The Standard

# STANDARD SAFETY

SETTING THE STANDARD FOR SERVICE AND SECURITY

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^ Contractor at work

# IN FOCUS
# THE MANAGEMENT AND CONTROL OF CONTRACTORS

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The club has seen a significant number of claims during recent years arising from contractors being injured, or worse, on-board ship. The employment and supervision of contractors working on-board ships is a subject rarely given much attention within the industry or addressed from a safety perspective. In any client-contractor agreement, both parties have obligations and a duty of care under health and safety law. In addition, guidance on how to control contractors used on-board should be available to the master through the safety management system (SMS).

Contractors hired to carry out cleaning, repairs or alterations on ships or offshore units have in some cases been the cause of serious injuries and sometimes fatalities to ships' personnel or have suffered serious injuries themselves through lack of proper supervision, and inadequate risk assessment procedures. Such incidents have also caused damage to equipment and on occasion have led to serious fires. The purpose of this article is to highlight these facts and identify key points to consider when using contractors.

Owners and operators who employ contractors and subcontractors have a responsibility to protect them from any dangers or risks that may be present on-board ship and to prevent them being a hazard to the ship and its crew. This primarily means that the SMS should address the procedures necessary relating to contractors. The SMS should provide guidelines for the master to ensure that contractors and subcontractors are adequately supervised and fully involved in the risk assessment process. Equally, contractors and subcontractors must co-operate with the master, ship's staff and the ship's safety procedures to ensure that they do not jeopardise their own safety or put others at risk.

^ Contractor at work

**Offshore contractors**

The purpose of this article is not to address the use of offshore contractors in the oil and gas industry. We do consider the lessons learnt from the failures in that sector to engage, monitor and manage contractors correctly and how these lessons should not be wasted in the merchant marine industry.

The management of contractors on offshore platforms is an extensive and integrated part of the health and safety risk assessment of a platform. Many of the well-known offshore disasters including Piper Alpha have been attributed to poor management of contractors. Some of these disasters have led to multiple fatalities, considerable pollution and significant cost, and have had an incalculable impact on the operating company's reputation.

## HOW DO WE DEFINE A CONTRACTOR AND A SUBCONTRACTOR?

A contractor is a company or person who has been tasked under formal contract to conduct a specific job for the employing company or client. The job should be clearly defined within the terms of the contract, including stipulations regarding the supply of labour, materials, cost and the adherence to safety practices. Contractors may need to employ other companies to help with aspects of the job they are unable to do themselves; these companies or persons are defined as subcontractors – and the unmanaged use of subcontractors can present a serious risk on-board ships.

## WHO AND WHAT ARE AT RISK FROM CONTRACTORS?

The majority of owners at some time employ contractors to conduct cleaning duties, repairs, maintenance, and testing of equipment and machinery on-board their ships. Contractors tend to work in constantly changing environments, where each task and situation is different, and must adapt to their surroundings. This can lead to contractors being exposed to a variety of risks and potential hazards themselves, and the possibility of putting the safety of other people, for example the ship's crew, in jeopardy.

Owners have a responsibility when employing contractors and subcontractors to protect them from potential risks or dangers as a result of their working environment. Contractors have their own responsibility to ensure they co-operate with the ship's master and crew so that they don't jeopardise their own safety or put others at risk. Owners will always be at risk from the consequences of any negligence or violations resulting from the actions of contractors on-board their ship. This is why it is important to have clearly defined procedures under the SMS for contractors.

## SMS

The SMS should define procedures for the use of contractors on board and these should include:

- joining and familiarisation procedures, including emergency situations
- explanation of on-board risk assessment and permit to work system
- tool box talks
- lock-outs and safety tags
- contractor's duties, working conditions, hours of work and identity of their supervisor on-board
- health and safety on-board
- how to control hazardous and 'no-go' areas
- what equipment can or cannot be used
- whom the contractor reports to
- confirmation that the work is left in a safe and operational condition after completion
- procedures for testing after completion, if appropriate

^ Contractor conducting hotwork repairs

**Contracting**

It is usually the owner's technical or operational staff which draws up the contract. It is at this stage that risks may be introduced. This may be because the contract and scope of work are not specifically or properly defined, and do not address the standards of health and safety to which the contractor must adhere.

Before hiring a contractor, it is recommended that operational staff:

- review the contractor's health and safety and risk assessment procedures
- establish the training and competency level of its employees, for example:
  - are the contractor's personnel qualified and certificated?
  - have the contractor's personnel been trained in health and safety?
  - have the personnel carried out this kind of work before on-board a ship?
- check references from previous clients
- make the contractor aware of your risk assessment procedures and permit to work systems
- enquire whether the contractor is using its own personnel or is using subcontractors. If using subcontractors, has the contractor confirmed:
  - its formal procedure for selecting and employing subcontractors?
  - that subcontractors' personnel are qualified and trained in health and safety?

There is an increased risk when contractors use subcontracted personnel. These may be of an unknown quality and may lack the required safety training. They may not know the HQSE (health, quality, safety and environmental) culture of the main contractor.

When there is a large number of personnel from contractors, such as cleaners, they will require close supervision as they may be 'casual labour' and may not have formal safety training or instruction in the use of personal protective equipment (PPE).

Any contract between an owner and a contractor should specify the contractor's obligations with regard to health and safety and working practices. These may include a:

- description and scope of work, materials and personnel to be used
- confirmation that all terms also apply to subcontracted employees
- clear statement that the owner's SMS will be the minimum standard applied
- clear statement that the ship's SMS must be adhered to at all times
- clear statement that if there is a serious failure to adhere to the owner's SMS, this will lead to the removal from the ship of any person involved
- contractors to use only certified, approved and safe equipment, including electrical, pneumatic and hydraulic equipment

## ARRIVAL OF CONTRACTORS AND SUBCONTRACTORS ON-BOARD

Depending upon the circumstances, the contractor's scope of work, their experience, and the location and duration of the work on-board, the following guidelines should be considered before work commences, conduct a familiarisation session and tour with all contractors' personnel, paying attention to these key points:

- ship's emergency alarms, their meaning and the required response
- the location and purpose of the muster station
- abandon ship procedures (if riding crew)
- risk assessment system on-board for work
- permit to work system
- location of life-saving appliances and fire fighting equipment
- on-board procedures if applicable for:
  - working at height
  - working outboard
  - hotwork
  - entering enclosed spaces
  - isolation of machinery
  - use of electrical equipment
  - isolation of electrical plant
- security policy
- environmental policy, particularly:
  - oil pollution prevention measures
  - proper handling and use of chemicals
  - disposal of oil, chemicals, used materials and garbage
- drug and alcohol policy
- ascertaining pre-existing medical conditions that may be pertinent
- housekeeping policies
- use of PPE
- 'no-go' and 'off-limits' areas
- guidance as to what equipment should not be touched without supervision
- who is the contractor's on-board supervisor and to whom he should report
- lifting gear guidelines

## BEFORE BEGINNING WORK ON-BOARD

- responsible officer to be selected as the contractor's on-board supervisor, acting as manager and main point of contact with the contractor
- organise:
  - a risk assessment for the job required: include all hazards associated with the job and clearly describe to the contractors the risks involved, including control barriers to minimise risks, and isolation of equipment
  - a permit to work for the job – contractors should fully understand its use and purpose
- carry out a 'tool box' meeting including identification of:
  - the job requirements
  - desired outcomes
  - possible problems
  - equipment used in the job
  - contractor's equipment being properly certified and checked before use
- the job should be co-ordinated and controlled, with all parties aware of their responsibilities
- ensure contractors have sufficient PPE for the job and identify any additional equipment needed by means of the risk assessment
- establish a suitable timeframe for job completion, taking into account:
  - the dangers and risks associated with the job and the control barriers in place, which may increase the job time
  - working hours and breaks
  - critical points of time, such as departure or arrival
- maintain a good working relationship and communication with contractors
- maintain a record of the work activity, including times of completion of specific tasks

## SUPERVISION OF CONTRACTORS

^ Supervision of contractors is essential to ensure safe working practices

It is crucial for the safety of all personnel that contractors are supervised while on-board. This does not mean that a person has to be standing over the contractor continuously. However, their work and working practices must be checked and these checks should include:

- ensuring contractors are supervised by a member of the ship's crew who is aware of his responsibilities
- ensuring contractors are conducting their work as per the specific job plan and not deviating without express permission from the on-board supervisor

- monitoring health and safety performance throughout and ensuring it is consistent with the ship's procedures; for example, hotwork and tank entry procedures, safe lighting and use of safe electrical equipment
- ensuring contractors are using personal protective clothing and equipment
- ensuring appropriate warning signs are posted; for example, no smoking, no naked lights, hazardous area
- ensuring contractors are taking appropriate rest breaks
- ensuring contractors do not use ship's equipment, including lifting equipment, without authorisation
- informing contractors of any other work being carried out on-board that may pose additional risks to their safety or have an impact on their tasks
- ensuring that in the event of a near-miss or an accident involving a contractor, evidence including photographs and documents, is taken and retained
- ensuring that if the work is carried out over one day or more, a meeting is held before recommencing work to review progress from the previous day and initiate a new risk assessment and permit to work, taking into account any new risks
- ensuring that contractors are included in the daily work meetings, particularly in a busy repair period or a drydocking
- **as using contractors to carry out hotwork appears to be a particular source of incidents, including explosions and major ship fires, hotwork should always be supervised**

## COMPLETION OF CONTRACTORS' WORK

- upon completion, review the job and its quality
  - does it meet the desired outcome?
  - is testing, with the contractors' or ship's personnel in attendance, necessary to check that the task is completed and satisfactory?
  - was the job conducted in a safe and competent manner by the contractors?
  - are the contractors and subcontractors satisfied with the work done and the on-board procedures?
- check that the work area has been left in a safe, clean and operational condition
- consider establishing an approved list of contractors for future reference, based on the assessment of the contracting company, quality of work and safety performance

It can happen that contractors announce that the work has been completed, and no ship's staff is available to check that the equipment or area has been left in an operational or safe condition. Club condition surveys often find defects that have arisen because contractors have not left the equipment in a workable condition; for example, the servicing of $CO_2$ fixed fire-fighting systems. Club surveyors have found $CO_2$ systems that would fail to work after technicians have attended to carry out routine tests. Contractors may be prone to short-cuts and may have little appreciation of the consequences these can have. A fire resulted, for example, when lagging on hot generator exhausts was not replaced properly, but was hidden from view by shield plating. Valves were refitted correctly but were left in the open position when they should be closed. Sections of piping that should have been replaced were not, because the contractor forgot, or could not get the material.

**Always check the work when completed and test if necessary; never assume that the contractor has left the job in a safe and operational condition.**

The role of contractors on-board is normal for many ships, however, the risks arising from their use can be significant. These rusks must be effectively managed by the ships staff and to do that the SMS must include guidance on how contractors on-board should be managed.


^ $CO_2$ control station

## KEY POINTS

- ensure the contract requires the contractors to comply with the ship's SMS as a minimum
- ensure that the contractors are familiar with the on-board environment
- ensure that the contractors are supervised
- ensure that the work is checked after completion

## CASE STUDY 1 – TANK EXPLOSION

A crude oil tanker, while at anchor, needed maintenance on the cargo tanks, including repairs and testing of fittings, notably hydraulic systems and the tank gauging system. The work was contracted out to a local company that had previous experience in marine repairs and was well known to the owner. The contractor employed subcontractors to help with the workload, but the owner and master were unaware of this.

The cargo tanks went through a quick tank-cleaning programme followed by purging with inert gas to a level safe enough to dilute with air (gas freeing). A chemist from the local authority arrived on-board and inspected each cargo tank. After finding the tanks were safe for entry, the chemist certified all cargo tanks to be gas free.

The contractors arrived on the ship the next day and were given a safety briefing. A work schedule was established with the ship's crew in accordance with the work plan, including times for work and rest periods.

The contractors' work began at 0900 and was scheduled to finish at 2200. At 1700, all contractors took a meal break of one hour, except for two subcontractors who remained inside one of the forward cargo tanks. The ship's crew who were supervising the work also took their meal break at that time. It went un-noticed that the two subcontractors were missing from the meal break. At 1730, smoke was seen emanating from one of the forward cargo tanks by the chief officer on the bridge. The alarm was raised and the two subcontractors were found dead outside the tank near the manhole access hatch. It was later determined that hydrocarbons were still present in the forward cargo tank and their mixing with oxygen had created a flammable atmosphere. It is likely that a spark from a match or lighter caused the explosion, as cigarette ends were found in the tank during the investigation. The presence of hydrocarbons in the cargo tank was later identified as resulting from a leak from a cargo line that had not been properly flushed through during tank cleaning.

## LESSONS LEARNT

- always ensure that the contracting company's policy for selecting subcontractors is fully known to the owner, including details of the subcontractors' experience, competency, training, and health and safety policies
- never leave any contractors unmanaged
- all contractors should leave the work space during long breaks
- account for all contractors on-board at all times
- always ensure contractors follow the ship's SMS, particularly safety precautions with regard to naked lights and smoking on-board
- ensure that the atmosphere in enclosed spaces is tested at regular intervals as per the on-board risk assessment and permit to work procedure

## CASE STUDY 2 – CONTRACTOR DEATH

A handy sized bulk carrier was undergoing repairs to the stern seal in a European port. To get access to the stern seal, the ship was trimmed down by the head. Subcontractors were contracted to build scaffolding around the stern and propeller blades in order to gain access to the stern tube seal.

At the same time, a second technician was contracted to carry out repairs and adjustments to the main engine controls in the engine room. To carry out this work, the technician required the turning gear to be rotated manually. As this was done, the propeller shaft turned, rotating the propellers, which knocked down the scaffolding. One of the contractors was killed by falling from the scaffolding.

The master and chief engineer were accused of negligence and ordered to attend a criminal court. They were given a prison sentence, although this was overturned on appeal.

The causes of the accident included these failures:

- there was no proper risk assessment of the tasks or any control measures implemented
- there was no permit to work system in operation
- there was no supervision of either set of contractors
- there was no planned organisation to minimise the risks as the two tasks were carried out
- there were no warnings given by the technician when testing the main engine equipment
- there was no lock-out or isolation of any systems that could affect the safety of the contractors – in this case, the turning gear
- personnel around the stern were not advised of the work on the main engine, and those repairing the engine controls were unaware of the scaffolding operation

## LESSONS LEARNT

- always ensure contractors are properly supervised
- always ensure contractors are aware of other work planned or in progress
- always prepare required permits to work

## CASE STUDY 3 – FALL FROM HEIGHT

A subcontractor was tasked with the maintenance and repair of bulk offloading gantry equipment on an offshore bulk cargo transfer ship. The man was working alone in tropical heat and was required to climb high fixed ladders and work at height. The work would take him several weeks to complete.

One afternoon, the man was either climbing or had started to work at height when he was heard to fall to the steel deck below. No-one saw him fall. He was soon pronounced dead. He was not wearing PPE or a fall arrester or preventer.

The causes of the accident included the failures that:

- the contract did not specify that he would have to comply with the ship's SMS as a minimum
- there was no supervision of the contractor
- the contractor was not advised of the permit to work systems operating on-board
- there was no requirement for the contractor to wear PPE

## LESSONS LEARNT

- always ensure contractors are supervised
- always ensure contractors know the ship's SMS requirements
- always prepare permits to work

## CASE STUDY 4 – OFFSHORE CASUALTY

An offshore construction ship was on a berth preparing to mobilise for the next contract for which a series of outriggers were to be deployed. These needed to be freed from their usual stowage positions.

The outriggers were normally lowered into position using a hydraulic power pack, which was part of the ship's equipment. The outriggers, when not in use, were permanently fixed in an upright position. They had to be freed by cutting the fixing struts using oxy-acetylene equipment.

Before the outriggers could be lowered, the hydraulic system had to be activated and pressurised ahead of removal of the holding struts. The chief engineer was tasked with powering up the hydraulic system.

A subcontractor was employed to cut the outrigger holding struts. The contractor was wearing full PPE and standing on the outrigger supports as the holding struts were being cut. As the weight came off the struts, the whole outrigger assembly fell into the water with the contractor and he drowned. The cause was put down to the fact that the hydraulic system had not been activated and therefore the outrigger was free to fall. There were no secondary safety devices for the outriggers, such as safety pins.

The causes of the accident included the failures that:

- the agreement with the contracting company did not specify that personnel should comply with the ship's SMS as a minimum
- there was no permit to work or risk assessment carried out
- there was no supervision of the contractor
- the contractor was not familiar with the potential hazards

## LESSONS LEARNT

- always ensure contractors are supervised
- always ensure contractors know the ship's SMS requirements
- always prepare permits to work

# SAFETY ALERTS

# CARGO DECLARATION FORMS – BULK CARGOES THAT MAY LIQUEFY

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^ Surveyor sampling bulk cargo

The club issued *Standard Cargo – Bulk Cargo Liquefaction (Iron Ore Fines and Nickel Ore)* in February 2011 and since then the situation has not improved; in fact it appears to have got worse. Dry bulk cargoes that are prone to liquefaction, such as iron ore fines and nickel ore, are continuing to be mis-declared by shippers as Group C cargoes (which neither liquefy nor possess chemical hazards) under the International Maritime Solid Bulk Cargoes (IMSBC) Code. This is a serious and potentially major hazard to the safety of crew and ship. The correct classification for cargoes under the IMSBC Code that are liable to liquefy is found under Group A.

The countries where shippers have been known to mis-declare or wrongly classify dry bulk cargoes include, but are not limited to:

- Indonesia
- China
- Philippines
- India
- Brazil
- Ukraine
- Venezuela

Since the beginning of this year, the club has seen an increase in irregularities relating to iron ore fines being loaded in Brazilian ports. Cargoes with high moisture contents are presented for loading and on the cargo declaration forms are wrongly classified as Group C cargoes. As a result, ships have suffered cargo liquefaction in their holds, with the moisture contents in excess of the transportable moisture limit (TML) and reaching it's flow moisture point (FMP). This has been confirmed at the discharge ports.

Ports in Brazil such as Ponta da Madeira and Santana are of particular concern, especially for iron ore fines declared as 'sinter feed ore' with no certificates of moisture content or transportable moisture limit presented before loading. 'Sinter feed ore' has since been identified as iron ore fines and can be considered as a Group A cargo (liable to liquefy).

Recent cases of owner's challenging the shipper over the veracity of the cargo declaration form have resulted in the cargo being re-classified as a Group C cargo. Furthermore, independent surveyors acting for owner's interests have been refused access for pre-loading surveys and subsequent authorisation for the survey denied by shippers. Examples of this have occurred in Brazil, Indonesia and the Philippines. Owners should consider clausing their charter parties to include that all statutory provisions of the IMSBC Code be followed and that owners stipulate their right to have an independent surveyor in attendance.

^ Liquefied sinter feed ore

Shippers in Brazil are now under pressure to reclassify their cargoes correctly according to the provisions of the IMSBC Code. The Code must be complied with at all times. Masters must be on their guard to ensure that the cargo to be loaded is correctly classified.

Certificates of moisture content must be issued for Group A cargoes, and the interval between sample or testing and loading should not exceed seven days. Certificates of transportable moisture limit must also be issued, with the interval between sample or testing and loading not exceeding six months. However, if it is suspected that the moisture content may have increased since the time of testing or that the flow moisture properties of the cargo may have changed, possibly resulting from heavy rainfall or inefficient stockpiling, additional testing should be carried out to confirm the safety and suitability of the cargo to be loaded.

## FREQUENTLY ASKED QUESTIONS ABOUT CARGOES THAT MAY LIQUEFY (GROUP A UNDER IMSBC CODE)

1. **What should I do if there is insufficient data provided on the cargo declaration form and on moisture content and transportable moisture limit certificates?**

   Under the terms of the IMSBC Code, the shipper should provide the master with appropriate information on the cargo far enough in advance of loading to enable precautions to be put into effect for proper stowage and safe carriage of the cargo. If the shipper provides what is suspected to be an inaccurate or falsified cargo declaration form or certificates of moisture content and

transportable moisture limit, the cargo should not be loaded until it can be verified that it is safe to load and that the certification is in accordance with the IMSBC Code.

The master should contact the company along with the P&I club and local correspondent to assist in providing support and, if necessary, arrange for a cargo surveyor to attend the ship and assist the master. If there are any doubts as to the safety and suitability of the cargo, the shipper should be requested to provide accurate certification, which may involve retesting the cargo for moisture content and transportable moisture limit.

The master is reminded that under the provisions of Safety of Life At Sea (SOLAS), cargo should not be loaded if there are any concerns that the ship might be affected by the condition of the cargo.

**2. What should I do if I spot significant water on the surface of the cargo in the ship's hold or on the stockpiles on shore?**

Consider to stop loading cargo. The presence of water on the surface of the cargo could indicate that the moisture content is in excess of its transportable moisture limit. Inform the shipper of the condition of the cargo and that you have observed water. Contact your P&I club and local correspondent for assistance. Arrange for a cargo surveyor to attend and to check the condition of the cargo. Instruct the surveyor to take samples and arrange for retesting of the cargo by an independent laboratory to determine if the cargo is in excess of its transportable moisture limit and has reached its flow moisture point. If retesting determines that the cargo is in excess of its TML (thus presenting a serious risk of liquefaction) the remaining cargo should not be loaded. On no account should the ship sail with any cargo which has excessive moisture and which exceeds its transportable moisture limit. It can take as little as one or two cargo holds of liquefied cargo to capsize a ship and that not all holds need liquefied cargo to have a negative effect on positive stability.

^ Bulldozer trimming sinter feed ore inside a cargo hold at Santana, Brazil

^ Water seen in the tracks of a bulldozer during trimming of sinter feed ore at Santana, Brazil

^ Signs of water in the cargo hold during loading of sinter feed ore at Santana, Brazil

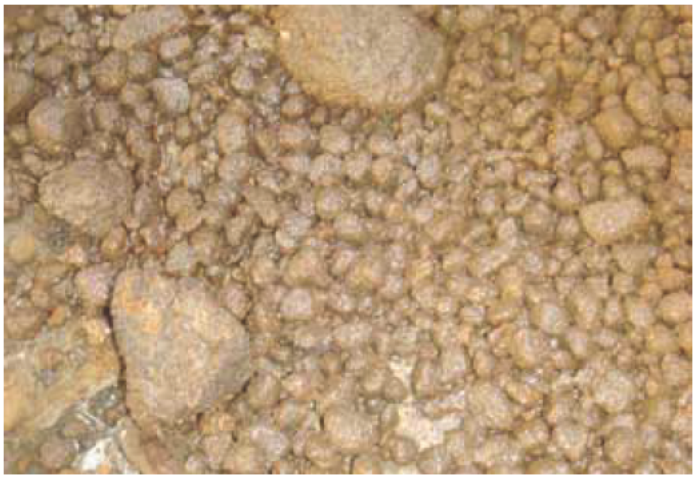
**3. What should the cargo surveyor's duties include when assisting the master?**

The surveyor should check the condition of the holds (charterers may have appointed a separate surveyor to check the condition of holds for suitability of loading). In particular, he should ascertain the cleanliness of the hold, including any residual moisture or water present. Holds should be clean and dry ahead of loading.

The surveyor should if possible check the condition of the cargo on shore and determine its suitability for loading, noting any moisture present or contamination and whether it accurately corresponds with the descriptions on the cargo declaration form and bill of lading. Cargo stockpiles for loading need to be clearly identified and related to the cargo documentation.

The surveyor should keep in close contact with the master and crew. The cargo plan should be closely monitored to ensure that the shoreside facilities are loading in accordance with the agreed plan.

The surveyor should take owner's samples of the cargo from various stockpiles on shore in accordance with the IMSBC Code procedures, in the event that it is necessary to double check the shipper's certification.



^ Sinter feed ore with high moisture content

If the cargo is wet or unrepresentative of the shipper's cargo declaration, samples taken by the owner's surveyor should be taken to an independent laboratory for retesting and confirmation of suitability to load.

The surveyor should pay particular attention to the prospect of rain and how this could affect the cargo to be loaded, including:

- advising the master to close the working cargo hatches when it rains for prolonged periods
- rechecking the cargo stockpile on shore to determine whether the rain has affected the cargo – has this changed the flow moisture properties of the cargo and increased the moisture content?
- additional testing if the cargo has become wet. It is essential that the cargo is retested to determine if it is safe for transport
- advising the master of any wet cargo – the surveyor may assist the master in conducting a 'can test'. This test should only be used to determine whether the condition of a cargo is **NOT suitable** for loading and should **never be regarded as an acceptance test or that the cargo is safe to load.**

^ Can test showing a sample of iron ore fines with signs of water

If cargo is to be loaded from barges:

- that the barges have proper certification for loading (cargo declaration form, moisture content and transportable moisture limit certification) in line with the IMSBC Code requirements
- that there is effective monitoring of barges, particularly relating to the stockpile from which the cargo originates
- be wary of barges going from ship to ship with a poor quality cargo until they find one that will accept it for loading
- be wary of barges arriving at ship's side at night, as the darkness may hide problems with the cargo that would be easily seen in daylight, such as dampness or poor grade quality

**Appointment of a cargo surveyor does not relieve the shipper of his obligations under the IMSBC Code or local regulations.**

KEY POINTS

- cargo declaration forms must be accurate and representative of the cargo to be loaded. This includes:
  - the correct bulk cargo shipping name (BCSN)
  - the cargo group (A and B, A, B or C)
  - IMO class and UN number if applicable
  - total amount of cargo to be loaded
  - stowage factor
  - trimming procedure
  - toxic or flammable gases which may be generated by cargo
  - cargo flammability, toxicity, corrosiveness and propensity to oxygen depletion
  - self-heating properties of the cargo
- if there is any doubt as to the validity or veracity of cargo declaration forms or certificates of moisture content or transportable moisture limited, the local P&I correspondent should be contacted for further assistance
- masters and ships' officers should have a good understanding and knowledge of the cargo to be loaded, including the ability to identify any signs of potential liquefaction problems
- the IMSBC Code has been mandatory since 1 January 2011 and must be complied with by both the ship and the shipper
- **the master has an overriding authority under SOLAS not to load any cargo and to stop loading, if there are any concerns that the ship may be affected by the condition of the cargo.**

When fixing the cargo or ship, chartering departments must identify the cargo accurately as per the IMSBC Code by providing the bulk cargo shipping name (BCSN) of the cargo. If this is not done, seafarers' lives could be at risk.


^ The International Maritime Solid Bulk Cargoes (IMSBC) Code


^ *Standard Cargo – Bulk Cargo Liquefaction (Iron Ore Fines and Nickel Ore)* February 2011

# FAKE EMERGENCY ESCAPE BREATHING DEVICES

The Marine Safety Forum (a group of shipping, logistics, energy, regulatory and other interests) issued its Safety Flash (11-09) on 8 March 2011 to warn the industry of the discovery of fake emergency escape breathing devices (EEBDs). The fake EEBDs were identified as copies of the Unitor/MSA type Uniscape 15H. The imitation sets do not work properly, and it is vital that shipowners ensure that their EEBDs are genuine and in good working order. The consequences of having fake devices on-board could be deadly: anyone using them will be unable to breathe and possibly unable to escape from an emergency situation.

Fake EEBDs may be identified by the following:

- bag material is different
  - original Unitor: shiny PVC material
  - fake Unitor: dull canvas-like material


^ Original and fake EEBD

- mask hood will not fit over user's head. Neck-tightening rubber membrane is not flexible enough for a normal head size, and is sewn to the hood with a single seam – not welded as in an original Unitor hood

^ Mask hood and neck-tightening rubber membrane inadequate

^ Mask hood and neck-tightening rubber membrane inadequate

- the zipper is opened in a way which casts doubt on the functionality of the automatic release mechanism but like the original, the bag has UNITOR UNISCAPE 15H and Safety by MSA printed on the front, together with four sketches of how to use it

Any EEBDs found to be forgeries should be taken out of service, and replaced immediately with genuine articles. The counterfeit EEBDs must be returned ashore so they cannot be used again.

^ 2cm opening on original EEBD above

### ORIGINAL UNITOR EEBD:

- zipper has 2cm opening on the teeth
- zipper closes from right to left

### COPIED DEVICE:

- zipper has no opening
- zipper closes from left to right. Air release cannot be activated automatically

### KEY POINTS

- ensure EEBDs are genuine and are in good working order
- take great care when ordering or servicing any life-saving or fire-fighting appliances. Always ensure genuine parts for fire and safety equipment by going to known service providers
- carry out periodic inspections of life-saving or fire-fighting appliances as per the on-board planned maintenance system (PMS). Retain records of these inspections
- check that life saving and fire fighting equipment is operational

^ Example of a genuine EEBD in good working order

### REFERENCE

A copy of the Marine Safety Forum safety flash (11-09) can be found at: **http://www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-11.09.pdf**

# OVERWEIGHT RESCUE BOATS


^ Weighing of overweight boat manufactured by Watercraft Hellas SA

The UK's Marine Accident Investigation Branch (MAIB) in its safety bulletin 1/2011 highlighted the dangers of rescue boats becoming overweight as a result of water penetration into void spaces. This problem caused a serious accident on a UK-flagged car carrier. During a routine drill, the fall wire attached to the rescue boat parted while it was being hoisted to its stowed position. The rescue boat and its four occupants fell nearly 29m into the water. One of the crew members died and two others were taken to hospital.

The rescue boat was identified as a Watercraft WHFRB 6.50 and had a certified weight of 980kg. During the accident investigation, it was weighed and found to be 1450kg. Seven rescue boats of the same model used on sister ships were also inspected and found to be significantly heavier than when supplied. It was determined that the rescue boats' weights when un-laden were close to or exceeded the safe working load (SWL) of their davits; with the addition of crew, fuel and equipment on-board, the SWL of the davits were exceeded. The MAIB stated in its safety bulletin that the weight of the rescue boat '*by itself should not have resulted in the failure of its fall wire due to the safety margins in place. Investigation into the failure of the wire remains on-going.*'

The rescue boat model WHFRB 6.50 was certified to meet SOLAS requirements, the Life Saving Appliance Code and the Marine Equipment Directive. The construction of the rescue boat included an inner and outer hull. The void space below deck was divided into 16 compartments, of which 15 were filled with rigid polyurethane foam to provide a watertight, buoyant volume.

The MAIB found that 14 of the 15 foam-filled compartments in the rescue boat had been penetrated by water as well as lower sections of the hull containing cavities and voids between the foam and hull. The polyurethane foam was found in these areas to be of varying colour and consistency.

^ Inspection of the rescue boat below deck

^ Sample of foam from cavity

The rescue boat was fitted with a drain plug located on the transom, but the internal compartments were not interconnected. This meant that the aftermost compartment could be drained of water through the plug hole, but water present in the other compartments was trapped. The remaining compartments had to be drained by drilling separately into them through the hull.

^ Water draining from trapped compartment

The MAIB investigated how water entered the buoyancy compartments of the rescue boats and identified different types of penetration in their hulls and decks. Further investigation into the foam properties is continuing.

It is evident that water ingress and retention in the foam-filled compartments are serious safety concerns and endanger lives. Over time and without warning, rescue boats' weight can increase to the extent that:

- the safe working load (SWL) of the rescue boat davits and falls could be exceeded
- the rescue boats' performance, including manoeuvrability and handling, could be seriously affected, particularly:
  - the ability to self-right after capsize
  - the ability to tow a survival craft
- the safety of the five-yearly dynamic test where the boats' weight is included in the test weight may be compromised by water penetration

## ANALYSIS

- as there is widespread use of foam-filled compartments in various types of rescue boats, it may be that the problem of water ingress and retention is not limited to one particular model
- Norsafe Watercraft Hellas SA has issued a product awareness notice highlighting the dangers associated with its Watercraft WHFRB 6.50 and has advised owners to arrange for their boats to be weighed and, if necessary, seek advice and assistance from the manufacturer
- the parting of the fall wire that resulted in the rescue boat accident may prove a crucial point in the on-going investigation, as it could highlight the quality and maintenance of the wire itself and whether it was fit for purpose. The MAIB reported in its safety bulletin that the overweight lifeboat by itself should not have resulted in the fall wire failure because of the safety margins in place

## KEY POINTS AND RECOMMENDATIONS

- owners of rescue boats containing polyurethane foam-filled compartments should be aware of the possibility of these boats being heavier than the design weight
- where any doubt exists, owners should contact the manufacturer, and arrange for the boat to be weighed
- owners of Watercraft WHFRB 6.50 boats should follow the guidance issued by the manufacturer. If guidance has not been received, contact the manufacturer immediately
- when rescue boats are in use, their performance should be monitored for any signs of water penetration: for example, if the boat feels heavy or sluggish when manoeuvred
- conduct regular inspections of rescue boats, paying particular attention to the hull and exposed decks for signs of degradation, including cracks, holes or any fittings through which water could penetrate
- ensure that when rescue boats are in the stowed position, the drain plug is removed to allow water to drain away

The club has seen a small number, but potentially dangerous instances of crane wire failure in fast rescue boats. These have been caused by wire's parting as a result of the damage and/or degradation. The wire damage is sometimes caused by damaged or poorly fitting sheaves. All equipment should be regularly and carefully inspected by competent personnel.

## REFERENCE

A copy of MAIB safety bulletin 1/2011 can be found at:
**http://www.maib.gov.uk/cms_resources.cfm?file=/SB1-11.pdf**

**The Standard P&I Club acknowledges with thanks the assistance of the MAIB in compiling this article, and for supplying the photographs used.**

# SURVEYORS' NOTES
# GANGWAYS AND ACCOMMODATION LADDERS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^ Surveyor conducting condition survey

The club's surveyors have noticed during ship visits that embarkation gangways are sometimes dangerously or incorrectly rigged, damaged, or poorly illuminated, and that hoisting or lowering equipment is inadequately maintained.

^ Dangerously placed gangway

Any of these defects on a gangway can lead to substantial claims for personal injury or fatality.

Owners should obtain a copy of MSC.1/Circ.1331 issued on 11 June 2009, entitled 'Guidelines for Construction, Installation, Maintenance and Inspection/Survey of Means of Embarkation and Disembarkation', which is available from the IMO website free of charge.

The document highlights the main points of gangway safety, testing, maintenance and inspection.

**Location**
The means of embarkation and disembarkation should be positioned clear of the working area and should not be placed where cargo or other suspended loads may pass overhead.

**Lighting**
Lighting should illuminate the means of embarkation and disembarkation, the position on deck where persons embark or disembark, and the controls for the arrangement.

**Lifebuoy**
A lifebuoy equipped with a self-igniting light and a buoyant lifeline should be available near the embarkation and disembarkation arrangement for immediate use.

**Arrangement**
Each gangway should be of such a length to ensure that, at a maximum design operating angle, the lowest platform will be not more than 600mm above the waterline in the lightest seagoing condition, as defined in SOLAS regulation III/3.13.

The arrangement at the head of the gangway should provide direct access between the gangway and the ship's deck by a platform securely guarded by handrails and adequate handholds. The gangway should be securely attached to the ship to prevent overturning.

**Marking**
Every accommodation ladder or gangway should be clearly marked at each end with a plate showing the restrictions on safe operation and loading, including the maximum and minimum permitted design angles of inclination, design load and maximum load on bottom end plate.

Where the maximum operational load is less than the design load, it should also be shown on the marking plate.

^ Rigging an accommodation ladder – no safety harness or fall prevention device in use – this is not a safe practice

**Testing**
At every five-yearly survey, the gangway should be operationally tested with the specified maximum operational load.

The winch should be tested as a part of the complete gangway unit through a minimum of twice hoisting and lowering of the gangway in accordance with the test requirement specified in international standards such as ISO 7364:1983.

Every new gangway should be subjected on installation to a static load test of the specified maximum working load.

**Positioning**
Gangways should not be used at an angle greater than 30° from the horizontal and accommodation ladders should not be used at an angle greater than 55° from the horizontal, unless designed and constructed for use at angles greater than these and marked as such. Gangways should never be secured to a ship's guardrails unless they have been designed for that purpose. If positioned through an open section of bulwark or railings, any remaining gaps should be adequately fenced.

Adequate lighting for means of embarkation and disembarkation and for the immediate approaches should be ensured from the ship and/or the shore in hours of darkness.

**Rigging (safety net)**
A safety net should be installed in way of gangways where it is possible that a person may fall from the means of embarkation and disembarkation or between the ship and quayside.

**Maintenance**
Accommodation ladders and gangways, including associated winches and fittings, should be maintained and inspected at appropriate intervals as required by SOLAS regulation III/20.7.2, in accordance with manufacturers' instructions. Additional checks should be made each time the accommodation ladder and gangway is rigged, looking out for signs of distortion, cracks and corrosion. Close examination for possible corrosion should be carried out, especially when an aluminium accommodation ladder or gangway has fittings made of mild steel.

Bent stanchions should be replaced or repaired, and guard ropes should be inspected for wear and renewed where necessary.

Moving parts should be free to turn and should be greased as appropriate.

The lifting equipment should be inspected, tested and maintained, paying careful attention to the condition of the hoist wire. The wires used to support the means of embarkation and disembarkation should be renewed when necessary, as required by SOLAS regulation II-1/3-9. Arrangements should be made to examine the underside of gangways at regular intervals.

All inspections, maintenance work and repairs to gangways should be recorded in order to provide an accurate history for each appliance. The information should include the date of the most recent inspection, the name of the person or body carrying out that inspection, the due date for the next inspection and the dates of renewal of support wires.

^ Ladders should not be used as a means of safe access to ships – this is not a safe practice

**Gangways**
The following items on the gangway should be thoroughly examined during annual surveys required by SOLAS regulations I/7 and I/8, and checked that they are in a satisfactory condition:

- treads
- side stringers, cross-members, decking and deck plates
- all support points such as wheel and rollers
- stanchions, rigid handrails and hand rope

**Winches**
During annual surveys required by SOLAS regulations I/7 and I/8, the following items should be examined:

- brake mechanism, including condition of brake pads and band brake, if fitted
- remote control system
- power supply system (electric/air motor)

**Key points and recommendations**
- owners should obtain a copy of MSC.1/Circ.1331 issued on 11 June 2009, entitled 'Guidelines for Construction, Installation, Maintenance and Inspection/Survey of Means of Embarkation and Disembarkation' which highlights ship's gangway safety, testing, maintenance and inspection
- ensure that the gangway will not block or interfere with shore side equipment
- ensure that the gangway is well illuminated
- ensure that the ship's gangways are load-tested every five years
- ensure that the gangway is correctly rigged and positioned
- ensure that gangways and hoist/lowering motors fixtures and fittings are inspected as part of the ships planned maintenance routines

# SAMPLING POINTS ON OILY WATER SEPARATORS

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Separators, holding tanks, oil content meters, three-way valves, pumps and overboard valves are all part of the equipment needed for oil-contaminated water to be discharged from a machinery space bilge to the sea. MARPOL 73/78 Annex 1 – *Regulations for the Prevention of Pollution by Oil*, entered into force on 2 October 1983 and changed the mandated means of disposal of oil-contaminated water from ships. Although MARPOL certification is issued by flag, surveyors acting for port state control take great interest in checking that the equipment is correctly fitted and used. Multimillion dollar fines with potential custodial sentences are sought by port states when they suspect a violation of MARPOL, direct discharge to the sea, tampering with evidence, or that someone has supplied incorrect information to the authorities. This is well known by now, and it will not surprise members that the club, during a condition survey, will ask surveyors to review how the oil water separator (OWS) is arranged, and to report any connection in the discharge pipe which could be used as a by-pass.

Recently, surveyors have been finding T-pipes in the discharge pipe between the overboard valve and three-way automatic control valve fitted with flange connections with valves and open-ended pipes or with bayonet valves. These things were arranged to enable connection of a portable pump or pipe and direct discharge to the sea. There was no evidence to suggest an illegal discharge had occurred; but it was of great concern that such a connection existed. Some of the ships involved were more than 20 years old and it appeared strange that class, flag and port state control surveyors had accepted these arrangements.

Sampling pipes are required in an oily water separator's discharge line. Their purpose is to allow a sample of the effluent to be taken for analysis of oil content. Marine Environmental Protection Committee (MEPC) 107(49) – *Revised Guidelines and Specification for Pollution Prevention Equipment for Machinery Space Bilges of Ships*, adopted on 18 July 2003, states:
*'…a sampling point should be provided in a vertical section of the water effluent piping as close as is practicable to the 15 ppm Bilge Separator outlet.'*

In addition:
*'…recirculating facilities should be provided, after and adjacent to the overboard outlet of the stopping device to enable the 15 ppm Bilge Separator system, including the 15 ppm Bilge Alarm and the stopping device, to be tested with the overboard discharge closed.'*

It is required that the recirculating facility be reconfigured to prevent any by-passing of the separator; but there is no guidance on how the sampling point should be configured or on how the point should be closed and sealed.

MEPC 61/24, says compliance can be achieved by the *'installation of blanks'.*

In discussion with classification societies, it has emerged that it may be acceptable to fit a sampling point between the three-way automatic control valve and the overboard discharge valve. The societies confirmed that a screw-down non-return valve is not required at the sampling point and that the diameter of the sampling pipe is not regulated. Consequently, the danger arises that a port state control surveyor might conclude that a sampling point was used for an illegal discharge of oil-contaminated water.

Shipowners are faced with the dilemma of MARPOL requiring a sampling point in the OWS discharge pipe without giving an approved method of preventing the separator from being by-passed.

Our understanding is that the following arrangements are acceptable, although it is strongly recommended that advice is taken from class and/or flag before use.

Suggested means to safely seal an OWS sampling point:

i) use a small bore pipe of 5mm or less for the sampling point but only if the pump is fitted with relief valve recirculation
ii) arrange the sampling point so that the point's open end discharges into a hopper or funnel
iii) seal the line with a blind flange and place a numbered seal through it and the valve's flange. This should be witnessed by the watch engineer, chief engineer and master, and recorded in the oil record book. We understand this method is commonly used
iv) arrange the sampling point to originate from the recirculating facility or the 15 ppm monitor (some separators are designed that way)

It is essential that the separator and its sampling point are arranged so as not to allow doubt as to whether an illegal discharge has been made. Open-ended sampling points close to the overboard discharge valve could be used for by-passing a separator and, so must be sealed by an approved method. Ideally, they should be arranged so that by-pass is impossible. Separators designed with the sampling point as part of the recirculating facility appear to offer the best method of achieving this.

^ Oily water separator (OWS)

# DANGEROUS PRACTICES WITH GAUGING DEVICES ON FUEL AND LUBE OIL TANKS

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During surveys of machinery spaces, the club's surveyors have frequently noticed that self-closing weighted cocks for sounding pipes and gauge glass push buttons are being intentionally locked mechanically in the open position.

^ Weighted cap removed and screw cap off

^ Screw cap replaced by wooden plug

## WEIGHTED COCKS REMOVED AND LEFT IN OPEN POSITION WITH SCREW CAP OFF

The practice of leaving open self-closing sounding cocks by either removing the weight or by mechanically locking them open is dangerous and compromises the safety of the ship. It presents a high risk of flooding, pollution and fire; and is a serious deficiency that may lead to port state control detention.

^ Mechanically locked open level gauges

^ Mechanically locked open level gauges

## MECHANICALLY LOCKED OPEN LEVEL GAUGES

Installing a mechanical device to depress continuously the level indication button on fuel and oil tank level gauges is highly dangerous. Should a fire occur near the tanks, the gauge glass could crack and the contents of the tank would fuel the fire.

## CASE STUDY

A ship was found to have a substantial crack in the aft peak tank shell plating and a crack along the weld between the aft peak tank and an oil sludge tank located in the engine room. Water entered the aft peak tank and leaked into the sludge tank. The self-closing sounding pipe lock on the sludge tank prevented sea water from entering the engine room.

## CONCLUSION

Self-closing weighted cocks and spring loaded push button level gauges are specifically designed to close unless manually operated. DO NOT mechanically lock in the open position cocks or valves of this type.

Ask yourself how much time is saved by continuing the practice of locking open these types of devices and then think about the consequences of fire or flooding if leaving the device in that position.

If you see a self-closing weighted cock and spring loaded push button level gauge mechanically locked open DO NOT hesitate to remove and dispose of the improvised mechanical locking device.

Ensure that they are well maintained and always operated as intended.

# REGULATION UPDATE

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The increase in the volume of maritime legislation and in its complexity makes it essential for members to keep up to date with new regulations and amendments. The purpose of this section of *Standard Safety* is to give a general overview of existing maritime legislation, which is or will be subject to amendment, and of the introduction of new regulations.

# INTERNATIONAL MARITIME ORGANISATION (IMO)

The following information indicates the main amendments to IMO regulations entering into force from 1 January 2011 to 1 January 2012.

| Convention | Ref. | Entry into force | New ship | Existing ship | Type of ship | Source |
|---|---|---|---|---|---|---|
| **SOLAS** | II-1/3-5 | 01/01/2011 | X | X | All | MSC.282(86) |
| | The following information indicates the main amendments to IMO regulations entering into force from 1 January 2011 to 1 January 2013. | | | | | |
| **SOLAS** | II-1/35-1 | 01/01/2011 | X | X | All | MSC.282(86) |
| | Reference and compliance to regulations II-2/20.6.1.4 and II-2/20.6.1.5 (means to prevent blockage of drainage arrangements) is added in reg.II-1/35-1. | | | | | |
| **SOLAS** | V/19 | 01/01/2011 | X | X | All | MSC.282(86) |
| | Ships on international voyages shall be fitted with an ECDIS, depending on date of build and tonnage - *passenger ships > 500 gt constructed on or after 1 July 2012 - tankers > 3,000 gt constructed on or after 1 July 2012 - cargo ships, other than tankers, > 10,000 gt constructed on or after 1 July 2013 - cargo ships, other than tankers, > 3,000 gt but < 10,000 gt constructed on or after 1 July 2014 - passenger ships > 500 gt constructed before 1 July 2012, not later than the first survey* on or after 1 July 2014 - tankers > 3,000 gt constructed before 1 July 2012, not later than the first survey* on or after 1 July 2015 - cargo ships, other than tankers, > 50,000 gt constructed before 1 July 2013, not later than the first survey* on or after 1 July 2016 - cargo ships, other than tankers, > 20,000 gt but < 50,000 gt constructed before 1 July 2013, not later than the first survey* on or after 1 July 2017 - cargo ships, other than tankers, > 10,000 gt but < 20,000 gt constructed before 1 July 2013, not later than the first survey* on or after 1 July 2018.* | | | | | |
| **SOLAS** | V/19 | 01/01/2011 | X | X | All | MSC.282(86) |
| | Ships shall be fitted with a bridge navigational watch alarm system (BNWAS) as follows: - *cargo ships >150 gt and passenger ships irrespective of size constructed on or after 1 July 2011 - cargo ships >150 gt and passenger ships irrespective of size constructed on or after 1 July 2011 - cargo ships >150 gt and passenger ships irrespective of size constructed on or after 1 July 2011 - passenger ships irrespective of size constructed before 1 July 2011, not later than the first survey* after 1 July 2012 - cargo ships > 3,000 gt constructed before 1 July 2011, not later than the first survey* after 1 July 2012 - cargo ships > 500 gt but < 3,000 gt constructed before 1 July 2011, not later than the first survey* after 1 July 2013, and - cargo ships > 150 gt but < 500 gt constructed before 1 July 2011, not later than the first survey after 1 July 2014.* | | | | | |
| **SOLAS** | V/18 | 01/01/2011 | X | | All | MSC.252(83) |
| | Integrated Navigation Systems (INS) installed on or after 1 January 2011 should conform to performance standards not inferior to those specified in MSC.252(83). | | | | | |
| **SOLAS** | II-1/3-10 | 01/01/2012 | X | | Bulk carrier / oil tanker length > 150m | MSC.290(87) |
| | International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers. | | | | | |
| **SOLAS** | II-1/3-11 | 01/01/2012 | X | | Crude oil tankers | MSC.287(87) |
| | New regulation 3-11 'Corrosion protection of cargo oil tanks of crude oil tankers'. Applies to tankers of 5,000 dwt and above for which the building contract is placed on or after 1 January 2013 or the delivery of which is on or after 1 January 2016. | | | | | |
| **SOLAS** | II-1/3-11 | 01/01/2012 | X | | Crude oil tankers | MSC.291(87) |
| | Performance standard for protective coatings - in cargo oil tanks during the construction of new crude oil tankers. | | | | | |

| Convention | Ref. | Entry into force | New ship | Existing ship | Type of ship | Source |
|---|---|---|---|---|---|---|
| SOLAS | II-1/3-11 | 01/01/2012 | X | | Crude oil tankers | MSC.288(87) |
| | Performance standard for alternative means of corrosion protection for cargo oil tanks of crude oil tankers = technical requirements for the minimum standard for means of corrosion protection or utilisation of corrosion-resistant material other than protective coating. | | | | | |
| SOLAS | II-2/1.2.2 | 01/01/2012 | | X | Tanker | MSC.289(87) |
| | Reg II-2/4.5.7.1 is now applicable to ships constructed before 1 July 2002 = tankers shall be equipped with at least one portable instrument for measuring flammable vapour concentrations together with spares and means of calibration. | | | | | |
| SOLAS | II-2/5.7 | 01/01/2012 | X | | Tanker > 20,000 dwt | MSC.291(87) |
| | Paragraph 5.7 is replaced and new 5.7.3 is added = oil tankers > 20,000 dwt, constructed on or after 1 January 2012, shall be provided with a fixed hydrocarbon gas detection system complying with the FSS Code for measuring hydrocarbon gas concentrations in all ballast tanks and void spaces of double-hull and double-bottom spaces adjacent to the cargo tanks, including the forepeak tank and any other tanks and spaces under the bulkhead deck adjacent to cargo tanks. Oil tankers provided with constant operative inerting systems for such spaces need not be equipped with such a system. | | | | | |
| LSA Code | Chapter IV | 01/01/2012 | X | | All | MSC.293(87) |
| | Carrying capacity of rigid and inflatable life rafts to be calculated with an average mass of 82.5kg (instead of 72kg previously). | | | | | |
| FSS Code | Chapter 10 | 01/01/2012 | X | | All | MSC.292(87) |
| | Revised Chapter 10 – Sample extraction smoke detection systems – applicable to ships constructed on or after 1 January 2012. | | | | | |
| FSS Code | Chapter 16 | 01/01/2012 | X | | Tanker | MSC.292(87) |
| | New Chapter 12 – Specifications for fixed hydrocarbon gas detection systems as required by SOLAS Ch. II-2. | | | | | |
| HSC Code | Ch 7.17 | 01/01/2011 | | X | HSC | MSC.271(85) |
| | Craft constructed on or after 1 July 2002 but before 1 January 2011, with cargo spaces intended for the carriage of packaged dangerous goods, shall comply with 7.13.3. | | | | | |
| MARPOL Annex I | Reg.1 | 01/01/2011 | X | X | All | MEPC.187(59) |
| | New definitions of oil residue (sludge), oil residue (sludge) tank, oily bilge water, oily bilge water holding tank. | | | | | |
| MARPOL Annex I | Reg.12 | 01/01/2011 | X | X | All | MEPC.187(59) |
| | Wording has been modified in accordance with new definitions. Oil residue (sludge): to be provided with a designated pump for disposal that is capable of taking suction from the oil residue (sludge) tank(s) and shall have no discharge connections to the bilge system, oily bilge water holding tank(s), tank top or oily water separators except that the tank(s) may be fitted with drains, with manually operated self-closing valves and arrangement for visual monitoring of the settled water, that lead to an oily bilge water holding tank or bilge well, or an alternative arrangement, provided such arrangement does not connect directly to the bilge piping system. | | | | | |
| MARPOL Annex I | International Oil Pollution Prevention (IOPP) Certificate | 01/01/2011 | X | X | All | (MEPC).187(59) |
| | Section 3 of the Supplement to the IOPP Certificate, Form A and Form B, is modified. | | | | | |
| MARPOL Annex I | Chapter 8 | 01/01/2011 | X | X | Oil tankers > 150 gt involved in STS operation | MEPC.186(59) |
| | New Chapter 8 – Prevention of pollution during transfer of oil cargo between tankers at sea. Applies to oil tankers > 150gt engaged in the transfer of oil cargo at sea and their STS operations conducted on or after 1 April 2012. | | | | | |
| MARPOL Annex I | Reg. 41, 42 | 01/01/2011 | X | X | Oil tankers > 150 gt involved in STS operation | MEPC.186(59) |
| | Any oil tanker involved in STS operations shall carry on-board an STS operations plan, not later than the date of the first annual, intermediate or renewal survey of the ship, to be carried out on or after 1 January 2011. Each STS plan shall be approved by the appropriate administration. | | | | | |
| MARPOL Annex I | Chapter 9 | 01/08/2011 | X | X | All | MEPC.189(60) |
| | New Chapter 9 – special requirements for the use or carriage of oil in the Antarctic area. | | | | | |

| Convention | Ref. | Entry into force | New ship | Existing ship | Type of ship | Source |
|---|---|---|---|---|---|---|
| **MARPOL Annex VI** | Reg.13 & 14 | 01/08/2011 | X | X | All | MEPC.190(60) |
| | The North American area is an emission control area (ECA) for the purpose of Reg.13 (NOx) and Reg.14 (SOx). | | | | | |
| **IMSBC Code** | | 01/01/2011 | X | X | All | MSC.268(85) |
| | The new IMSBC Code supersedes the previous BC Code. Mandatory application from 1 January 2011. | | | | | |
| **Assembly** | A.1024(26) | 01/01/2011 | X | | Polar | A.1024(26) |
| | Guidelines for ships operating in polar waters – for ships constructed on or after 1 January 2011 and application encouraged for ships constructed before 1 January 2011. | | | | | |
| **Code of practice for safe unloading and unloading of bulk carriers (BLU) Code** | | 01/01/2011 | X | X | Bulk carrier | MSC.304(87) |
| | Amendments to the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (incorporated into the supplement of the IMSBC Code). | | | | | |
| **Ballast Water Management (BWM)** | Section B B-3.1.3 | 31/12/2011 | X | | Ships constructed in or after 2009 with ballast capacity of < 5,000m$^3$ | |
| | Ballast water treatment (D2). | | | | | |

# INTERNATIONAL LABOUR ORGANISATION

## THE MARITIME LABOUR CONVENTION 2006 – UPDATE

The Maritime Labour Convention (MLC) 2006 has been described as the 'fourth pillar' of international maritime regulatory conventions, complementing:

- the International Convention for the Safety of Life at Sea (SOLAS)
- the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
- the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL)

The Maritime Labour Convention has incorporated 67 previous International Labour Organisation (ILO) legal instruments relating to seafarers' accommodation, rest hours, medical care and repatriation. Shipowners should be aware of the requirements of the convention and prepare for its introduction. Many well operated companies already comply with all or most of the requirements, After ratification, failure to comply could result in fines and detentions.

The convention is due to come into force 12 months after the date on which its ratification has been registered by at least 30 members with a total share of 33% of the worldwide gross tonnage of merchant ships. This tonnage requirement has already been met and it is forecast that the country ratification requirement will be achieved in mid-2012.

# SAFETY AND LOSS PREVENTION NEWS

## HARD-HITTING VIDEOS: HAZARD SERIES 2

These are 10 short films, in the style of commercials, which illustrate common incidents and their tragic consequences.


^ Injury sustained using portable ladder

The first hard-hitting sequences are designed both to shock and to teach the viewer. Following that, the same tasks are shown, but this time the correct procedures and working techniques are followed, showing how incidents can be avoided.

The films make extensive use of modern image techniques to grab the viewer's attention and to confront the severity of easily avoidable mistakes. Filmed with real crew doing real work, these films generate extensive and targeted training aimed at leaving a lasting impression on their audience.

**Main topics**

- heavy weather: working on deck
- electrical work: isolation
- housekeeping: keeping access ways clear
- manual handling: the galley
- powered watertight doors
- food safety: personal hygiene
- working aloft: ladders
- fixed $CO_2$ fire fighting systems: familiarisation
- engine room maintenance and repair: steam lines
- lifeboats: fall preventer devices

**The Hazard Series is produced by VIDEOTEL in association with the Standard P&I Club.**

Copies for your ships can be purchased directly from Videotel:

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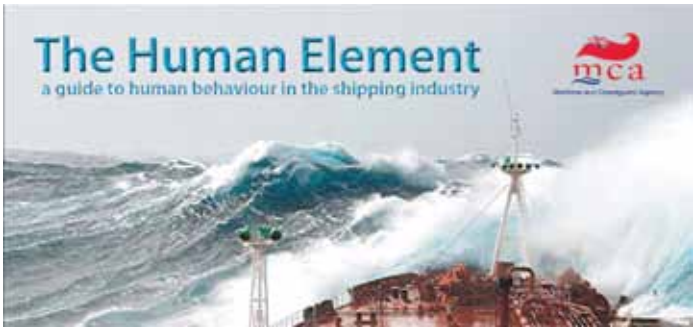
# HUMAN ELEMENT SEMINARS

The Standard Club, as part of its commitment to assisting the club's members and promoting best practices, supported and was privileged to be involved in the UK's Marine and Coast Guard's Agency's (MCA) consortium that produced the book The Human Element – a guide to human behaviour in the shipping industry. It is now fully accepted by all involved in the industry, that is, the people that cause the incidents, accidents and claims. Experts from the US Coast Guard to NASA to the MCA all agree that over 80% of accidents are caused by human factors. The clubs experience mirrors this; there are very few major claims that are caused by a failure that is not directly human factor related. Generally speaking the hardware, the ship and its machinery have been designed and made to high standard and it is rare that a machine fails causing an incident without some human involvement.

It is a part of the natural order that humans will always make mistakes; it is not only normal but inescapable. However when these minor mistakes can individually or cumulatively end up being major incidents; it is these major mistakes that cause fatalities and /or have a significant impact on companies. There is therefore a need to accept this fact and then to manage, to analyse and put defences in place to prevent these mistakes from developing into a major incident. With this in mind, the club embarked upon a series of seminars to act as a 'catalyst of awareness' for senior managers to manage and identify serious risks inherent with human factors within their organisations. This is something that is not just relevant to shipping companies but also to most organisations; however, in shipping getting it wrong can potentially cause the deaths of seafarers, passengers, cause pollution and possible economic disruption to ports and even to whole countries.

The initial series of four seminars were held in Hamburg, Athens, Singapore and Seoul during July, September and November 2011. Senior executives in the member's operational and technical departments were invited to attend. The seminars were constructed to promote thought as to what tools and defences can be productively used to prevent mistakes from developing into the significant event and how organisations:

- can produce a 'just culture'
- can enhance training programmes
- can reduce the number of attritional incidents, which erode efficiency and reputation
- can prevent the disaster that could become the big one
- can improve the bottom line




The Standard Club participated in a consortium, headed by the United Kingdom's Maritime & Coastguard Agency, which produced The Human Element – a guide to human behaviour in the shipping industry. The publication, written by two leading organisational psychologists, has since its launch a year ago been distributed by more than 130,000 organisations and individuals worldwide.

# AUTHORS' PROFILES

### CHRIS SPENCER
**Director of Loss Prevention**
Chris is a Master Mariner with 13 years at sea, with command experience. In previous roles he was director of a North Sea offshore supply vessel company from 1996 and the managing director of a UK-based LPG and petrochemical gas tanker owner/manager from 1999, and vice-president of a Norwegian owned gas and chemical tanker owner/manager from 2006. Chris joined the Standard Club in 2008 as the Director of Loss Prevention.

### DAVID TILSLEY
**Safety and Loss Prevention Executive**
David is a qualified ship's navigation officer having previously sailed as Second Officer onboard container ships. His qualification include Officer of the Watch (OOW) unlimited certification with a Higher National Diploma in Nautical Science at distinction level. His ship experience includes time spent on container ships and chemical tankers deep sea. David joined the Standard Club in 2010 as the Safety and Loss Prevention Executive.

### ERIC MURDOCH
**Chief Surveyor**
Eric qualified as a ship's navigation officer before obtaining a BSc in Naval Architecture and MSc in Ship Production. He is registered as a Chartered Engineer and Chartered Marine Engineer. Eric worked for British Ship Builders as a ship design engineer from 1981 and for Lloyd's Register as a surveyor from 1983. Eric joined Charles Taylor in 1989 and established the Standard Club's safety and loss department.

### MARK FORD
**Senior Surveyor**
Mark obtained his Class One Motor Marine Engineers Certificate at the age of 26. He has 25 years seagoing experience split between bulk carriers and offshore diving support vessels, ultimately sailing as Chief Engineer. Prior roles include Engineer Superintendent with shipping company, responsible for organisation of dry dockings, maintenance, repair and general running of the fleet and as a Marine Engineer Consultant for a company specialising in the LNG shipping sector and worked on various LNG carrier projects, factory acceptance tests and retro-fit specifications. Mark joined the Standard Club in 2009 as marine surveyor.

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