THE LONDON P&I CLUB

STOP Loss

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Preventing liquefaction

***StopLoss* has previously featured a number of articles reminding Members of the danger of liquefaction associated with the carriage of nickel ore, particularly from ports in Indonesia and the Philippines.**

This is an issue which has recently returned to sharp focus with the sinking of the supramax bulk carrier, *Vinalines Queen*, on 25 December 2011, whilst on a voyage from Indonesia to China with the loss of all but one of the ship's 23 crew. Although the circumstances of the casualty are currently subject to investigation, there is a strong likelihood that the sinking was the result of the ship developing a loss of stability caused by liquefaction of the cargo, and bears a similarity to other reported incidents of ships being lost or suffering a dangerous loss of stability when engaged on the same trade.

Unfortunately, the problems inherent in loading nickel ore and the extent to which Masters and Owners are able to manage effectively the risks associated with the cargo show little sign of improvement. Nickel ore is often mined and exported from very remote and difficult to access locations, primarily in the Philippines, Indonesia and New Caledonia, challenging the ability of local Competent Authorities and independent surveyors to properly check and monitor the activities of the mines and Shippers and confirm that they are complying with their obligations under the International Maritime Solid Bulk Cargoes Code (IMSBC Code). The ports of shipment are usually designated offshore anchorages where cargo is brought alongside the ship in barges, thus adding to the difficulties in the Master being able to check the condition of the stockpile or even verify from where the cargo is being sourced.

As per the provisions of SOLAS and the IMSBC Code, the Shippers are obliged to properly declare information relating to the cargo sufficiently in advance of loading. For cargoes that may liquefy (Group A Cargoes) declarations should provide evidence of the moisture content at the time of shipment and the transportable moisture limit (TML), the TML being defined as 90% of the flow moisture point (FMP). Any cargo with a moisture content in excess of the TML should not be accepted for loading. However, Members need to be aware that cargo declarations provided by Shippers have often been proven to state incorrect values for moisture content and/or TML, and can therefore not be relied upon with any degree of confidence. There are few, if any, independent laboratories in the Philippines or Indonesia that have in place the proper equipment, trained personnel and procedures to enable proper analysis of cargo samples in accordance with IMSBC Code requirements. As a consequence, independent surveyors are often obliged to submit samples to a laboratory located outside these countries for analysis. There have also been reports of independent surveyors being denied access to stockpiles, intimidated or even physically assaulted by Shippers or mine owners representatives.

Members contemplating the carriage of nickel ore are strongly recommended to make early contact with the Club, preferably prior to concluding a fixture, in order that the risks involved and appropriate precautions to be taken may be carefully considered well in advance of loading.

Iron Sand

Another trade which has increased over recent years is the export of iron sand from Indonesia, the Philippines and New Zealand. This is another Group A cargo which has, unfortunately, led to the total loss of a number of ships in recent years, and should be subject to the same precautions as outlined in the Club's Circular of 31 January 2011 which can be found on the Club's website by **clicking here**

In this issue

Emergency towing procedures

Since 1996, emergency towing arrangements have been required for tankers above 20,000 DWT, but in May 2008, SOLAS Chapter II-1 Regulation 3-4 was amended to require all ships above 500 GT to have onboard an emergency towing procedure from 1 January 2012.

Whilst this requirement has been mandatory for all newbuildings and passenger ships since 1 January 2010, it has now entered into force for all existing ships. As a result, all ships are now required to have a ship-specific emergency towing procedure to be ready for use by the crew in preparing for towage in an emergency. The procedure has to be based upon the existing arrangements and equipment available onboard. The expansion of this legislation to include all ships, rather than applying exclusively to tankers, seems to reflect the increasing awareness over recent years of the risk of harm presented by a disabled ship and of the importance of emergency preparedness in such situations. Leaving aside the risk of damage to the ship itself, there is particular sensitivity about the risk of pollution from bunker spills, as well as physical damage to marine eco-systems and property when a ship runs aground. Time is of the essence in casualty situations and, as the regulation itself recognises, Owners, operators and crews need to take into consideration that the time-critical nature of an emergency often does not permit deliberation. Accordingly, the procedures become part of the emergency preparedness requirements of the ISM code and should be practised regularly.

In developing the procedures, the ability of the ship to be towed from bow and stern must be evaluated with reference to the layout of the ship and equipment available onboard. This process should be carried out by persons knowledgeable about towing equipment and operations. The derived procedures are then consolidated in an Emergency Towing Booklet (ETB) and should be presented clearly in an easy to understand format to aid their smooth and swift application in an emergency situation. The ETB should include diagrams of towing assemblies and arrangements, a quick reference decision matrix that summarises options in various emergency scenarios, communication plans and an organisational chart of personnel and designated tasks. Both a hard and soft copy of the ETB should be maintained in the Owners' office to facilitate the rapid distribution of information to a towage company. A minimum of three copies should be kept onboard on the bridge, in the forecastle space and the ship's office or CCR.

The ETB may be created by the Owners themselves in-house or by employing a consultant. A number of Classification Societies provide detailed guidance and services in this respect. Although the procedures do not necessarily require formal approval by the Flag State or Class, they will be subject to inspection at ISM audits and possible scrutiny during PSC inspections.

ERROR IN MANAGEMENT?

From time to time, claims are presented in respect of heat damage to cargo, primarily agricultural products, usually caused by heat transfer from bunker tanks adjacent to the holds.

As part of the management of the ship, fuel oil often has to be heated to facilitate transfer to the settling and service tanks, and this process should be overseen by the ship's engineers, controlling the temperature of heating coils in the bunker tanks. However, on occasion, the bunkers are heated excessively or for longer periods than necessary. This increases the risk of heat transfer into the adjacent cargo hold, particularly where the tanks are relatively full, resulting in discolouration and caking of the cargo. The damage is usually local to the tank top plating and does not extend far into the stow. However, the surface area of the tank tops can be large, resulting in significant overall damage to the cargo which can be compounded by admixing damaged and sound cargo during the course of discharge.

As the primary function of heating the fuel oil is to enable it to be pumped around the ship, the ship's engineer may not have in mind the potential consequences for the cargo. As such, engineers should ensure that they monitor and document carefully the temperature of bunkers.

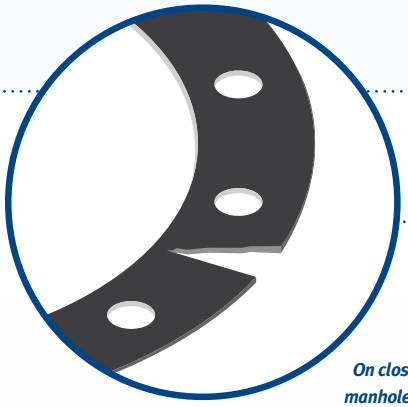
Manhole Covers

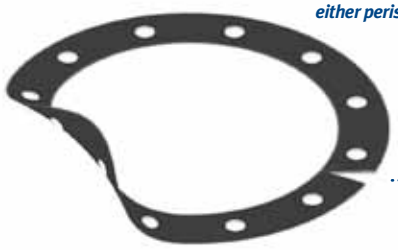
Feedback from the London P&I Club's Ship Inspection Programme indicates that an increasing number of inspectors are recording "findings" relating to the condition of manhole cover gaskets.

It is standard practice for enclosed spaces such as Ballast Tanks/Cofferdams and Void Spaces to be inspected on a prescribed schedule to ensure that the structural condition of the ship in these difficult-to-reach locations remains acceptable. During such inspections, tank inspection records usually document the condition of the coatings, sounding pipes, striker plates and other structures within the tanks. However, during P&I Inspections, it has occasionally been noted that when previous inspections have concluded, the condition of the gasket at the manhole entrance to the tank is inadvertently overlooked.

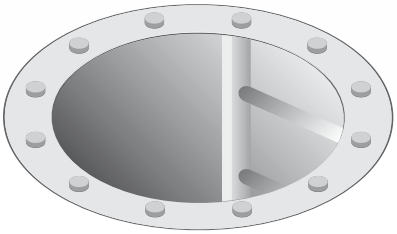
It is self-evident that all manhole lids should be secured to ensure water tightness after an Enclosed Space Entry. In addition to the obvious safety and stability concerns, if those manholes located in the cargo hatches permit water ingress, it can give rise to significant water damage to cargo and costly claims under bills of lading, particularly when the cargo concerned comprises finished steel products.

The Club reminds Owners to ensure that gaskets and securing arrangements are considered as part of routine Tank Inspections. Whenever a manhole cover is removed, crew should check that it is replaced correctly with a gasket in good condition and tested for integrity, if at all possible.





On close inspection, manhole gaskets can sometimes be found to be either perished or split.



MAINTAINING BILGE SYSTEMS

In 2003 and 2006, the Club identified water ingress into cargo holds through bilge pumping systems as a contributory factor in a number of claims, and this continues to be an issue. However, claims of this nature are easily avoided if the crew follow standard practices with respect to the testing and maintenance of bilge systems and the Club's Ship Inspection Programme checks for the regular overhaul and cleaning of non-return valves.

Intermediate hold cleaning is standard practice and the introduction of sweepings and other debris into the bilge system is a common event. Failure to take any subsequent steps to clear the bilge system can lead to screw-down non-return valves failing to seat properly, with the operation of other non-return valves being similarly impeded. Potentially, the sounding pipe bottoms might even become blocked resulting in a risk that water ingress is not properly detected.

Practical guidance is contained in Bulk Carrier Practice and includes common sense steps, such as testing the bilge sounding pipes by running water down them and ensuring that the strum box or grill is kept clear. In addition, the non-return valves can be tested whilst the holds are empty by simply allowing water to flow back into the bilge line. This can be achieved on some ships by opening the overboard discharge valve, allowing the head of pressure to cause water to flow into the line. Any water flowing back into the hold bilge is indicative of a possible blockage of the non-return valves which should be opened and cleaned. All non-return valves should be cleaned at regular intervals in any event and high level bilge alarms, when fitted, should similarly be tested by raising the float towards the top of the bilge and confirming that the alarm sounds on the bridge and/or in the engine-room.

The Club reminds Shipowners that it is good practice for all non-return valves within the bilge system to be regularly overhauled. Whenever non-return valves are tested, an appropriate entry should be made in the deck log.

Cross-contamination

The most common claims in the context of liquid cargoes tend to be in relation to shortages and contamination. Whilst perhaps more common, the shortage claims usually only involve relatively low percentages of the total bill of lading quantity, and are often nullified, or at least reduced, by local trade allowances at the discharge port. However, where a cargo becomes contaminated, the resultant claim is likely to be much more expensive as the damage will potentially affect a high proportion of the cargo.

The Club has seen a number of cases over the years involving contamination as a result of vapour migration through the inert gas system (IG system). Perhaps surprisingly, petroleum cargoes are as sensitive to contamination by vapour as to contamination by liquid, so a small amount of vapour can materially affect the characteristics (usually flash point) of the cargo. This problem is particularly prevalent on voyages involving the carriage of different grades of cargo having different vapour pressures. The higher the vapour pressure, the lower the flash point, so diesel and jet fuel (those cargoes most frequently affected by this problem) have a lower vapour pressure and a higher flash point than cargoes such as gasoline, naphtha or similar volatile cargoes. If tank isolating valves are either not operating properly or have been accidentally left open, vapour migration can occur between tanks containing grades with a different vapour pressure.

If there are tanks containing cargoes with different vapour pressures/flash points on a common venting system, the atmospheres in all tanks will strive to become a mixture of the two vapours in proportion to their respective vapour pressures (according to Boyle's Law of partial pressures). In reality, this will result in a transfer of low flash point vapours from the gasoline to the high flash point diesel/jet. Once the vapour in the ullage spaces above the diesel or jet tanks contains light end, low flash point components from the gasoline, these vapours will be dissolved, resulting in a lowering of the flash point of the diesel/jet cargo. A transfer of vapour from the volatile cargoes to the less volatile cargoes will occur even if a constant pressure of IG is maintained in both tanks. In addition, vapour movement between grades can be accelerated during loading or discharging if there is a flow of vapours from tanks containing the gasoline into those containing diesel or jet.

As such, Members should ensure that crew are aware of the risk of vapour migration and that they double-check the IG system valves are properly closed after completion of loading. Where cross-contamination does occur, Members are reminded to inform the Club at the earliest opportunity to ensure that appropriate steps are taken to mitigate the potentially significant losses. This will often involve deploying expert chemists to assist with blending locally.

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