

Photo courtesy of G4S Maritime Security Solutions



Tony Baker
Head of Risk Management Department

Ballast tank chemistry

The Ballast Water Management Convention is close to being ratified. This will require ships to be fitted with a suitable ballast water treatment system to remove organisms, usually by a combination of filtering and chemical treatment. However, the use of chemicals could also have an effect on ballast tank coatings, which means ship operators need to be careful in their choice and combination of treatment systems and coatings.

See page 2.

Dealing with casualties

This issue of Signals has two articles that deal with the aftermath of marine casualties. The first looks at the new Lloyd's Standard Form of Salvage Agreement and Standard Salvage Arbitration Clauses, which should assist with claims involving multiple cargo interests such as occurs after a casualty involving a containership. The procedures should be more transparent, quicker and cheaper as well as encourage settlement.

The other article explains how a ship owner involved in a US casualty can participate in an investigation being carried out by the US Coast Guard. A 'party in interest' can participate fully in the investigation and gain access to information from other parties involved. This can be important at the informal and formal levels of an investigation, particularly at its early stages.

See page 5.

Vetting armed guards

The latest edition of the industry's best practice guidelines and protection measures against piracy – Best Management Practices for Protection against Somalia Based Piracy (BMP4) – was published in August 2011. With the piracy situation off Somalia and in the wider Indian Ocean remaining a serious threat, the use of armed guards can be considered as an additional layer of protection to the measures contained in

BMP4. However, the decision on whether to use armed guards and the choice of security contractor is a complex one. To help Members determine the suitability of private maritime security contractors, North has launched a vetting programme to identify the capabilities of prospective security contractors.

See page 4.

Keeping fit on board

North regularly promotes the need for seafarers to keep fit and the general advice given is to eat healthily and exercise frequently. An article in this issue provides some practical advice about exercise by describing some simple steps that can be taken by individuals to improve their fitness without needing access to a gym. It also describes a straightforward way for seafarers to obtain an indication of their level of fitness.

See page 6.

Bulk carrier safety

The problem of bulk cargoes that can liquefy is again addressed in this issue of Signals, but from the viewpoint of the impact of cargo liquefaction on ship safety during a voyage. The effect of cargo liquefaction and a creeping cargo shift, and the catastrophic result this can have for a ship's stability, serves to reinforce the importance of adhering strictly to the International Maritime Solid Bulk Cargoes (IMSBC) Code.

See page 10.

Ballast tank treatment systems – how will they treat your coatings?

Ballast tanks are getting a makeover. The International Maritime Organization (IMO) introduced the performance standard for protective coatings (PSPC) in the International Convention for the Safety of Life at Sea (SOLAS) regulations for ballast tank coatings in 2007, and now the Ballast Water Management Convention is getting close to being ratified. This will require most ships designed to carry ballast to treat their ballast water and remove the majority of viable organisms.

Once the convention is in force, there will be a rapid implementation timetable from 2012 so shipowners are already starting to choose which types of ballast water treatment system to install. But can the choice of ballast water treatment system have an effect on the ballast tank coating?

Types of ballast water treatment

Of the 20 currently approved ballast water treatment systems, most use a mechanical first stage to filter out the larger organisms. This is followed by a chemical reaction or a physical effect that kills the organisms. Some of the chemical systems also have a neutralisation step when de-ballasting to ensure any un-used oxidising agents do not contaminate the water discharged.

The predominant method is to use oxidising chemistry to kill the organisms in the ballast water (just like bleach is used to kill germs). How much of the oxidising agent is needed varies depending on the chemical species present.

Systems approved by IMO have been through a rigorous process to demonstrate that the number of specific viable organisms after treatment is less than a specified number per millilitre of water. This is measured by using test water that has initial minimum levels of individual organisms. However, this also means that if the ballast water contains fewer organisms then there is an excess of oxidising agent and vice-versa. If there are no more organisms for the oxidants to work on then the risk is they start to work on other materials present, such as the coatings.

Ballast Treatment Water Treatment

Ballast		Treatment			De-Ballast
Mechanical	→	Physical	and or	Chemical	→ Neutralisation on de-ballasting
Filtration to remove larger organisms		De-oxygenation e.g. nitrogen saturation Cavitation Ultrasound		Electrochlorination Chlorination Ozonation Chlorine dioxide Peracetic acid UV radiation	Sulphite/ bisulphite addition

Potential effect on ballast tank coatings

The PSPC requires ballast tank coatings to be tested and applied to a standard so that they may achieve a 15-year life. This requires that they are tested for corrosion protection with normal seawater. Treated ballast water has a different composition and there is no requirement to test its impact on ballast tank coatings or the potential for corrosion. As part of treatment systems approval, IMO asks if the effect on coated and uncoated materials has been assessed, but this is not mandatory and no tests or results are made public.

Ballast water treatment systems that use oxidising agents may have an impact on the coatings themselves as well as on the rate of corrosion if the coating is damaged in any way. A number of variables will influence any coating effects including the type and quantity of oxidising agent, the level of organic organisms in the water and the specific type of coating used.

With over 60 approved ballast tank coatings and 20 approved ballast water treatment systems so far, every coating and every system will not be tested together. But systems can be tested with specific types of ballast tank coatings, such as a pure epoxy or a modified epoxy, to demonstrate compatibility.

Another question is how to run such tests? A factor that may influence the effect on coatings is a ship's trading pattern. Some ships ballast at least once a week while others go for months without any change in ballast. Ships that regularly take on ballast



Poor tank condition



Good tank condition

could put the tank coatings at greater risk once a treatment system is installed, as any oxidising agents are replenished each time ballast is taken on. Any testing should therefore replenish treated water regularly to test the worst-case scenario and mimic conditions in a ballast tank which the coating test for PSPC approval testing was designed to do.



Watch outs

Owners trying to decide on the best ballast water treatment system for their vessel will require a lot of detailed information from equipment suppliers. Different systems are suited to different types of ships and operational requirements. In particular owners should ask to see actual corrosion-testing data to show the system is compatible with the type ballast tank coating used.

As with all equipment, contracts should be in place for system maintenance, repair, and operational performance. Owners should also ask how it would be known that the treatment system was not working, what would happen when the system over-treats the water and tanks have twice the level of oxidants present, and what would happen if the ballast coating fails.

Repairing a ballast tank coating to PSPC standards is very costly and time-consuming. Effects of a ballast water treatment on tank coating and corrosion thus need to be properly understood, otherwise the ballast tank makeover may not turn out the way everyone hoped.

The Club is grateful to Dr Lynda Speed at Safinah Ltd for providing this article.

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Dr Lynda Speed
Safinah Ltd

LOF 2011 simplifies container salvage claims

A new edition of Lloyd's Standard Form of Salvage Agreement, LOF 2011, has been published. It introduces sensible changes to facilitate salvage claims involving multiple cargo interests.

Changes to arbitration clauses

LOF 2011 introduces three changes to Lloyd's Standard Salvage Arbitration Clauses.

Changes to clause 13 address the representation of multiple container interests. A container operator may issue hundreds, maybe thousands, of bills of lading and until now salvors had to issue notices against each individual owner, which was both time consuming and expensive. The new clause 13 allows service of all notices upon the party which has issued security for that interest – usually the cargo underwriter. This change will simplify procedures and facilitate settlement.

Changes to clause 14 address the problem of unrepresented cargo interests delaying or preventing settlement. The new clause allows the arbitrator to bind unrepresented cargo interests to any settlement that has been agreed by 75% (by value) of represented interests.

Changes to clause 15 allow the arbitrator to excuse low-value cargo interests from any liability in salvage, especially when the costs would be disproportionate to their share of any award. This change removes the obstacle of low-value cargo interests which have little to lose impeding settlement by higher value interests.

Awards published online

Details of Lloyd's salvage awards are to be made available to subscribers via Lloyd's website. This change removes the traditional confidentiality of salvage arbitration and is intended to strengthen confidence in Lloyd's salvage jurisdiction by allowing greater transparency into how awards are calculated. The precedent of published awards will also provide greater certainty and facilitate settlement.



Eamon Moloney
Senior Executive (Claims)

The new LOF 2011 procedures will particularly assist claims involving multiple cargo interests and the new generation of large container ships. Procedures will be more transparent, more streamlined, quicker and cheaper. It is hoped they will also encourage settlement.

Interestingly, LOF 2011 does not address salvors' demands for additional compensation for their efforts to avoid environmental damage. In respect of 'environmental salvage', P&I clubs believe the existing Special Compensation P&I Clubs (SCOPIC) clause is adequate and working properly.

Members can view or download information about LOF 2011 from Lloyd's website:

<http://www.lloyds.com/The-Market/Tools-and-Resources/Lloyds-Agency-Department/Salvage-Arbitration-Branch/Lloyds-Open-Form-LOF>

Armed guards – are they up to the job?

The relative success of coalition naval forces in the Gulf of Aden and a change in the operational practices of Somali pirates has resulted in a significant increase in the number of attacks taking place in the wider Indian Ocean. Attacks are no longer curtailed by the monsoon season, and the number and severity of violent threats towards captured crew has also increased.

As part of the ongoing struggle to mitigate the risks of a piracy attack, coalition forces and key industry stakeholders released the latest edition of best practice guidelines and protection measures for ship owners and operators in August 2011, entitled Best Management Practices for Protection against Somalia Based Piracy (BMP4).

Use of armed guards

North strongly endorses the adoption of BMP4 and in particular the statement that use of armed guards should be considered as an additional layer of protection and not as an alternative to the self-protection measures contained in BMP4, or additional measures recommended by a vessel's flag state.

The decision on whether to use armed guards or not is a complex one, which has in some way been assisted by recent IMO guidelines contained in IMO maritime safety committee (MSC) circular MSC.1/Circ.1405 providing guidance to shipowners, ship operators and shipmasters on the use of private contracted armed security personnel on board ships in the high risk area. Further guidance was approved by an IMO intersessional working group which met in September 2011. The following circulars relating to the use of privately contracted armed security personnel on board ships in the high risk area were approved for dissemination:

- MSC.1/Circ.1405/Rev.1 on revised interim guidance to shipowners, ship operators and shipmasters.
- MSC.1/Circ.1406/Rev.1 on revised interim recommendations for flag states.
- MSC.1/Circ.1408 on interim recommendations for port and coastal states.

The guidelines to ship operators stress the importance of carrying out detailed risk assessment when contemplating the use of armed guards. They also emphasise the need to perform detailed due diligence on



Photo courtesy of G4S Maritime Security Solutions

any private maritime security firm before contracting with it to provide such guards.

In addition, the guidelines stress the overriding responsibility of masters for the safety, security and protection of their vessels. There should be an established structure of command between the master and a contracted security company, and clear and detailed rules on the use of force must be discussed with all interested parties before a voyage commences. Other issues include reporting of incidents, crew training and the appropriate carriage and licensing of weapons.

Vetting programme

To assist Members determine the suitability of private maritime security contractors, North, in partnership with Gray Page Intelligence Services has launched a vetting programme to help identify the capabilities of prospective security contractors.

The Armed Maritime Security Provider Vetting Programme is intended to ensure the operating practices of contractors are appropriate and exceed standards described in IMO guidance publications that include MSC.1/Circ.1405. Developed by Gray Page, the programme examines every aspect of a contractor's business practice including corporate governance and rules on the use of force.

A successful vetting result demonstrates that, at the time of vetting, the company's contract,

governance and standards of operation achieved the minimum acceptable standard required by a shipowner or operator contemplating the use of armed security contractors on board a vessel entered with North.

Contracts can vary enormously, from well-drafted agreements which provide comprehensive protection, to one-page documents offering nothing but ambiguity that could lead to a potential legal minefield should a dispute arise.

Working closely with Members, the Club has identified seven contractors most frequently considered for appointment and invited this group to undergo the vetting programme. North will continue to review the contracts of prospective companies offering armed guard protection as part of the vetting programme.

The Club has published a Club Circular and a set of answers to frequently asked questions about the vetting programme which can be downloaded from the Club's website: www.nepia.com

Members requiring more information should contact a member of North's piracy contract review team: PiracyContractReviewTeam@nepia.com



The benefits of taking part in USCG investigations

The US Coast Guard's (USCG) statutory mandate to investigate marine casualties is well known throughout the maritime industry (US Code 46 U.S.C. § 6301). What may be less familiar is the statutory right of a 'party in interest' to participate in USCG investigations (US Code 46 U.S.C. § 6303).

Participation in the USCG investigations is particularly useful in circumstances where another vessel's interests are involved. A party in interest will have an opportunity to be present when the other vessel's master and crew are interviewed, to request that other witnesses be interviewed, and to be present when the other vessel is inspected. Where formal hearings are held by the USCG, a party in interest will have the additional rights to cross-examine witnesses under oath and to present witnesses on its own behalf.

Who is a 'party in interest'?

The term 'party in interest' is defined by federal statute (US Code 46 U.S.C. § 6303) as:

- a vessel owner
- any holder of a license or certificate of registry
- any holder of a merchant mariner's document
- any other person whose conduct is under investigation
- any other party in interest.

This has been supplemented by a regulation to include any person who the USCG finds to have a 'direct interest' in the investigation, which is a potentially wide-ranging group (US Code 46 C.F.R. § 4.03-10).

When does USCG designate parties in interest?

To participate fully in an investigation, a party must be designated by USCG as a party in interest.

By way of background, USCG has developed four levels of investigation – preliminary investigation, data collection, informal investigation and formal investigation. The level of investigation depends on the nature

and scope of the casualty, and runs from a telephone inquiry up to a full-blown hearing in which witnesses are called to testify under oath. Although the level is left to the discretion of the investigating officer, USCG has prepared internal guidelines to consider in making that determination. These consider factors such as whether the casualty has resulted in (a) death or serious personal injury, (b) property damage exceeding certain amounts, (c) a condition affecting the seaworthiness of the vessel, and (d) a discharge of oil or hazardous cargoes into the water.

A party in interest could theoretically be involved at any level of investigation but typically will not become involved until the informal or formal investigation level. If USCG has not made a party in interest designation, the party involved must take the initiative and request such a designation.

Why seek party in interest status?

Without being designated a party in interest, a party involved in a casualty cannot participate fully in the investigation. Moreover, the importance of participating in a marine casualty investigation, particularly at the informal and formal levels, cannot be overstated.

Depending on the type of casualty involved, participation in a informal investigation would include the right to be present during interviews of witnesses, such as the master and crew of the other vessel involved in the casualty, to be present during USCG's inspection of the vessel(s) involved, to present evidence to USCG, and to request that certain witnesses be interviewed. The right to be present during interviews of the crew members from the other vessel may also extend to asking them questions concerning the casualty.

The opportunity to hear responses to questions from an opposing vessel's crew just days or perhaps even hours after a casualty is unique and should be grasped. Inevitably, witnesses' memories fade with time, or by the time formal legal proceedings are underway months or years later, the witnesses may no longer be available to provide testimony. The

appropriate time to seek party in interest status is early on in USCG investigation.

Participation in a formal investigation carries additional rights during the hearing stage to cross-examine witnesses called by USCG or other parties in interest, and to call witnesses to testify on one's behalf. Here again, access to testimony from witnesses from the other vessel, for example, will be of great assistance in developing how the casualty occurred for use in any future litigation.

There is also the opportunity to present evidence in support of the party in interest's version of how the casualty occurred. In the event there is a potential for civil or criminal penalties resulting from the investigation, the opportunity to present favourable evidence should not be lost.

Conclusion

A USCG marine casualty investigation can provide a wealth of information for those parties involved in the casualty. As a party in interest, the scope of that information can be expanded greatly by early and full participation in the investigation. For most casualties, the opportunity to participate fully in the investigation should be seized at the earliest opportunity.

The Club is grateful to Kirk Lyons of Lyons & Flood, LLP, for providing this article.

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New hours-of-rest regulations in 2012

Members are reminded that the 2010 Manila amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and Code will enter into force on 1 January 2012 under the International Maritime Organization's tacit acceptance procedure.

The amendments are aimed at bringing the convention and code up to date with developments since they were initially adopted, and to address issues anticipated to emerge in the foreseeable future.

Although some of the changes will not be fully introduced until 2017, the new minimum hours-of-rest rules will be enforced from 1 January 2012. Members should ensure that they are compliant with the hours-of-rest regulations to avoid any difficulties during port state control inspections.

A detailed article about hours-of-work regulations was published in Signals issue 82 which may be viewed or downloaded from the Club's website:

www.nepia.com/loss-prevention/publications-and-guides/signals/



Keeping fit and healthy at sea

Most seafarers are aware of the dangers of obesity, heart disease and diabetes and that they can reduce the risks by eating healthily and exercising frequently. However, this can be hard to put into practice at sea.

Long hours, poor weather, no gym equipment or place to exercise, no control over the vessel's menus and easy access to food and drink at most times of the day and night are all obstacles that seafarers need to overcome to eat healthily and exercise frequently. This article looks at some simple steps they can take to improve their fitness.

Measuring fitness

Good indicators of fitness level are resting heart rate combined with a step test. To measure resting heart rate, sit down for five minutes, take your pulse and then compare this against the first table on the opposite page. If you do not know how to take a pulse, seek assistance from someone on-board who has completed a medical course.

Once the resting heart rate test is completed do a step test. Do not attempt the step test if the resting heart rate is in the weak category.

- Use a step 20–30 cm high.
- Stand about 30 cm away from the step.
- Place your hands on your hips.
- Keep your head and back straight.
- Step up and down repeating the following sequence: left foot up, right foot up, left foot down, right foot down.

Maintain normal breathing and continue the test as fast as possible for 3 minutes. After the test sit down for 30 seconds and measure your heart rate again by taking the pulse, and compare this against the second table on the opposite page.

Once complete, the two tests should give you some idea of your general level of fitness. They can also be used periodically during fitness programmes to check improvement. If either test result is in the weak category, consult a doctor before undertaking any further strenuous exercise or training.

Taking exercise

After the fitness indicator has been completed it is time to start exercising. To get the most benefit from a training regime the aim should be to train above 60% of maximum heart rate, which is 220 minus age in years.

For example, a man aged 30 would have a maximum heart rate of $220 - 30 = 190$ beats per minute, and he should aim to train with a heart rate of $190 \times 60\% = 114$ beats per minute.

A gym is not necessary to train – there are lots of exercises that can be completed in small spaces without equipment. These include walking or running on the spot, lying on your back and cycling in the air, using a step, press-ups, standing leg thrusts, small vertical jumps, 'swimming' on the spot, leg lifts, skipping and many more.

Every session should include a warm-up to get your heart rate up to 60% of maximum heart rate and to help prevent injuries. A typical on-the-spot session might include the following.

- 5 minutes warm up – walk or jog on the spot for around 5 minutes, exaggerating arm motions.
- 20 minutes training above 60% of your maximum heart rate.
- 5 minute cool down including controlled stretches – cool down with an easy walk or jog on the spot followed by some stretching.

During the training session, repeat a series of exercises until the time goal is reached. Each exercise should take about 20–25 seconds with a rest period of about 15 seconds between exercises. The following are examples of exercises that can be undertaken.

- **Breast stroke** – as in swimming, use large movements right round the body, keeping your elbows up. Move in reverse after first set.
- **Baby jumps** – small jumps on the spot. Keep legs soft and springy and do not have straight legs as this may damage the knees.



- **Front crawl** – another swimming move, lean forward from the hips keeping your lower and upper back stable and straight throughout the movement. After 25 seconds do the same but in reverse.
- **Step ups** – step up and then down again. Increase the height of the step to increase intensity.
- **Skipping** – land on both feet as softly as possible. Try to establish rhythm and increase speed to increase intensity.

Exercise tips

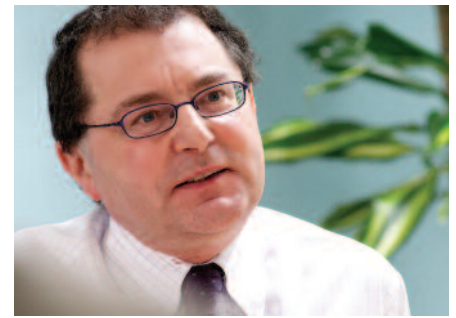
Remember not to overdo exercise to start with, and enjoy the sense of well-being afterwards. A specific goal can be a good motivator, for example setting modest targets for improvement. These could be improvements in resting heart rate or the

step test. Specific weight-loss goals can also be of benefit.

Make exercise part of your routine and fit it around the working day or watch-keeping pattern. Get others involved – having a group or even just one other training partner makes motivation much easier. Finally, always remember that your health is your responsibility.

Information for this article was provided by and used with the kind permission of the International Committee on Seafarers' Welfare.

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Reducing US medical fees

North recently managed to obtain a reduction of over 90% on crew medical expenses incurred by a Member in the USA.

The original hospital bill was for about US \$7,000. Believing this to be excessive, the Club appointed a medical auditor which charges a percentage of the amount saved – if no savings are made, no fees are due.

The example shows that large discounts can be obtained, even where the original charges are relatively small and may be below a Members' P&I deductible. Members incurring crew medical expenses in the USA which fall below their deductibles are therefore encouraged to contact the Club prior to payment for details of recommended auditors.



Age	Heart rate at rest (heartbeats per minute)							
	Male				Female			
	Weak	Medium	Good	Excellent	Weak	Medium	Good	Excellent
20–29	86+	70–85	60–69	61 or less	96+	78–95	72–77	71 or less
30–39	86+	72–85	64–71	63 or less	98+	80–97	72–79	71 or less
40–49	90+	74–89	66–73	65 or less	100+	80–99	75–79	73 or less
50+	90+	76–89	68–75	67 or less	104+	81–103	76–83	75 or less



Age	Heart rate after step test – after 30 seconds rest (heartbeats per minute)							
	Male				Female			
	Weak	Medium	Good	Excellent	Weak	Medium	Good	Excellent
20–29	102+	85–101	75–84	74 or less	112+	93–111	87–92	86 or less
30–39	102+	87–101	79–86	78 or less	114+	95–113	87–94	86 or less
40–49	106+	89–101	81–88	81 or less	116+	95–115	89–94	88 or less
50+	106+	91–105	83–90	82 or less	118+	99–117	91–98	90 or less



Asian gypsy moths: the net widens



Photograph courtesy of Ferenc Lakatos, University of West-Hungary, www.forestryimages.org

The Canadian Food Inspection Agency's directive D-95-03 sets out entry requirements for ships arriving in Canada from ports in all areas where there is deemed to be a high risk of Asian gypsy moth infestation.

The additional 'regulated areas' are not necessarily infested with Asian gypsy moths but are deemed by the Canadian authorities to

have a high risk of infestation. The directive includes as high risk all ports in China north of Shanghai and in the Republic of Korea, Japan and Russian Far East, even though they may not actually be infested.

Because of the changes introduced by the directive, the Club has updated its recommended Asian gypsy moth charterparty clause (see right).

Asian gypsy moth clause

When Charterers direct the Vessel to any port and/or regulated area identified by any competent authority as being one where the risk of Asian Gypsy Moth infestation is "high" Charterers shall, at Charterers' time and expense, undertake to arrange for a certificate to be issued by the appropriate authority for such port/regulated area certifying that the vessel is free from infestation by Asian Gypsy Moth or its eggs, and Owners shall not be held responsible for any consequences or delays at the next destined ports.

For up-to-date information please see the Industry News section of the Club's website: www.nepia.com/publications/industrynews

UK Bribery Act applies to all North business worldwide

The UK Bribery Act 2010, which came into force on 1 July 2011, is possibly the most extensive piece of anti-bribery legislation in the world. It introduces changes under United Kingdom law that apply to the Club and its Managers in relation to all business transacted both in the United Kingdom and abroad.

Bribery is defined as the offering, promising, giving, accepting or soliciting a financial or other advantage as an inducement or reward for the improper performance of a relevant function or activity. There are four offences created under the Bribery Act, as follows.

- Bribing another person – it is an offence for a person to offer, promise or give a financial advantage to another person intending the advantage to induce a person, or reward a person, for the improper performance of a relevant function or activity.
- Receiving a bribe – it is an offence for a person to receive, accept or solicit a bribe.

- Bribing foreign public officials – it is an offence to bribe a person who holds a legislative, administrative or judicial position of any kind in a country or territory outside the UK, or who exercises a public function for and on behalf of a territory outside the UK. This offence is committed if a person offers, promises or gives any advantage to such a foreign public official or to another person at the foreign public official's request or with their consent.
- Failure of commercial organisations to prevent bribery – a commercial organisation is guilty of an offence if a person associated with it bribes another person with the intention of obtaining or retaining business or advantage in the conduct of business for that organisation. This is effectively a failure by the commercial organisation to prevent an offence under the Bribery Act.

Individuals found guilty of any offences under the Act can be imprisoned for up to 10 years and/or receive unlimited fines. If a

company is found guilty, a senior corporate officer (such as a director, manager, secretary or similar officer) can be imprisoned for up to 10 years and/or receive an unlimited fine if the court decides they have given their 'consent' or 'connivance' to the offence.

To comply with the requirements of the Bribery Act, North has drafted an anti-bribery policy and code of conduct. The Club and its managers have also adopted a zero-tolerance policy in relation to bribery and corruption and are committed to acting professionally, fairly and with integrity in all of North's business dealings and relationships.

The zero-tolerance policy extends to all of the Club's business partners. Members, correspondents, brokers and any other third parties conducting business with North should contact the Club's managers if they have any questions or concerns regarding the effect of the Bribery Act or its application.



Mark Robson
Associate Director

Beware non-English bills of lading

Masters are invariably under an obligation to sign bills of lading as presented. In the vast majority of cases the bill of lading will be in English, which remains the principal language of the international shipping industry. However, there are occasions when a bill of lading is presented in a language other than English that the master may not speak or understand.

The question then arises as to whether or not the master should agree to sign or authorise the issue of such a bill of lading by the charterer or agent. The short answer is that no decision should be made without further investigation.

Masters should never sign, nor authorise to be issued, a bill of lading they do not understand. To do so, without knowing what the document actually says, exposes the owner or carrier – on behalf of which the bill of lading is issued – to the real risk of claims being made if the bill of lading does not in fact accurately describe the cargo as loaded. It could also adversely affect a Members' P&I cover.

It may of course be appropriate for a master to sign a bill of lading in a language they do not understand if they are happy that what appears on the bill of lading is correct. For example, they could have asked the Club's local correspondent to check the wording and confirm whether it appears to be accurate.

Masters should not however rely on the assurances of other parties who might have an interest in the cargo, such as the shipper, without some form of independent verification. If in any doubt, masters and Members should contact the Club or local correspondent for further help and guidance.

Containers – responsibility for loading and stowing onboard

With the growth in containerised cargo, an old problem regarding responsibility for loading and stowage reappears in a new light.

In many time charterparties, responsibility for loading, stowing and discharging cargo lies with the charterer unless specifically allocated to the owner. The English courts have decided that if the parties allocate responsibility for stowage to charterers – as permitted by the Hague-Visby Rules – then that is where the commercial responsibility should lie. Under these circumstances the charterer's responsibility extends even to matters that affect the seaworthiness of the vessel and an owner will only be liable should the master intervene in arrangements for stowage.

Stowage of dangerous goods

Problems may arise in connection with the stowage of containers onboard, particularly the requirements of the International Maritime Dangerous Goods (IMDG) Code for segregation and stowage of dangerous and/or incompatible cargos. The IMDG Code requirements are well known and everyone involved in loading and stowing of containers on board the vessel can reasonably be expected to follow them.

But what happens if a charterer, probably via its stevedores, stows a containerised cargo on board in breach of the segregation and stowage requirements? Under these circumstances are masters expected to intervene and are owners responsible if they do?

If under the charterparty the charterer is responsible for loading and stowing containers onboard, then he is expected to know and to follow, all current regulations on segregation and stowage. Masters do not owe charterers any duty to intervene if they become aware of a breach of the separation requirements.

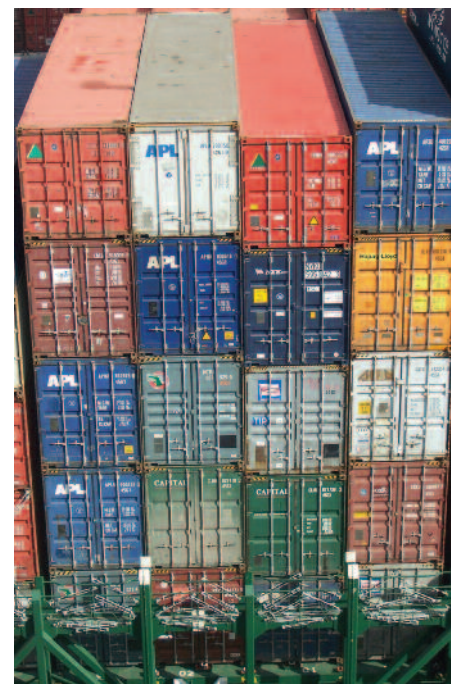
Risk of not intervening

If a master does not intervene, contractual responsibility for any damage directly attributable to incorrect stowage remains with the charterer.

A master becoming aware of a breach should protest and require re-stowage, 'in accordance with the IMDG Code', leaving the detail and the method of re-stowage to the charterer. Under these circumstances, the responsibility and any associated costs should remain with the charterer for so long as the problem was caused by its failure to comply with the regulations and not by any peculiarity of the ship.

Everyone involved in operating ships would agree that a master cannot stand by and allow containers to be loaded and stowed in breach of international regulations and in a way that endangers the ship. Notwithstanding this commonsense view, commercial law suggests that even under these circumstances a master does not owe the charterers any duty to intervene as to reach the alternative conclusion would mean the worse that the charterers perform their responsibilities for stowage, the better their position.

Responsibility for stowage of containers on a ship can of course be affected by a range of charterparty obligations and provisions. If masters become aware of dangerous stowage of containers they should protest and require re-stowage in accordance with the IMDG Code.





Limiting the impact of liquefied bulk cargo on ship stability

The tragic spate of bulk carrier accidents in the last quarter of 2010 has served to illustrate the dangers of liquefaction of some types of bulk cargo at sea. The fact that the International Maritime Solid Bulk Cargoes (IMSBC) Code has become mandatory reflects the alarm felt by many stakeholders in maritime transportation. Despite the introduction of this code, the concerns continue in the face of apparent non-compliance of the detailed provisions given in the code by some shippers and ship operators, whatever the reason.

How liquefaction occurs is well documented in the code as well as in articles written by industry experts, although when it occurs and how liquefied bulk material behaves is still a bit of a mystery because of its unpredictable nature. In this short article a brief examination is made on what impact cargo liquefaction has on ship safety.

The dangers that high-density liquefied bulk material poses on ship safety include increased structural load due to movement of the cargo and the rather dramatic effect on ship stability. Although the structural problem is also serious and requires attention, in this article only the stability-related issues will be considered.

Free-surface effects

Most people, especially naval architects, think about 'free surface effect' at their first encounter with the cargo liquefaction problem. It is a concept universally accepted in dealing with slack tanks containing fluid in ships. As such, it will be useful to revisit this idea to identify its limitations.

The free-surface effect is calculated based on a 'static' cargo shift. A solid ship will experience a positive righting moment when heeled to an angle within the range of positive stability. However, if the ship has any slack tanks containing fluid (or any other free-flowing material), the fluid will

move so that its free surface regains a horizontal attitude.

The shift of fluid due to heel produces a 'heeling moment', which opposes the righting moment of the ship. Therefore, the net righting moment of the ship is the righting moment of the solid ship minus the heeling moment caused by the shift of the fluid. At very small angles of heel, the effect of free surface can be simply regarded as a rise of the centre of gravity of the ship and the consequent reduction in the metacentric height or 'GM'.

A simple example

A quick calculation by way of an example: for a 27,000 DWT bulk carrier (length between perpendiculars 170 m, breadth 22.8 m, draught 10.5 m, vertical centre of gravity 4.5 m above baseline) with a relatively high solid GM of 5.0 m) carrying iron ore of density 2.5 t/m³, all of which is assumed to have liquefied into a homogeneous 'gooey' fluid, gives an alarming result of a 6.0 m reduction in GM due to free-surface effect (with a consequent negative GM fluid). This can lead to rapid capsize or, at best, a dangerous list.

If a list is developed as a consequence of negative initial GM, it is extremely dangerous to try to regain uprightness by ballasting on the opposite side, because the angle of loll due to negative GM exists equally on both sides, unlike in the case of a list developed purely as a result of cargo shift.

Experiencing an abrupt drop in GM of such magnitude can only be described as catastrophic, akin to all three tall men in a small boat suddenly standing up together. As can be seen, despite the crudeness of the calculation, it does give an impression of

the scale of the problem. The idea is easy enough to follow and the calculation of the free-surface effect is relatively simple. Unfortunately, however, this is an oversimplification, principally because ships are hardly ever static.

Creeping cargo shift

There are many types of fluids that can be found on board a ship either as cargo or stores, ranging from low-viscosity fluids such as light oil and water to high-viscosity fluids such as molasses. Indeed, some dry bulk material with a very low angle of repose should also be considered as a fluid when considering a vessel's stability.

Fluids do not, in general, follow the roll motion of the ship exactly as the free-surface-effect concept would have it. The motion of fluids of very high viscosity is characterised as 'over-damped' and generally cannot catch up with the motion of an ordinary ship. For example, when a ship reaches 10° starboard in the outward phase of a roll cycle, the surface of a fluid cargo of high viscosity may have moved only to 3°. In this example, the heeling moment produced by the cargo shift will be much smaller than what the simple free-surface effect would suggest.

However, the situation presents its own danger when there is an offset of the mean roll angle from the upright, for example, due to steady wind on one side of the vessel. Then the ship will tend to roll about the angle at which the wind heeling moment is equal to the righting moment of the vessel (known as the first intercept or angle of equilibrium) (see Figure 1).

Consequently, viscous cargo will have time gradually to take on the mean roll angle.



This is clearly a case of cargo shift. Once the athwartship cargo shift occurs, this causes an additional heeling moment amounting to:

$$w \cdot gg_1 \cos(\theta)$$

where

- w is the mass of the fluid in the hold
- gg_1 is the horizontal movement of the centre of gravity of the fluid
- θ is the angle of roll/heel.

The increased heeling moment, in turn, pushes the angle of equilibrium further and introduces yet more additional heeling moment (see Figure 2).

A vicious circle sets in and creeping cargo shift will be the result until an overall equilibrium is reached (i.e. the increase in cargo shift heeling moment is cancelled out by the decrease in wind heeling moment for example) or the ship capsizes (e.g. roll motion exceeds the down-flooding angle or the second intercept).

The heavier the cargo, the more acute the effect will be. Despite the expression 'creeping', a bad situation can develop very rapidly through this mechanism.

If the liquefied bulk cargo is considered to behave in a similar manner as fluids of high viscosity, the creeping cargo shift will certainly be one of the dangers, as evidenced by its mention in section 7.2 of the IMSBC Code. This danger is compounded by the unpredictable behaviour of some bulk cargoes liable to liquefaction, characterised by sudden liquefaction and equally sudden and unexpected solidification.

The impact of such unpredictable cargo behaviour on the ship motion is not easy to assess, primarily because the dynamic characteristics of the liquefied bulk are not

well understood at present time. In the meantime, suffice it to say that this is a highly undesirable situation from a ship-stability point of view.

Way forward

How can the shipping industry improve the safety of bulk carriers carrying cargoes prone to liquefaction?

While strict adherence to the provisions given in the IMSBC Code is required, it has become obvious that enforcement of the code is problematic. Education and training of seafarers and shippers will certainly help the matter. If, however, the code is followed, much of the ore produced in certain parts of the world will be precluded from transportation unless some de-moisturising treatment is undertaken.

Introduction of longitudinal hold divisions would reduce the extent of cargo shift and therefore reduce risks considerably. But in view of the massive forces expected on these divisions, they must be of sufficient strength. Moreover, divisions of this type are more than likely to interfere with the loading and unloading processes.

Ships specially designed to carry such cargo, for example with narrow cargo holds, can be built or existing ships can be modified for such duty. This will take time, but certainly it is one of the best solutions. The main problem, however, that knowledge on the behaviour of liquefied cargo and its impact on ship safety is still quite limited.

Certainly it is likely that the majority of general ore and bulk carriers are ill-equipped to carry liquefied cargo in the first place and not very much can be done to rectify the situation on a temporary basis.



Dr B S Lee
Safety at Sea Ltd

Even ships specially designed to carry similar materials, such as sludge carriers, get into difficulties every now and then.

Liquefaction is a hazard that is known to lead to unacceptable risk. Therefore, ships carrying cargoes prone to this hazard must be designed and operated to be 'fit for purpose'. This is a step that the maritime community now has to take, collectively and through concerted effort involving all stakeholders. The industry owes it to all those seafarers who have lost their lives due to cargo liquefaction.

The Club is grateful to Dr B S Lee of Safety at Sea Ltd for providing this article.

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Figure 1: Initial angle of equilibrium

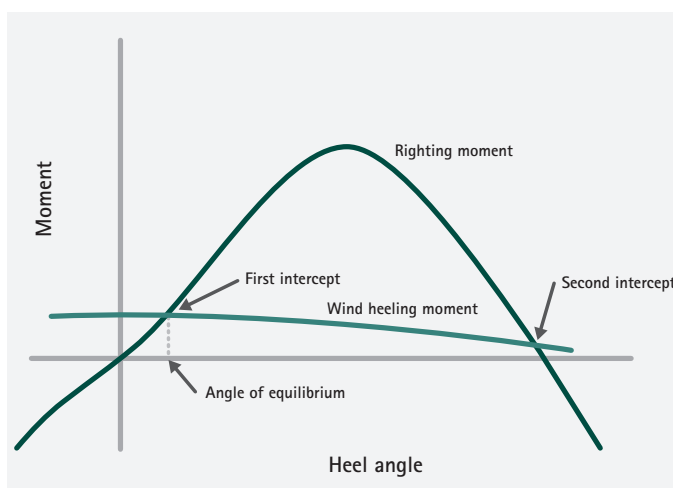
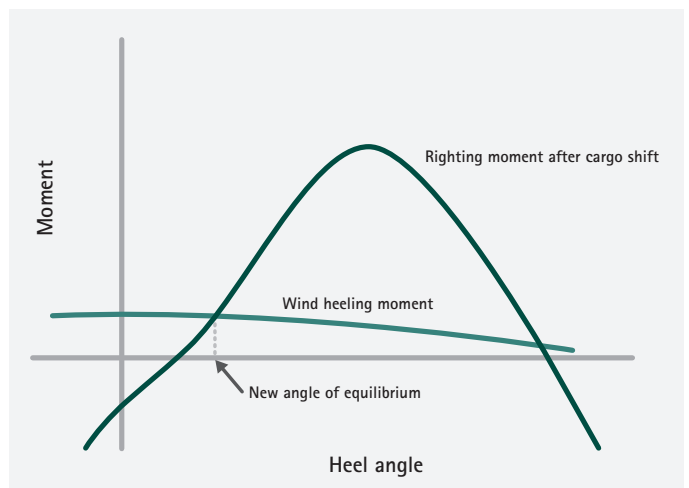


Figure 2: Angle of equilibrium creeping up due to cargo shift





Peter Scott
Senior Executive (Claims)

Club appointment of surveyors

North occasionally helps its Members by appointing surveyors or other experts to examine cargoes and provide advice and assistance to masters on their safe loading, stowage and carriage. However, this sometimes leads to confusion about the role of those appointed.

A typical example is the appointment of surveyors or experts to advise whether the mandatory requirements of the International Maritime Solid Bulk Cargoes (IMSBC) Code for the provision of proper information and declarations for a solid bulk cargo have been complied with by shippers.

It is important to note that all such appointments are made by the Club on behalf of Members and that the surveyor or expert acts on behalf of the Member rather than the Club.

The surveyor's or expert's role in such circumstances is to advise a Member about the safe carriage of cargo and compliance with statutory requirements including, in particular, those of the vessel's flag state. In the case of bulk cargoes, this includes being in accordance with the requirements of the International Convention for the Safety of Life at Sea (SOLAS) and IMSBC Code.

A surveyor or expert appointed on behalf of a Member can provide vital assistance and advice so that the Member can ensure that cargo can be carried safely and in compliance with statutory requirements.

IMO reduces shipping's greenhouse gas emissions

At its 62nd session in July 2011, the marine environment protection committee (MEPC) of the International Maritime Organization (IMO) introduced new regulations to reduce the emission of greenhouse gases from international shipping.

A new chapter 4 on energy efficiency was added to the annex VI regulations on air pollution in the International Convention for the Prevention of Pollution from Ships (MARPOL). It requires an energy efficiency design index to be stated for new vessels and a ship energy efficiency management plan to be maintained on all vessels. Ships in compliance will be issued with an international energy efficiency certificate.

Energy efficiency design index

The energy efficiency design index (EEDI) is an indicator of the fuel efficiency of a ship. It is measured in grammes of carbon dioxide emissions per deadweight tonne per nautical mile, such that the lower the figure, the better the fuel efficiency. Over time it is envisaged the maximum permitted EEDI will be reduced.

Ship energy efficiency management plan

The ship energy efficiency management plan aims to improve the efficiency of a vessel by the introduction of various management methods, such as improved voyage planning to increase fuel efficiency.

Application

The new regulations in chapter 4 will apply to all ships of 400 GT and above and are expected to enter into force on 1 January 2013, just over a year from now.

Waivers from compliance with the EEDI are available from individual flag state administrations. The waiver is time-based and cannot be applied where a building contract is placed four years after the entry into force of chapter 4, or where the keel is laid four years and six months after the entry into force date, or for which the delivery is after six years and six months after the entry into force. For major conversions, the cut-off for waivers is four years after the entry into force date.

EEDI is non-prescriptive and leaves the choice of technologies used attain the required level of energy efficiency to shipowners, designers and builders.

What next?

Further work on the energy efficiency measures for ships and related guidelines will be undertaken by MEPC and published in due course. The committee agreed a plan to continue the work on energy efficiency measures for ships, including development of an EEDI framework for ship types, ship sizes and propulsion systems not covered by the current requirements and related guidelines.

Meanwhile any Members considering placing new-build contracts after 2013 should consider carefully the energy efficiency technologies on offer that will best suit their budget and operational requirements. EEDI will also have to be taken into account in contractual arrangements for the new build. In addition it is likely that charterers will take into account the EEDI of a vessel and, indeed, EEDI figures are already available to charterers subscribing to ship vetting information provider RightShip.

However, whereas the introduction of global greenhouse gas emission standards for shipping has been welcomed by environmentalists, some governments and environmental organisations are questioning whether the regulations go far enough. As such, discussions at IMO in respect of market-based measures are ongoing.

A particular problem is the potential for shipping to be included in the EU's planned emissions trading scheme. Unilateral imposition of such a scheme in the most globalised of industries is undesirable and it is hoped IMO can come up with a market-based approach that will satisfy the EU and others that shipping is serious about reducing emissions.



Photo courtesy of Ronald Woehrn



EU sulphur directive amendments

Amendments were issued to EU directive 1999/32/EC on 15 July 2011 relating to the sulphur content of marine fuel oils. The stated purpose of the proposal is to revise the directive on the sulphur content of certain fuel oils to:

- align the directive with International Maritime Organization (IMO) regulations on fuel standards, including the standards applicable outside emission control areas (ECA)
- align the directive with the IMO rules on the emission abatement methods
- maintain the link between the stricter fuel standards in ECAs (now requiring maximum sulphur content of marine fuel of 1.0%, and 0.1% from 2015) and those applying to passenger ships on a regular service outside ECAs (at the moment 1.5%)
- strengthen the EU monitoring and enforcement regime.

The current 0.1% sulphur limit in fuel oils for ships 'at berth' in European ports remains in place. Of note is that the amended directive requires a maximum sulphur content of 3.50% for all marine fuel oils sold in EU ports. The thinking behind this is to remove poor quality fuel oils from the market within the EU.

Abatement of emissions using exhaust gas scrubbers and other technologies is also aligned with the IMO rules. The abatement methods should comply with annex II of the EU directive in respect of waste streams and emissions monitoring and record keeping.

Monitoring and enforcement

EU authorities have strengthened their monitoring and enforcement powers and may develop binding rules on the monitoring and reporting by individual member states to the EU Commission. Sample checking is likely to start on the date a limit enters into force and could take place during delivery, from tanks or from sealed bunker samples. The inspection of a ship's log books and bunker delivery notes is also allowed.

In effect the directive, although in line with IMO standards (see table), will introduce two different regulatory regimes into EU waters on a roughly north-south basis due to the presence of the North Sea and Baltic ECAs. From 1 January 2015, IMO limits for sulphur content in marine fuel oils in an ECA will be 0.1%, which will introduce a higher and more costly standard for

operators in ECA waters than that for those operating outside ECAs.

The EU directive will mandate that shipping within ECAs must comply with the requirement to have only 0.1% sulphur content in fuel by 2015. The remainder of European waters will be permitted 3.5% sulphur content in fuel from 2012 until 2020, and then only if a 2018 study reveals there will be sufficient supply of low-sulphur fuel. This will inevitably make trading to ports within the ECA more expensive, put shipping companies operating within the ECAs at a considerable economic disadvantage and could, potentially, result in the re-routing of cargoes through ports situated outside the ECA.



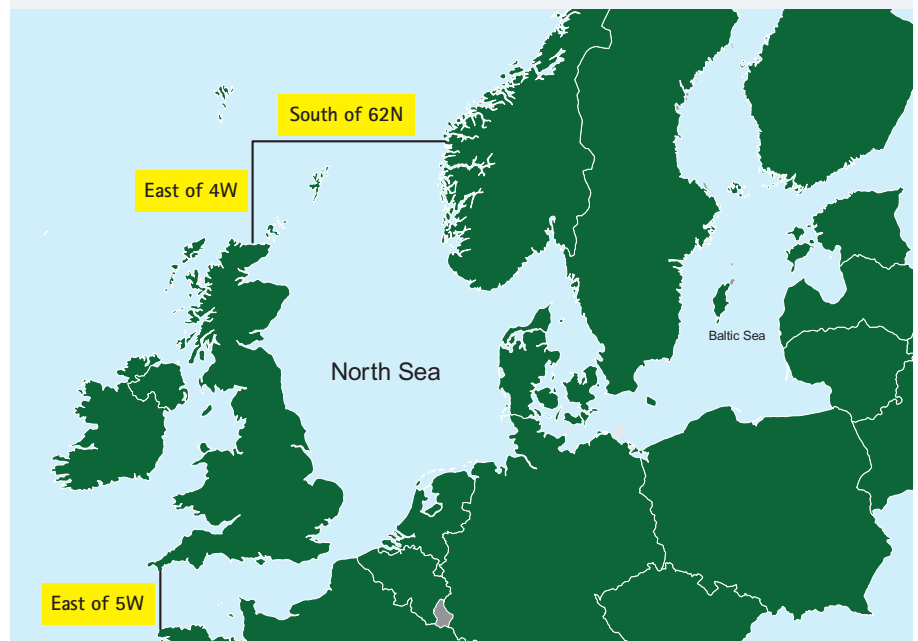
Colin Gillespie
Risk Management Executive

IMO Sulphur limits

International Maritime Organization (IMO) limits for sulphur content in marine fuel oils are shown below.

Maximum sulphur content	Location	Start date
1.00%	Within an ECA	1 July 2010
3.50%	Globally outside ECA	1 January 2012
0.10%	Within an ECA	1 January 2015
0.50%	Globally outside ECA	1 January 2020 subject to a review in 2018, but definitely by 1 January 2025

North Sea and Baltic Sea ECAs





IMO marine environment protection committee

The International Maritime Organization's (IMO) marine environment protection committee (MEPC) met for its 62nd session (MEPC 62) during July 2011. Matters discussed included adoption of amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL) to designate a new Caribbean emission control area, designation of the Baltic Sea as a special area in relation to pollution by sewage from ships, and to adopt revised garbage control regulations.

The committee also adopted the first-ever international recommendations to address biofouling of ships to minimise the transfer of aquatic species. A number of proprietary ballast water management systems were approved and guidelines were adopted related to implementing both the Ballast Water Management Convention and Guidelines on Ship Recycling.

Caribbean emission control area

Following approval at its last session, MEPC adopted MARPOL amendments to designate certain US waters adjacent to the coasts of Puerto Rico and the Virgin Islands as an ECA for the control of emissions of nitrogen oxides (NO_x), sulphur oxides (SO_x) and particulate matter under MARPOL annex VI regulations for the prevention of air pollution from ships. Another amendment will make old steamships exempt from the requirements on sulphur relating to both the North American and US Caribbean Sea ECAs. The MARPOL amendments are expected to enter into force on 1 January 2013, with the new ECA taking effect 12 months later.

Currently, there are two designated ECAs in force under annex VI, the Baltic Sea area and the North Sea area, while a third, the North American ECA, which was adopted in March 2010 with entry into force in August 2011, will take effect in August 2012.

Other air pollution issues

MEPC adopted guidelines for reception facilities under MARPOL annex VI and guidelines addressing additional aspects to the NOX Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with selective catalytic reduction systems.

Black carbon emissions in the Arctic

The committee agreed a working plan on addressing the impact in the Arctic of soot and other 'black carbon' emissions from ships. It instructed the sub-committee on bulk

liquids and gases to develop a definition for black carbon emissions from international shipping; consider measurement methods for black carbon and identify the most appropriate method for measuring black carbon emissions from international shipping. The committee is also to investigate appropriate control measures to reduce the impacts of black carbon emissions from international shipping in the Arctic and submit a final report to MEPC 65 in 2014.

Sewage: Baltic to be special area

MEPC adopted amendments to MARPOL annex IV on prevention of pollution by sewage from ships to include the possibility of establishing 'special areas' for preventing such pollution from passenger ships and to designate the Baltic Sea as a special area under this annex. The amendments are expected to enter into force on 1 January 2013.

Garbage regulations revised

The committee adopted the revised MARPOL annex V regulations for the prevention of pollution by garbage from ships, which has been developed following a comprehensive review to bring the annex up to date. The amendments are expected to enter into force on 1 January 2013.

The main changes include the updating of definitions; the inclusion of a new requirement specifying that discharge of all garbage into the sea is prohibited, except as expressly provided otherwise. The discharges permitted in certain circumstances include food wastes, cargo residues and water used for washing decks and external surfaces containing cleaning agents or additives which are not harmful to the marine environment. The changes also included the addition of discharge requirements covering animal carcasses.

Biofouling guidelines adopted

MEPC adopted the first set of international recommendations to address biofouling of ships to reduce the movement of aquatic species. The Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species will address the risks of introduction of invasive aquatic species through adherence of sea-life, such as algae and molluscs, to ships' hulls.

Ballast water systems approved

The committee granted final approval to two, and basic approval to seven, ballast water

management systems that make use of active substances, following the recommendations of meetings of the ballast water working group of the Joint Group of Experts on the Scientific Aspects of Marine Environment Protection (GESAMP).

MEPC also adopted a procedure for approving other methods of ballast water management in accordance with regulation B-3.7 of the Ballast Water Management Convention, which will open the door for new methods and concepts to prevent risks arising from the transfer of invasive species, provided that such methods will ensure at least the same level of protection of the environment as set out in the convention and are approved in principle by the committee.

MEPC reiterated the need for countries to ratify the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004, to achieve its entry into force at the earliest opportunity. To date, 28 states with an aggregate merchant shipping tonnage of over 25% of the world total, have ratified the convention. The convention will enter into force 12 months after the date it is ratified by 30 states with at least 35% of world tonnage.

Guidelines for bio-fuel cargoes

The committee approved guidelines for the carriage of blends of petroleum oil and bio-fuels, which set out carriage and discharge requirements for bio-fuel blends containing 75% or more of petroleum oil, which are subject to MARPOL annex I; bio-fuel blends containing more than 1% but less than 75% of petroleum oil, which are subject to MARPOL annex II; and bio-fuel blends containing 1% or less petroleum oil, which are also subject to MARPOL annex II.



IMO



IMO considers amendments to the IMSBC Code

The sixteenth session of the IMO sub committee on dangerous goods, solid cargoes and containers (DSC 16) met in London in September 2011. As the first session of the DSC to meet following the mandatory introduction of the International Maritime Solid Bulk Cargoes (IMSBC) Code in January 2011 it was anticipated that there would be a significant number of documents to consider. In light of this, the DSC established a working group to address amendments to the IMSBC Code.

With one hundred and fifty IMSBC submission documents presented for the attention of the committee under consideration of new entries and amendments to existing entries for schedules, it quickly became apparent that DSC would not be able to progress this material during DSC 16. The committee therefore also agreed to expand the terms of reference of the editorial and technical (E&T) group to include the preparation of amendments to the IMSBC Code and supplements. Consequently DSC approved two meetings of the E&T group for the preparation of the amendments to the IMSBC Code, with the first meeting scheduled to take place in March 2012 and the second DSC scheduled to take place following DSC 17 in the latter half of 2012.

Application and implementation of the IMSBC Code

Following concerns expressed by industry delegations, the working group proposed a revised definition for competent authority in section 1.7 of the code with the addition of the sentence "the competent authority shall act independently from the shipper".

A proposed revision of section 4.3 provides for a certificate of transportable moisture limit (TML) and moisture content to be provided to the master that has been issued by an entity authorised by the competent authority of the load port.

A proposed new paragraph 4.3.3 identifies the need for procedures for sampling, testing and controlling of moisture content prior to loading that ensure moisture content is maintained below the TML when the cargo is loaded on the ship. These

procedures are to be approved and their implementation checked by the load port competent authority. A document approving these procedures is to be presented to the master or his representative. This paragraph will be accompanied by a footnote drawing attention to guidelines to be developed by the IMO.

It was further suggested by the working group that a new paragraph is included to deal with cargo loaded from barges. This requires the shipper to provide procedures to protect the cargo from precipitation and water ingress.

A new paragraph 4.4.3 was developed requiring that for cargo which may liquefy, the shipper shall facilitate access to stockpiles for the purpose of inspection, sampling and subsequently testing by the nominated representative. It is hoped that this will assist Members loading in areas that currently prohibit access to stockpiles by the carrier's representative.

Test procedures for cargoes that may liquefy

The working group proposed a new paragraph in section 8 – test procedures for cargoes that may liquefy – regarding a complementary test procedure for determining the possibility of liquefaction.

There is evidence that the indicative "can test" under section 8 of the code is being used inappropriately to "pass" cargo for carriage. The can test is only able to provide an indication of when a cargo is in excess of its flow moisture point (FMP) and it cannot demonstrate that a cargo is safe for carriage.

As stated in the IMSBC Code, cargoes which may liquefy shall only be accepted for loading when the actual moisture content is less than the TML. Determining the accurate TML can only be achieved by testing cargo samples in a laboratory. In order to provide clarity the working group recommended the addition of a new sentence stating that "If samples remain dry following a can test, the moisture content of the material may still exceed the TML."

In addition to this statement the suitability of the can test as a means of ascertaining



Andrew Glen
Manager

moisture content was passed to the E&T Group for consideration.

Carriage of iron ore fines that may liquefy

There was an extensive debate on the proposal by the Brazilian delegation to revise IMO DSC.1/Circ.63 – Carriage of iron ore fines that may liquefy. It was considered by industry and a number of delegations that proposed changes would add confusion and pre-empt the work of the correspondence group established by the IMO to assess the characteristics of this cargo and determine a definition for iron ore fines.





New Clean Seas poster on ship-to-ship transfers

The final poster in North's Clean Seas series of environmental awareness posters focuses on ship-to-ship transfer procedures.

The increasing frequency and difficult nature of ship-to-ship operations make this an area where ship operators must focus on good practice to avoid not only pollution but also expensive vessel damage claims due to bad weather, mis-communication or poor vessel handling.

The new poster is complemented by a Signals Experience case study.

Copies of the new poster and case study are enclosed with this issue of Signals for appropriate entered ships. Electronic versions, suitable for printing, can be viewed or downloaded from the Club's website: www.nepia.com/loss-prevention/publications-and-guides/



Signals Search 29

Questions

- 1 Which index is an indicator of the fuel efficiency of a ship?
- 2 A new edition of which Lloyd's form was introduced in 2011?
- 3 As a result of which UK Act has North adopted a zero-tolerance policy?
- 4 Which Asian moth may have a high risk of infestation?
- 5 What sort of party can participate in USCG investigations?
- 6 What type of cargo shift can result from liquefaction of bulk cargo?
- 7 What type of guards may be considered as an additional layer of protection against piracy?
- 8 Most benefit is obtained from training above 60% of what heart rate?
- 9 Which agents may damage tank coatings?

Q Y B H Z G B F P V M A N I E
 P K T X N R Y I O D J O J N C
 D W D I I N P P V L I G G T I
 F S N B L Y E A S T G Z O E V
 P T E B R A L C N Y V N V R R
 V R I B B R U E R M W J A E E
 Y W N B D Z V Q D E T M E S S
 P R X E V E N C R B E D F T F
 J C M F R F L A S H I P A M G
 M R F P D U O R S S O L I G U
 A Z Z J L E W E K I M I B N M
 M U M I X A M G P V W F W A G
 P L Y G M O X I D I S I N G E
 W S V C O M I P G Y L W T V X
 I B E L J H Q U I V E Z P R T

- Signals Search is open to all readers of Signals.
- Send a photocopy of your completed search, along with your name and, if appropriate, name of ship, position on board, company and address to Denise Huddleston at the Club.
Email: denise.huddleston@nepia.com

- All correct entries received by the closing date will be entered in a prize draw.
- Closing date Friday 2 December 2011.

Prizes will be awarded to the first correct entry and two runners-up drawn.

Details of the winner and runners-up will appear in the next edition of Signals.

Answers to Signals Search 28

- | | |
|-----------|----------------|
| 1 Bunkers | 6 MLC |
| 2 Fouling | 7 Vessel |
| 3 FPD | 8 Concentrated |
| 4 Lookout | 9 Cosmic |
| 5 Twenty | 10 Liquefy |

Your copy of Signals

Copies of this issue of Signals should contain the following enclosures:

- Clean Seas poster 7 – STS (appropriate entered ships only)
- Case Study S012 – Ship to Ship Transfer (Members and entered ships only)

Disclaimer

In this publication all references to the masculine gender are for convenience only and are also intended as a reference to the female gender. Unless the contrary is indicated, all articles are written with reference to English Law. However it should be noted that the content of this publication does not constitute legal advice and should not be construed as such. Members with appropriate cover should contact the Association's FD&D department for legal advice on particular matters.

The purpose of the Association's loss prevention facility is to provide a source of information which is additional to that available to the maritime industry from regulatory, advisory, and consultative organisations. Whilst care is taken to ensure the accuracy of any information made available (whether orally or in writing and whether in the nature of guidance, advice, or direction) no warranty of accuracy is given and users of that information are expected to satisfy themselves that the information is relevant and suitable for the purposes to which it is applied. In no circumstances whatsoever shall the Association be liable to any person whatsoever for any loss or damage whensoever or howsoever arising out of or in connection with the supply (including negligent supply) or use of information (as described above).

Signals Search 27 Winners

Winner:

Captain Sangeet Kumer, Master,
MV Nikolaos, Seatraders SA

Runner-up:

Captain James Smith, Master,
MV Vos Clipper, Vroon Offshore Services

NORTH 
SERVICE, STRENGTH, QUALITY

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