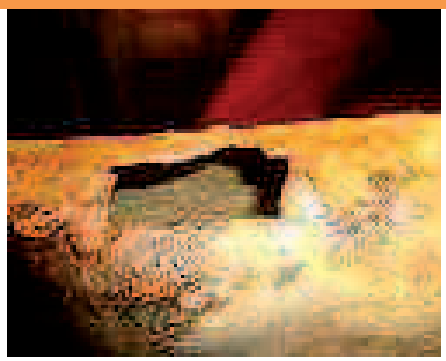
Approximately one minute later, the port side of *NOTORIOUS* and the bow of *OPPORTUNE* collided. At the quartermaster's prompting, the third officer called the master to the bridge.

The master took command of the bridge from the third officer and steamed to a safe area to check the condition of the ship. After verifying the condition of his own ship (which had not sustained any damage that would prevent her continuing her passage) he called *NOTORIOUS* to offer assistance. *NOTORIOUS* had initially lost steerage (indeed she issued a SECURITE message on channel 16 soon after the collision occurred) and suffered some damage to cargo. However, she was able to sail within a short period of time. No crew were injured on either ship and at 22:56 *OPPORTUNE* resumed her original course for Suez and onward to Rotterdam.

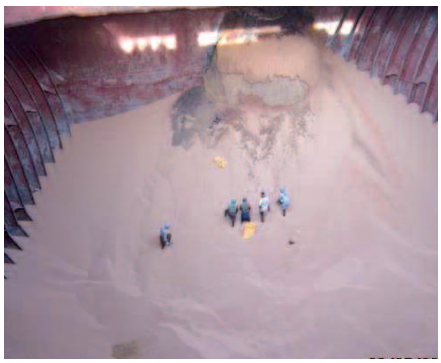
There are a number of lessons to be learned from the sequence of events leading up to this collision, but perhaps the most important lesson is the danger of using VHF in collision avoidance. The third officer on board *OPPORTUNE* seems to have been wholly unaware of the risks involved in using the VHF in this way. The officer on board *NOTORIOUS* was also not free of blame, as he also failed to positively identify the ship they were speaking to, despite having the means of doing so. The Association draws Members' attention to Merchant Guidance Note MGN 324, which provides guidance on the use of VHF and AIS at sea. The full text can be found at:

https://goo.gl/isWT7n

Containers and cargoes



Bilges again: proper monitoring is essential



The Club continues to receive a significant number of claims which could have been reduced or avoided if the bilges had been properly monitored.

A recent case involved wet damage to Australian peas and provides a good example of how such damage could have been avoided.

The Member's ship had loaded 44,000mt of grain in Australia and 8,515mt of dun peas in hold no. 1. When the cargo was discharged in India, a column of wet/mouldy cargo beneath the hold access compartment was observed. As the discharge of no. 1 hold progressed, the extent of cargo affected became apparent: not only did the column of seawater damaged cargo extend from the top of the hold to the tank top but a 3m deep layer of wet damaged cargo existed across the whole tank top. The initial cause of the seawater entry was a holed eductor pipeline.

The forepeak eductor pipeline which passed through the no. 1 hold forward access compartment was corroded. The pipeline was also used for the anchor wash and mooring winch cooling system. Sea water flowing under pressure had leaked from the corroded pipe into hold no. 1. While waiting for a berth at the first discharge port, the ship had frequently dragged anchor and hence the anchor winches had been used frequently. The winch cooling water and anchor washing system had also been used and part of this water had leaked into hold no. 1 through the corroded eductor pipeline. This leakage was not discovered immediately and was found only during the discharge from hold no. 1 at the second discharge port, when discoloured/damaged cargo lumps slid towards the centre of the cargo hold.

Following investigation, the quantity of water ingress into the cargo hold was found to be around 600 mt, a very significant amount, which could be explained by the continued use of the anchor winch and the washing of the anchors, combined with the size of the corroded hole.

The surveyors found that the sounding log for the voyage from the load port to the discharge port did not record any change in the no. 1 hold bilge soundings, despite an extensive ingress of water. Upon sounding the no. 1 hold bilges after the ship's arrival at the second discharge port, it was observed that the soundings were nil.

The water ingress alarm sensor located at the aft bulkhead of hold no. 1 also had not provided any alarm during the ingress.

The ship's previous cargo was cement clinker in bulk and it is probable that the bottom portions of the hold bilge sounding pipes and the water ingress alarm pipe may have been covered by the hardened cement clinker cargo, which is why the ingress had not been revealed.

Approximately 2,900mt of cargo was damaged. A large proportion of that damage could have been avoided if the bilges and associated sounding pipes had been properly maintained and regularly sounded and also if the high water alarms had been regularly tested.

In another example, a bulk carrier loaded bulk sinter feed in Canada for discharge in China. The charterparty voyage orders to the master included a requirement for regular reports regarding bilge pumping to be sent to charterers and so the chief officer arranged for the bilges to be sounded daily, weather permitting. Significant quantities of moisture were found and therefore it was necessary to pump out the accumulated water in the bilges on a daily basis and this was recorded in the 'water drainage log'.

On arrival at the discharge port, a discrepancy of about 2.5% was noted between the bill of lading cargo quantity and the calculated quantity of cargo on board on arrival.

The water drainage log summary prepared by the master and chief officer prior to the final discharge survey confirmed that this amount corresponded exactly to the amount of water pumped from the hold bilge wells during the voyage. The receiver's surveyors noted the discrepancy and the total quantity of water from the drainage log summary in their final survey report and the vessel departed. It was not until some 10 months later that the Member was notified of a shortage claim by subrogated cargo insurers.

Once proceedings were commenced in China, close inspection of the ship's bilge sounding records showed that the bilges were sounded at exactly the same time twice daily and each sounding resulted in the same quantity being observed in each well and pumped twice daily from the wells in all nine holds. It was also notable from the document produced that at no time during the voyage was the twice daily schedule of sounding and pumping interrupted by events. A statement was taken from the chief officer as to the veracity of the bilge pumping records and the daily activities on board in this regard which was submitted to the court.

After all the evidence had been submitted to the court, the claim was settled at a considerable discount prior to judgment being issued as a result of the parties being put under significant pressure by the Judge hearing the case. But settlement did not occur before the Judge indicated quite forcefully that the uniform nature of the bilge well soundings and pumping figures undermined his confidence in their veracity. The Judge did acknowledge, in private discussions with the Member's lawyers that although it was apparent some water had drained from the cargo during the voyage the failure to prove on the balance of probabilities what that quantity was did not incline him in their favour and settlement was in their best interests.

Best practice

General best practice can be summed up as follows:

• It is essential that documented procedures for the regular inspection, sounding and pumping of bilges and testing of bilge alarms are followed and the information observed is accurately recorded in an appropriate document. Any omissions from a regular inspection schedule should be shown in the record together with reasons why.

• When sounding cargo hold bilges it is important that exact soundings are properly taken and recorded. An accurate calculation should be made of the actual quantity of any water being pumped out.

• Cargo hold bilges should ideally be checked and sounded twice a day, weather permitting. Any deviations from this should be recorded with reasons why.

• Bilge systems and alarms should be tested regularly. In the event of any faults with the bilge alarms being noted, regular manual soundings or similar means of checking should be initiated.

• Cargo residue and other debris can impede the proper functioning of the bilges and all bilges should be inspected and cleaned if necessary, prior to loading any cargo.

• When ballasting, it is important that the ballasting tanks are sounded regularly after completion of the ballasting operation. It is equally important that the adjacent tanks and cargo hold bilges in any adjacent cargo spaces are also sounded to check for the possibility of water ingress.

Containers and cargoes

Coal: risks of loading coal from barges in Indonesia

The Club has recently seen several cases of inadequate monitoring of Indonesian coal before loading and during voyages which has given rise to safety concerns.

Indonesia is one of the world's biggest exporters of coal. Due to limitations in some ports, loading often occurs via barges and it is known that there are a number of operators who are shipping coal (via barges) without following accepted industry good practice. Examples include misdeclaring the cargo as not being prone to self-heating or providing no details of the self-heating or methane-emitting characteristics of the cargo.

It is for this reason that the effective and accurate monitoring of the cargo during loading and the voyage has come into focus as a vital part of ensuring safety for the ship and crew. For general, information about loading coal in Indonesia, please refer to the June 2010 (Volume 17) edition of *Risk Watch*. This article examines in greater detail the recommended cargo monitoring procedures as well as actions to take in the event of a fire and can be seen at:
http://goo.gl/je4lBl

The IMSBC Code states that before and during loading the temperature of the cargo on the barge must be measured when the shipper informs that the cargo is likely to self-heat. However, in view of possible misdeclaration, we recommend that in all instances the temperature of the coal be measured before loading. Minton Treharne & Davies (MTD) have advised the Club's Members on several occasions and recommend that a 'thermocouple probe' is used for this purpose. They suggest that a pit of 0.3-0.5 metres is dug into the cargo while it is on the barge and a number of measurements are taken after inserting the probe. They recommend that the temperature range is recorded in at least 21 places. During loading, they suggest re-measuring the cargo again when 33% has been discharged from the barge and then again when 66% of the cargo has been discharged. Any cargo above 55 degrees centigrade is evidence of self-heating and should be rejected.

Alternative methods such as using a 'temperature gun' or 'thermo-gun' are only effective when the manufacturers' requirements are followed. For example, when using a temperature gun, measurements should be taken at a maximum distance of 0.5 metres from the cargo surface. A pit of 0.3-0.5 metres should be dug before holding the gun in the pit and recording a number of readings per pit.

MTD also remind Members that the IMSBC Code states that gas measurements are to be undertaken during the voyage and if they have concerns they should contact the Club so that appropriate action can be taken.

If cargo is found to be on fire, or above 55 degrees centigrade in the barges during loading, MTD recommend that the following steps should be taken:

- Loading from the relevant barge is to cease immediately.

- All cargo that has been loaded from this barge will need to be discharged from the holds back into the barge as soon as possible, making sure that all the relevant coal is discharged. This can be done using the grab.

- Consider spraying localised areas of the hot coal in the holds with fresh water. This is to be jetted onto the hot areas in intermittent bursts, allowing the steam to dissipate between each burst.

- Fresh water is preferred however if safety is at risk then the crew should use whatever water is available. If time or circumstances permit, charterers/shippers should assist by arranging fresh water for fire fighting where possible. If seawater is used, a LOI should be obtained from charterers or shippers if possible.

- Cargo holds not being worked are to be closed and gas monitoring commenced for oxygen, carbon dioxide and lower explosive limit percentage (LEL).

- A local P&I surveyor can assist in carrying out further temperature surveys as described above.

- Crew to prepare fire hoses on deck.

- All combustible materials on deck to be removed.

- Fire and emergency pumps to be tested and charged.

- Boundary cooling of hatch cover seals that are exposed to heat.

- Holds are to be treated as confined spaces, with all the associated precautions.

- Crew to be aware of the toxic and asphyxiating nature of the atmosphere in the cargo holds.

On arrival at the discharge port, Members are strongly recommended only to open holds for discharging that are imminently to be worked on. Opening hatch covers with cargo that will not be unloaded for some time exposes the cargo to oxygen that may fuel self-heating reactions and cause further problems.

Our thanks to Stewart Horan at Minton Treharne & Davies for his assistance in the production of this article.

Fishing: when eating the daily catch can be dangerous

One of the most popular off-duty pastimes for seafarers is to fish from the side of the ship when at anchorage. However, allowing seafarers to eat the fish they have caught can have very serious consequences, as we saw in a recent case where a ship entered with the Club had 14 crewmembers out of a total of 19 struck down with very serious ciguatera poisoning (a build up of toxins associated with plankton). While the ship was waiting at anchorage off Iguana Bahamas, several crewmembers went fishing using their jigs and hand-lines and caught 200kg of a fish called Talakitok. Talakitok is well known to Filipino seafarers as it is commonly seen in shops in the Philippines and is often cooked by them at home. Of the crew's large catch, the majority of the fish were of a smaller size of approx 6-8 inches. However, three fish were very large, weighing in around 3.5kg each. The crew did not eat any of the catch at the time and it was placed in the freezer.

The ship loaded her cargo and commenced her voyage. During the next few weeks, some of the smaller fish were prepared by the cook and these were consumed by the crew without any ill effects. It was only after the three large fish were made into a lunch during the ship's call in Canada that the problems began. Within hours of eating the fish, 14 of the officers and crew began to suffer nausea, dizziness and eventual collapse. The agents arranged for emergency medical treatment and ambulances began taking the sick crew ashore to hospital. Some of the crew were so seriously ill that they had to be treated in the Intensive Care Unit of the hospital and remained there for several days. The consequences could have been much more serious if the crew had eaten the larger fish while the ship was still at sea. It was also very fortunate that there were excellent hospital facilities at that particular Canadian port. Only five of the ship's crew were unaffected as they were on duty at the time lunch was served and they did not consume the fish.

With most of the crew and all the other officers in hospital, the first engineer was obliged to assume command of the ship, assisted by the four remaining crew, an oiler, a wiper, an AB and a cadet. Owners arranged for an emergency replacement crew to go on board and eventually the condition of the sick crew improved sufficiently to enable them to be repatriated back to the Philippines. We are pleased to report they have all since fully recovered.

The Canadian Health Authorities boarded the ship and conducted their own investigation. Their inspectors found that the ship's galley was in excellent condition. They removed 125kg of fish caught by the crew which remained in the freezer and, after testing, this was destroyed. They advised that Talakitok fish feed off the coral reefs which contain toxins. While the smaller fish are generally safe to eat as their toxin levels are low, the larger fish have a much higher concentration of toxins which are dangerous when consumed by humans and can cause ciguatera poisoning.

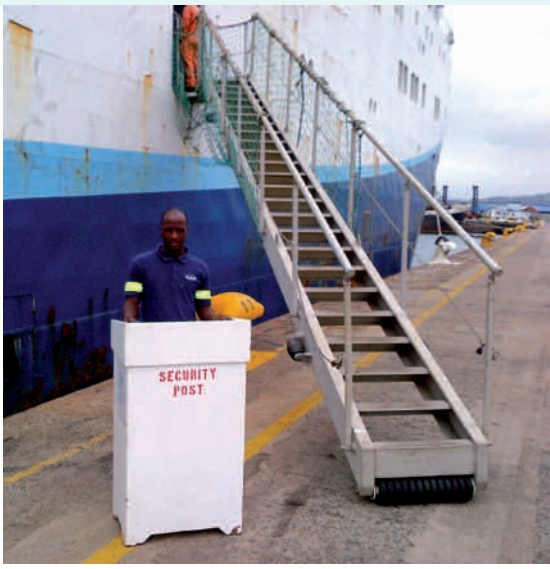
This incident highlights the fact that allowing seafarers to eat the fish they have caught themselves off the side of the ship can be potentially very dangerous. While the crew may be familiar with the type of fish they are catching, it is unlikely that they will be so familiar with the particular problems in the waters where they are fishing and the possibility of coral reefs or red tides containing algae and toxins which may be ingested by the fish.

Stowaways

The numbers of stowaways trying to board ships at South Africa ports is on the increase. Under the current South African Immigration Regulations it is the obligation of the crew to check the identity of all persons coming on board the ship to prevent unwelcome visitors. If the crew allow any unauthorised persons on board, the ship immediately becomes liable for them. This includes the costs of repatriating them to their home country in the event that they are not South African citizens. This can be very expensive if there are multiple stowaways involved.

To avoid this problem, it is recommended that the crew take the following steps to prevent unauthorised persons from boarding:

- Move the ship's security desk from the top to the bottom of the gangway. In this way, everyone can see that a check will be made before they access the ship and this makes the ship unattractive to potential stowaways.
- Gangway security personnel should refuse permission to anyone wishing to board who does not have a valid port permit. All visitors to the ship should surrender their port permit to the gangway security desk before boarding and then collect this upon leaving the ship. This will provide a quick and reliable check that whoever boards the ship also leaves the ship.
- The stevedore company should be asked by the agents to provide a list of all personnel who will be going on board while the ship is in port. The stevedores should be obliged to use the gangway so that the gangway security personnel can check them on and off.
- In the event that anyone is found on board the ship who should not be there, that person should immediately be taken to the security desk at the bottom of the gangway. Port security should be called and told that the person in custody was trying to board without a port permit. The port security will then deal with that person.



These recommendations should be followed in conjunction with the normal stowaway checks carried out by the crew prior to the ship's departure from port as part of the vessel's ISPS Security Plan.

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Miscellaneous

Publications

Witherby Seamanship: Guidelines to Shipping Companies on Health and Safety
Witherby has just published these guidelines which cover seven key health and safety topics (including alcohol misuse, drug misuse, hepatitis, HIV and AIDS, workplace smoking policies). Three of those topics are included in the ILO Maritime Labour Convention 2006 (MLC) as being areas that should be addressed in the national guidelines for the management of occupational safety and health on board ships.

Further details about the publications and information on ordering are on the Witherby website:
http://www.witherbyseamanship.com

IMO: Spanish publications
The IMO has recently published a number of its popular books in Spanish, which will be of particular interest to our Spanish and South American Members. The following titles are available now in Spanish:

- IMDG Code Supplement (including Amdt. 37-14)
- Waste Assessment Guidelines under the London Convention
- The London Protocol : what is it and how to implement it

Full details on the publications and how to order them are on the IMO website:
http://goo.gl/sRzYQZ

Loss prevention poster campaign: fishing boats
COLREGs 6, 15, 16 and 18

It appears that bridge teams are often reluctant to slow down in order to avoid close quarters situations. This reduction in speed should be considered, as it is a very effective way to deal with situations where, for whatever reason, a broad alteration of course to starboard cannot be achieved. An example is where there are fishing boats in the vicinity, a ship overtaking or being overtaken, an anchored ship or the ship is in shallow water.

In the situation illustrated in the poster, the fishing boats are clustered together in a large group. They are virtually stopped and are passing safely down each side. The ship on the starboard side is on a steady bearing with a small closest point of approach (CPA) of around 1 cable ahead.

The situation highlights that, as a give way vessel for both the ship and the fishing boats under Rule 18, an alteration to starboard would result in a close quarters situation with the fishing boats. Waiting until the fishing boats have passed and are clear prior to altering course boldly to starboard will place the two ships in a close quarters situation. Further, an alteration of course to port is difficult in view of close proximity of fishing boats and would require crossing ahead of the other ship which should be avoided, as required by Rule 15. Slowing down is the most obvious and effective means of resolving the situation.

A reduction in speed whilst being effective may take a little more time to be observed by the other ship. However, given the range of the ship at this point, a reduction in speed would clearly provide a positive outcome as the action taken would be early and substantial.

This scenario was based on an actual situation which resulted in a collision between the two ships. VHF communication instigated by the stand on ship resulted in a verbal agreement whereby the stand on ship would pass around the give way ship's stern, passing green to green or starboard to starboard, contrary to the rules. The give way ship agreed to alter course a little to port. During the next 10 minutes or so both ships altered course a few degrees. This in fact reduced the CPA to zero. At a range of 2.5 miles the stand on ship called on VHF to reverse the previous verbal agreement to a port to port passing. This now required the give way ship to make a substantial alteration to starboard. Over the next few minutes the give way ship altered to starboard but the stand on ship's course hardly changed. There was insufficient sea room to make the turn and the give way ship impacted the stand on ship on the port side aft. There were many fishing boats in the vicinity at the time but the collision could have been avoided if the give way ship had considered slowing down, rather than making an agreement, via VHF communication, which was in contravention of the collision regulations.

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**