

# RISK WATCH

## Loss prevention edition

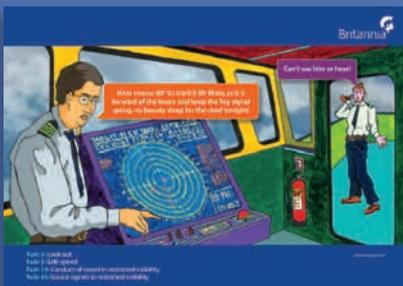
Featuring articles on tanker shortage claims, the new CTU Code and the carriage of break bulk cargo.

# Tanker shortage claims: cargo remaining on board (ROB)



### Loss prevention

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This article continues our series highlighting good practices that can be shared with Members and looks at shortage claims due to cargo residues remaining on board (ROB).

Claims for short-landed cargo arise if an excessive residue of the cargo loaded remains on board after completion of the discharge. To assist in defending such claims, the ship must show that all 'pumpable' cargo was discharged. In order to do this, the ship's crew must carefully record all details of the loading and discharge operations and must show that they acted in accordance with the ship's procedures. They must also show that they were complying with the industry standards for the carriage of the particular cargo.

Our analysis of recent shortage claims against Members shows that there are three main factors which contribute to ROB claims:

- 1) Nature of the cargo.
- 2) Heating of the cargo during carriage and at discharge.
- 3) Unpumpable cargo: sediment/sludge.

We will discuss these factors in detail below and provide examples of claims handled by the Club. In all cases, and always prior to loading, it is essential that Members receive clear instructions from charterers (and shippers, as appropriate) on the cargo, including any specific handling requirements eg when, for how long and to what temperature to heat cargo. In turn, those instructions should be provided to the master and crew.

## Loss prevention

### Tanker shortage claims: cargo remaining on board (ROB) (continued)

#### 1) Nature of the cargo

It is often the case that the inherent nature of the cargo is not properly considered when fixing the ship, especially when looking at the pumping capabilities and the heating system of the ship.

#### Molasses

Molasses is a dark, viscous by-product of the sugar refining process. Molasses may have a viscosity of several hundred centistokes (as a comparison, a very heavy lubricating oil may be in the region of 100 centistokes). The viscosity of molasses is affected both by dry matter content and temperature. For example, a rise in temperature of 10°C may reduce the viscosity to half (or even less) and a reduction in the dry matter content will also decrease viscosity. Due to high viscosity and dry matter in the cargo, it can be difficult to handle the cargo with traditional centrifugal pumps and, therefore, screw pumps are best suited for handling molasses cargo. Sometimes steam is required to help with the removal of ROB. Chartering and commercial departments should be aware of these issues when fixing a molasses cargo.

Further observations:

- Heating instructions must be followed precisely and a heating log must be maintained.
- The temperature should be measured at several positions and levels in the tank as different temperatures can be experienced within the cargo.

- At a temperature of 40°C molasses is relatively stable but as the temperature is raised, sugar may be lost by thermal decomposition and the cargo could be found to be off-spec. Where temperatures over 60°C are recorded there is a heightened possibility of thermal decomposition that could result in the complete destruction of the cargo. The crew should be vigilant in monitoring the temperature of the cargo to ensure that it does not exceed 40°C.

#### Crude oil

Over the past few years there has been an increase in the number of variations in both the types and quality of crude oil. Traditionally, crude oil is heated when it is carried and a crude oil wash (COW) is carried out at the completion of discharge. However, there are exceptions, two of which were apparent from our analysis of shortage claims where it will not be appropriate to carry out a COW:

- Viscous/waxy cargoes – COW may lead to high ROB; and
- Volatile cargoes – COW causes excessive gas evolution.

#### Crude palm oil

In order to maximise outturn, it is usually necessary to sweep any residue of crude palm oil manually from the cargo tanks at the final stage of discharge. The Club has handled a shortage claim where the shortage was due, in part at least, to the fact that the terminal restricted this sweeping of the cargo tanks.

#### 2) Heating of the cargo during carriage and at discharge

Many cargoes need to be maintained at specific temperatures during the voyage and at the discharge port. The Federation of Oils, Seeds and Fats Associations (FOSFA) provides heating instructions for vegetable oil cargoes during the sea voyage and discharge operations.

In a recent case, a Member's ship loaded 2,555.942 mt of Indonesian RBD palm stearin in bulk destined for Europe. The cargo was loaded into ship's tank no. 3 starboard. In this case, the ship's temperature records, obtained from the chief officer, indicated that the FOSFA recommended temperatures were maintained throughout the sea passage.

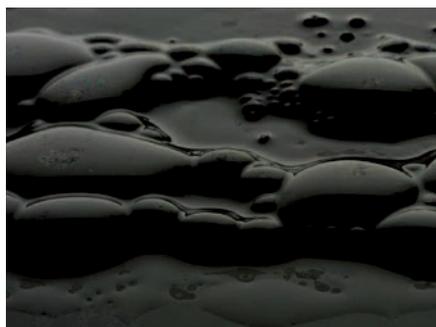
The cargo tanks were equipped with framo cargo heaters. In order to heat the cargo, the cargo pumps are used to re-circulate the cargo through the heater until the required temperature is achieved. Cargo cannot be discharged and heated at the same time and so when cargo is being heated, discharge must stop.

The cargo discharge was stopped twice in order for the ship to conduct heating and re-circulation of the cargo. Despite this, the cargo temperature during discharge was below the required level.

When the ROB was 50mt, the hose was disconnected by the terminal due to a misunderstanding between the chief mate and the terminal staff. The chief officer immediately requested that the hose be reconnected with the intention to reload a small quantity of the cargo from the terminal in order to warm up the remaining cargo.



Molasses



Crude oil



Crude palm oil

However, on instructions from the cargo receivers, the terminal rejected the chief officer's request. The ship was then instructed by the local agent to shift to another terminal in order to discharge further parcels and to avoid both delay and expense.

The master and chief officer issued protests but the ship had to change berths while the crew heated the ROB cargo. After completing discharge of the other parcels, the master informed the agents that more time was required to heat the ROB cargo from the first parcel. As a result the ship was moved to anchorage.

The remaining 50mt of palm stearin cargo was discharged after several hours of heating, re-circulation, sweeping and also mopping-up of the dense/solidified product in the tank bottom, by the ship's crew.

The delay to the ship and additional costs could have been prevented by better preparation of the cargo plan, including consideration of the nature of the ship's cargo heating system. In addition, the discharge should have been carried out with more care as follows:

- As soon as the chief officer noticed a reduction in the discharge rate (due to low temperature) discharge should have been suspended. The cargo lines should then have been cleared and the heating system re-started, with the discharge resuming as soon as the temperature reached the minimum level required.
- This operation should have continued until the minimum amount of cargo remained in order to maintain sufficient heat transfer

throughout the cargo (typically 1 metre of sounding). This would ensure that the remaining cargo could be pumped, despite the absence of heating. Discharge could then be completed with final stripping.

- The crew should also have considered internal stripping of cargo ROB into one tank.

In similar cases, the Club has noted that there has been a high ROB due to heat loss caused by cold ballast water reaching the tank top. When ballasting, the tanks should be kept slack if possible to avoid the tank top cooling down too quickly during discharge.

### 3) Unpumpable cargo: sediment/sludge ROB claims can arise from cargo sediments remaining in the tank.

The Club recently handled a claim in respect of a cargo of waxy paraffinic crude oil where the total wax content and pour point values were not declared in the cargo documents issued by the load port terminal. As a consequence, the crew were under a misapprehension as to the nature of the cargo and they treated this cargo as if it were a waxy crude oil, heating all the cargo tanks and the slop tank in order to carry out a COW.

If the correct cargo documentation had been available and had been read properly then the crew would have realised that the properties of this waxy paraffinic crude oil meant that they did not need to carry out a COW.

### Conclusion

Members should always ensure that they receive clear and understandable instructions from the charterers, which should include tank cleaning requirements and tank heating instructions.

The instructions may also include references to particular trade requirements, such as FOSFA.

The instructions should be communicated to the master and crew and if there is any doubt about the exact nature of the cargo to be carried or about the voyage instructions, then immediate clarification should be sought from the charterers.

In addition, before loading and discharging the master and crew must have full knowledge of the intended loading/discharge plan.



Framo cargo heaters



Waxy sediment/sludge at the bottom of the tank



## Loss prevention

# New CTU Code: improved guidelines for intermodal container packing

In November 2014 the 'Guidelines for Packing Cargo Transport Units (CTUs)' were replaced and upgraded from guidelines to a code of practice. It is now commonly known as the CTU Code. The original guidelines were produced by three UN agencies, the International Maritime Organisation (IMO), the International Labour Organisation (ILO) and the United Nations Economic Commission for Europe (UNECE).

There has been increasing concern throughout the intermodal transport industry that containers are being packed many miles from the sea without consideration for the fact that the cargo must be properly secured for the entire transit, including the sea voyage. The shipper has the responsibility for declaring, packing and securing the cargo. The nature of the transport chain can mean that once the unit is packed and sealed it may not be opened again until it reaches the consignee.

The new Code sets out to reduce damage to cargo caused by poor packing and securing within the CTU with the overall aim of making the supply chain safer. The Code provides advice about the basic principles of planning and packing of CTUs and then securing the cargo in accordance with the proposed transport plan. The Code also includes information about the potential causes of cargo damage, such as condensation and infestation.

Three UN agencies are involved (IMO, ILO and UNECE) as the Code covers the entire intermodal transport network and not just the maritime sector. The Code includes all types of CTUs and is not confined to Container Safety Convention (CSC) plated International Organisation for Standardisation (ISO) containers.

The Code has been drafted by a single working group affiliated to all three UN agencies and is available on the UNECE and ILO websites (details are provided at the end of this article). The previous guidelines were hard to locate, although they did appear in the supplement to IMDG Code. The intention of the UN working group was to produce a Code that would be comprehensive and freely available throughout the supply chain, in order to promote its use.

Although the Code has more authority than its predecessor guidelines, it is still not a mandatory document. That said, it may be adopted into local law by national governments. Should sufficient national governments adopt the Code it could, in time, become globally mandatory in the same way as the IMDG Code.

The Code has 13 chapters and 10 annexes. Much of the information collated in preparing the Code was considered to be too specific or likely to become out of date and therefore was not included in the Code. This information has been designated as 'related material' and can be updated by interested industry bodies in the future. It is not envisaged that the Code will be updated regularly in the same manner as the IMDG Code.



Cell guides and lashing rods on a container ship



Irregular shaped packages blocked with dunnage bags



Temporary timber floor

## An overview of the structure of the CTU Code:

### Chapter 1

#### **Introduction**

Scope, safety and security.

### Chapter 2

#### **Definitions**

Clarifying commonly used terms in the carriage of a CTU. This is intended to promote standardised vocabulary used in CTU packing.

### Chapter 3

#### **Key requirements**

Simple concise guidance for those packing and securing cargo in CTUs.

### Chapter 4

#### **Responsibilities**

Making it clear who is responsible for each aspect of the supply chain.

### Chapter 5

#### **Transport conditions**

A summary of forces that each transport mode places on the cargo, including consideration of the extremes of temperature the CTU would be exposed to and the possibility of the formation of condensation in certain climatic conditions.

### Chapter 6

#### **CTU properties**

The properties of freight containers, regional and domestic containers, swap bodies, road and rail vehicles.

### Chapter 7

#### **CTU suitability**

The necessity of selecting the correct CTU type for differing cargoes and transport mode.

### Chapter 8

#### **Arrival checking and positioning CTU for loading/discharging**

Consideration of the checks of approval plates and internal and external checks on the CTU prior to packing.

### Chapter 9

#### **Packing cargo into the CTU**

Principles, planning and securing.

### Chapter 10

#### **Advice when packing dangerous cargo**

### Chapter 11

#### **Advice on completion of packing**

Closing, securing and marking the CTU.

### Chapter 12

#### **Advice on receipt and unpacking of CTU**

Precautions to be undertaken, unpacking and returning the CTU to the carrier.

### Chapter 13

#### **Training: regulatory bodies**

This section provides for regulatory bodies to make sure that training is given for those involved in the packing of a CTU. This will be at the discretion of each national government to implement as they deem fit.

### **Annexes**

These cover a wide variety of subjects, such as detailing prevention methods for condensation and minimising contamination. There is also cargo specific information on packing and securing, packaging marks, use of friction mats and fumigation.

### **Conclusion**

The Code will only become effective if it is implemented by all parties involved in the transport supply chain. It is most important that the Code is advertised to shippers and packers of cargo. The ILO, IMO and UNECE will promote the Code. In the meantime, the UN working group of experts felt that one of the best methods to achieve rapid and wide acceptance is for the container carriers to promote the Code when accepting bookings. The ILO website link, which will give free access to the Code and Annexes, could be placed on booking confirmations in order to help promote the Code.

The ILO website includes French and Spanish versions.

The full Code is available on the following links:

<http://goo.gl/UYmptJ>

<http://goo.gl/FHQ5V6>

Related material:

<http://goo.gl/d06LzR>



Container fitted with flexitank



Cargo firmly secured to pallets by textile lashings



Cutting the seal

## Loss prevention

# Know your break bulk cargo



General cargo loaded in a bulk carrier



Stowage and lashing of vehicles stowed on top of cement cargo

The Club has recently noted a number of incidents involving bulk carriers. The majority of these claims fall into two types. The first is where the loading, stowage and securing of break bulk cargoes has been inadequate and has led to cargo shifting and stows collapsing. As well as damage to the cargo, this has also led to problems with the stability of the ship. The second type is where vehicles have been incorrectly identified as non-dangerous cargo. In this article, we look at examples of both types of incidents and aim to provide guidance as to how such incidents can be avoided.

Members are reminded that cargo must always be loaded, stowed and secured in accordance with the Code of Safe Practice for Cargo Stowage and Securing (CSS Code) and the ship's cargo securing manual (CSM).

### 1) Loading, stowing and securing

There have been a number of incidents where vehicles and heavy project cargoes have been stowed on top of bagged cargo which does not always provide a firm enough base for safely stowing or securing the heavier cargo.

Other cases have shown that wheel-based cargoes are often secured to other cargo and not to the ship as they should be in order to comply with the ship's CSM. Cargoes of vehicles are often lashed to non-approved lashing points on bulkheads and sometimes they are even lashed to each other. Lashings are not always checked and tightened regularly and the failure of any one lashing or lashing point in the chain could mean that vehicles in the stow shift.

It is often the case that insufficient dunnage, chocking and shoring is provided for vehicles, steel coils, project cargo and bagged cargoes when stowed together.

The crew should be aware of the following issues at the various stages of the voyage.

#### Prior to carriage

- A list of the proposed cargo must be obtained from the shipper/charterer, including any stowage or lashing requirements and restrictions (SOLAS, Chapter VI, Regulation 2 and CSS Code sub-chapter 1.9).
- A risk assessment must be undertaken to assess the carriage considerations, cargo care, stowage, lashing requirements and any limitations.
- Any ship, including a bulk carrier, that carries break-bulk or general cargo is required to carry an approved and up-to-date CSM, drawn up to a standard at least equivalent to the IMO guidelines and which is appropriate for all the cargoes to be carried on board that ship. If required, the CSM should be updated to make sure that it covers the cargo proposed for carriage.
- Responsibilities for stowage and lashing should be clarified and agreed in the charterparty in line with the ship's CSM, and appropriate instructions issued to the master.
- If required, a suitable port captain or surveyor should be appointed to assist the master.

#### Pre-loading

- Any additional lashing points in the cargo holds or on deck must be approved by the appropriate flag state administration.
- Suitable dunnage and lashing equipment must be provided, taking into account the dimensions and stability of the cargo, the expected weather conditions en-route and the requirements of the ship-specific CSM, the CSS Code and/or SOLAS, as appropriate.

#### During loading

- All loading and lashing must be supervised by the ship's staff to ensure that the cargo is stowed in compliance with the approved loading and lashing plan.
- Appropriate lashings should be attached to approved lashing points.
- Dunnage, chocking and lashing must be checked and verified prior to signing any relevant documentation.

#### En-route

- Regular checks of the cargo and lashing must be carried out, particularly prior to and after any heavy weather and lashings must be tightened as required.
- If any damage is noted, the owners/managers, P&I and other relevant parties must be notified promptly.



Proximity stowage of vehicles stowed on top of cement cargo



Damaged cargo at the discharge port



Inadequate separation, securing and lashings

### At the discharge port

- The discharge operation should be monitored by the ship's staff and any damage noted and signed for.
- Photographs and other evidence should be obtained and retained for investigation.

### 2) Vehicles incorrectly identified as non-dangerous cargo

The carriage of vehicles presents a potential fire hazard which is covered by the IMDG Code UN No 3166 (including special provisions 961 and 962) which allows motor vehicles with fuel in their tanks for their own propulsion to be carried in specially designed 'vehicle spaces'. If certain criteria are met (fuel tanks being empty and installed batteries being protected from short circuit) then vehicles can be accepted as non-dangerous goods. Otherwise, the vehicles must be declared as Class 9 dangerous goods.

SOLAS regulation II-2/3.49 defines 'Vehicle Spaces' as: 'cargo spaces intended for carriage of motor vehicles with fuel in their tanks for their own propulsion.'

When vehicles or dangerous goods are carried in general cargo holds or on deck, as Class 9 UN No 3166 dangerous cargo, the stowage instructions of the IMDG Code shall be followed and stowage shall be in line with the ship's certificate of fitness to carry dangerous cargo (per SOLAS Reg. II-2/10).

### Fire safety

- Bulk carriers do not usually have fixed fire extinguishing systems fitted in cargo holds, unless they are designed for the carriage of dangerous cargoes and provided with a Document of Compliance for the Carriage of Dangerous Goods.

- A ship engaged in the carriage of dangerous goods in any cargo spaces shall be provided with a fixed carbon dioxide or inert gas fire-extinguishing system complying with the provisions of the Fire Safety Systems Code (or equivalent).

### Securing vehicles

- They should be secured to the ship by lashings made of material with strength and elongation characteristics at least equivalent to steel chain or wire.
- If carried as part cargo, they should be stowed close to the ship's side or in stowage positions which provide plenty of securing points of sufficient strength or they should be block stowed from side to side in the cargo space.
- They should be stowed in a fore-and-aft direction rather than athwartships. If stowed athwartships, additional securing of sufficient strength may be necessary.
- Brakes should be set and the wheels blocked to prevent shifting.

Full details of how to secure vehicles is covered by the CSS Code, Annex 4.

### Summary

The master and crew must ensure that they have a comprehensive working knowledge of the stowage and securing capabilities of their ship and that they carry out risk assessments for all cargoes carried. Particular attention needs to be given to the carriage of all break bulk cargoes. Where vehicles are being carried, proper consideration needs to be given to the potential fire risk on board. This will require full appraisal of fire hazards, including the fuel tanks and batteries of the vehicles.

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## Loss prevention

### Publications

#### Operating in Emission Control Areas: Part 1 The Guide 2015 Edition

#### Operating in Emission Control Areas: Part 2 The Manual 2015 Edition Witherby Seamanship January 2015

The January 2015 <0.1% sulphur limit in Emission Control Areas has a real impact on how owners and operators must manage their fleets to ensure safe, effective and competitive operations.

This comprehensive resource ensures ship owners and operators understand how to effect a smooth transition and furthermore operate competitive, safe and cost effective operations within ECAs. Produced in association with Lloyd's Register, the Guide delivers impartial, expert guidance and practical information on all aspects of operating within Emission Control Areas and the Manual provides a total reference guide for crews on board in a durable hard cover file that ensures crews have complete knowledge of all procedures required for compliance.

<http://goo.gl/YvYBZa>

<http://goo.gl/1NeBLh>

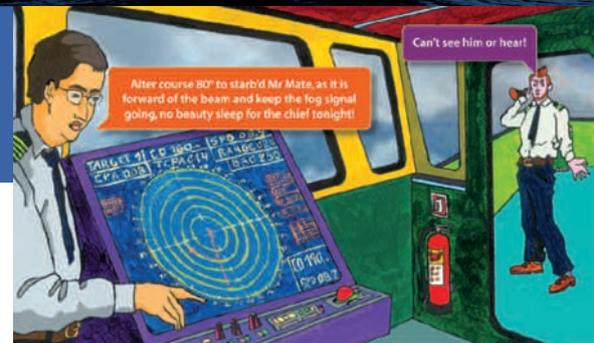


#### A Master's Guide to Cyber Security Witherby Seamanship February 2015

The Guide is written in non-technical language to ensure it is accessible to those for whom English is not their first language and it includes an 'aide-memoire' to give quick, practical advice to masters. It is not UK specific and relevant to all nationalities of ship, operator and crew.

Maritime Cyber Security is a topic of serious concern to the shipowning community. It affects almost all areas of ship operations and has significant implications for safety and business risk.

<http://goo.gl/MZ34TW>



#### Loss prevention poster campaign: COLREGs 5, 6, 19 and 35

The sixth poster in the series considers poor visibility and the fact that in many such cases that have been reviewed by the loss prevention team, the ships have not sounded the fog signal as required by the rules.

The poster shows a young officer on the starboard bridge wing who is reporting to the master that he can neither see nor hear the approaching ship which is 10° forward of the starboard beam. The other ship is being plotted and is on a collision course. Both ships are proceeding at what each master considers to be a safe speed and both should, therefore, be ready for immediate manoeuvre.

The master makes the decision to alter course to starboard in accordance with rule 19 as the other ship is forward of his beam and not on or abaft the starboard beam. In altering course he is making a really bold alteration. It will be very obvious to the other ship that action has been taken.

The plot on the other ship will soon highlight the alteration and the closest point of approach will start increasing. Once the ship is past and clear, the plot will allow our ship to return to the original track.

Rule 5 states that a good lookout should be maintained by all available means and should carry on throughout the manoeuvring process. In the poster, the young officer is shown holding an ear trumpet which highlights the need to keep a good listening watch for fog signals from other ships. In addition, the master continues to sound the fog signal – despite the possible disturbance for those trying to get some rest – in order to comply with rule 35.