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**UNIVERSITY OF SOUTHAMPTON**

**FACULTY OF BUSINESS AND LAW**

School of Law

**The Carriage of Liquefiable Cargo: Regulations, Rights and Liabilities**

by

**Moustafa Ahmad Fkhir**

Thesis for the degree of Doctor of Philosophy

September 2017

## ABSTRACT

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FACULTY OF BUSINESS AND LAW

Thesis for the degree of Doctor of Philosophy

**THE CARRIAGE OF LIQUEFIABLE CARGO: REGULATIONS, RIGHTS AND LIABILITIES**

Moustafa Ahmad Fkhir

Solid bulk liquefaction has contributed to the occurrence of many major disasters in the bulk shipping industry. Albeit not being a recent phenomenon, the world was alerted to its dangers following the loss of three vessels within three months in 2010, claiming a death toll of 44 crewmembers. Some types of solid bulk materials, i.e. iron ore fine and nickel ore, have a tendency to liquefy after being loaded aboard ships, due to their unique character in rapidly transforming from solid to semi-liquid state. This abnormal behaviour is resulted from an increase in the moisture content present in the cargo, which may have been developed by reason of the vessel's motion or vibrations coming from the engine room. Consequently, the cargo shifts within the vessel's holds and drastically endangers her stability which may result in capsizing. Therefore, liquefiable solid bulk materials were described as '*a wet wolf in a dry sheep's clothing*', as they appear dry and safe at loading, but later liquefy jeopardising the safety of life and property at sea.

The relevant regulation, namely the International Maritime Solid Bulk Cargo (IMSBC) Code, has been criticised for failing to tackle the occurrence of liquefaction incidents. The shipping industry has been mostly dealing with the liquefaction issue from a technical perspective, either recommending the use of different test methods on the cargo to be loaded or altering vessels' hull structure to accommodate any liquefaction that may occur. As a result, there is no legal research being carried out that outlines the legal implications of the issue of solid bulk liquefaction on charterparties, and thus shippers, charterers and carriers are often left in dilemma as to the question of liability once liquefaction occurs and causes the loss of the ship, or when the safety of the cargo cannot be ascertained at the load port resulting in substantial delay.

Therefore, this thesis undertakes a thorough assessment of the IMSBC Code's effectiveness, identifying its flaws and reviewing why parties fall short of compliance with its provisions, in Chapter 2. The thesis establishes that mis-categorisation of cargoes within the Code, unreliable test methods delivering inaccurate results and improper enforcement by port authorities are the main factors undermining the effectiveness of the Code. In addition, this thesis examines the application of well-established legal principles under English law to determine the allocation of risk problems that may arise, following liquefaction of the cargo onboard. In particular, it outlines the circumstances when the carrier can rely on the inherent vice defence to exclude his liability for the liquefied-damaged cargo in Chapter 3 and, in Chapter 4, it addresses when solid bulk materials can be regarded as dangerous goods, and the consequences on the liabilities of the parties resulting therefrom.

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My higher education over ten years comes to an end, but now a lifetime of learning lies before me. To all those who have been part of my journey, *Thank you very much!*

*M. A. Fekhir*

#### **Author's Published Articles on Liquefaction\***

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- Fkhir, M. A., 'On solid bulk liquefaction' (2016). Vol. 16. *Shipping & Trade Law* 1-3.
- Fkhir, M. A., 'Liquefaction: shipping industry response' (2017). Vol. 17. *Shipping & Trade Law* 4-5.

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\* These articles are fully reproduced in Annex [8] Author's articles on liquefaction.

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## **Academic Thesis: Declaration of Authorship**

I, Moustafa Ahmad Fkhir, declare that this thesis and the work presented in it are my own, and that it has been generated by me as the result of my own original research.

### **The Carriage of Liquefiable Cargo: Regulations, Rights and Liabilities**

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at the University of Southampton;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work; and
5. I have acknowledged all main sources of help.

Signe

Date:

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**Chapter One:**  
**General Introduction**

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### 1.1 What is bulk cargo liquefaction?

In simple terms, as the name implies, it is the ability of dry cargo to transform from solid to a semi-liquid state. Solid bulk materials have a tendency to liquefy by reason of compaction within the holds of the ship, whereby the grain particles are compressed by certain forces resulting from the vessel's motion at sea or vibrations from the engine room. This compression causes the moisture present in the cargo to migrate to the surface, and thus create the free water effect. The consistent rolling and pitching of the vessel, affected by sea-waves, will in turn displace the cargo within the holds. This means the cargo may shift from the centre of the hold and pile on the side bulkheads with one swell, but fail to return with the next one. This cargo behaviour may significantly destabilise the vessel and could, ultimately, cause her to capsize.

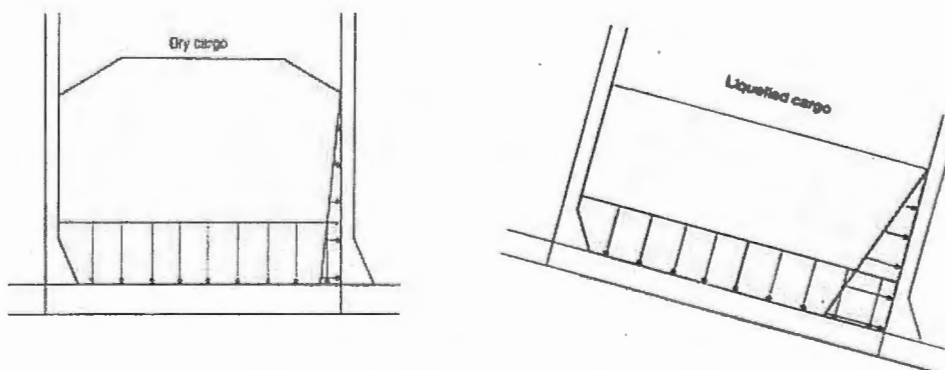


Figure 1 – cargo shift

As illustrated in Figure 1 above, the picture on the left represents dry cargo in which it is safely laid out at the bottom of the hold, where the vessel is upright and stable. When the vessel starts to roll and the cargo shifts to one side of the ship but does not flow back with the next roll, it creates an extreme pressure on that one side, as shown in the picture on the right. At this stage, the vessel develops a list which may aggressively increase for the risk of capsizing to become imminent.<sup>1</sup> Certainly, the degree of liquefaction does vary from one case to another, and it does not always result in the loss of the ship. However, the reported liquefaction incidents indicate that once liquefaction occurs,<sup>2</sup> there is very little the ship can do, as a list of more than 45° could be rapidly achieved.

There is a high demand for the transportation of solid bulk materials, in particular nickel ore, iron ore fines and other mineral concentrates, most of which are prone to liquefy. Solid bulk liquefaction is not a new phenomenon in the bulk carriers industry, as early cases of liquefaction date back to the 1960s.<sup>3</sup> However, it attracted an urgent attention following a series of marine casualties in 2010, which had seen the loss of 44 crewmembers within less than three months.<sup>4</sup> These incidents prompted the International Maritime Organisation (IMO) to take measures aimed at amending existing regulations in order to enhance the safety of solid bulk carriage.<sup>5</sup> The primary regulation that governs shipments of solid bulk materials is the International Maritime Solid Bulk Cargoes (IMSBC) Code, which became mandatory in 2011.<sup>6</sup> The provisions of the Code are analysed in Chapter 2 of this thesis. For the purpose of this chapter, however, it is sufficient to outline the safe parameters addressed within the Code, under which solid bulk cargoes can be safely shipped. In summary, there are three types of solid bulk materials, as categorised by the Code, namely: Group A refers to cargoes that may liquefy if shipped with high moisture content, Group B identifies cargoes that may give rise to dangerous situations on ships due to chemical hazards, and Group C cargoes which are neither liable to liquefy nor to possess any chemical hazard. It is only Groups A and C

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<sup>1</sup> DNV.GL. 'Bulk Cargo Liquefaction Guideline for design and operation of vessels with bulk cargo that may liquefy' (Available on: <https://www.dnvgl.com/news/a-safer-bulk-trade-dnv-gl-releases-new-guideline-on-cargo-liquefaction-44410>) Accessed December 2015. (p.9).

<sup>2</sup> The main liquefaction casualties are discussed in 1.2 below.

<sup>3</sup> *Micada Compania Naviera v Texim* [1968] 2 Lloyd's Rep. 57. Also, see Annex 1 Liquefaction-related incidents table.

<sup>4</sup> The *Asian Forest*, *Jian Fu Star* and *Nasco Diamond*, discussed in 1.2 below.

<sup>5</sup> The applicable regulations are discussed in Chapter 2.

<sup>6</sup> The IMSBC Code entered into force on 1 January 2011, from which date it was made mandatory under SOLAS provisions. The latest 2013 edition incorporates amendment 01-11, by resolution MSC.318(89), and amendment 02-13, by resolution MSC.354(92). Most recently, the Code was amended by resolution MSC.393(95) incorporating amendments 03-15, anticipating its envisaged official entry into force on 1 January 2017.

cargoes that are considered under this thesis, whereby Group B cargoes do not pose the risk of liquefaction.<sup>7</sup>

Liquefiable solid bulk materials can be safely carried onboard bulk carriers, provided their moisture content is kept within safe limits. The actual moisture content of a cargo must be less than its Transportable Moisture Limit (TML),<sup>8</sup> which represents the maximum moisture content level that could be present in a cargo, yet still be considered safe for shipment. Group A cargoes with a moisture content that is in excess of its TML must not be accepted for shipment.<sup>9</sup> The safe moisture limits of any given solid bulk cargo, that is listed in the Code,<sup>10</sup> can be found in the specific cargo schedule enclosed in Appendix 1 of the IMSBC Code.<sup>11</sup> Accordingly, shippers, or charterers, must maintain the safe moisture content present in their solid bulk cargo prior to its loading onboard the ship, and the carrier must follow the precautions, prescribed within the Code, for the loading, stowage and trimming of the cargo within the holds.<sup>12</sup>

## 1.2 Marine causalities

As aforementioned, solid bulk liquefaction is not a recent occurrence in the maritime industry, but it attained headlines following major causalities which resulted in an alarming number of deaths amongst seafarers and loss of properties.<sup>13</sup> Although liquefaction has been confirmed as the main cause for several of these losses, it is speculated to be one of the contributory causes in many other causalities that involved carriage of solid bulk materials.<sup>14</sup> Solid bulk liquefaction remains one of the

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<sup>7</sup> Save for cargoes which are classified as Group A and B, whereby these materials can liquefy as well as create chemical hazards. Discussed further in Chapter 2.

<sup>8</sup> Section 7.3.1.1. (TML is defined in section 1.7 of the IMSBC Code)

<sup>9</sup> See section 7 of the IMSBC Code.

<sup>10</sup> Section 1.3 of the Code outlines the procedures to be followed in loading solid bulk materials that are not listed in the IMSBC Code.

<sup>11</sup> Appendix 1 provides a wide list of individual schedules for various solid bulk materials, listed within the Code, that detail specific precautions for each solid bulk cargo to be loaded.

<sup>12</sup> Obligations required from shippers and masters under the Code are discussed in Chapter 2.

<sup>13</sup> For a full list of liquefaction-related causalities, see Annex 1 Liquefaction-related incidents table.

<sup>14</sup> In fact, one of the theories behind the loss of the *Derbyshire* in 1980, which is one of the most significant bulk carrier losses in recent history, emphasised that aggressive cargo shift resulting from liquefaction could be a possibility behind the rapid loss of stability, even though it is believed that cracks and fatigue fractures found on the hull were deemed the most significant cause for her loss. See The Honorable Mr Justice Colman. 'Report of the Re-Opened Investigation into the Loss of the MV *Derbyshire*'. 26th July 2000.

major risks jeopardising safety of lives at sea in the bulk industry.<sup>15</sup> Below is a brief description of some of the recent casualties that were caused by liquefaction:

- In July 2009, *Asian Forest* loaded with 13,600 metric tons of iron ore fines in bulk experienced bad weather and later listed 27 degrees to port side. Fortunately, she was abandoned by all her crew before her inevitable sinking.<sup>16</sup>
- In October 2010, *Jian Fu Star* loaded with 43,800 metric tons of nickel ore encountered heavy seas and developed a 45 degrees list to port side within 20 minutes leading to her capsizing, with the loss of one crewmember and 12 missing.<sup>17</sup>
- In November 2010, *Nasco Diamond* loaded with 55,150 metric tons of nickel ore experienced rough weather and severe tilt until contact was lost with her. With 25 persons on board, only three were rescued after two days of her loss, and further two dead bodies were later found. The last message received from the vessel was that the cargo in three out of five holds appeared to have liquefied.<sup>18</sup>
- In December 2010, *Hong Wei* loaded with 48,900 metric tons of nickel ore had experienced strong winds and a heavy list, more than 20 degrees starboard. 10 crewmembers went missing and presumed dead. The investigation report concluded that cargo liquefaction and shift in bad weather compromised the stability of the vessel leading to her loss.<sup>19</sup>
- In December 2011, *Vinalines Queen* went missing with 54,400 metric tons of nickel ore on board. There was only one survivor, out of 23 crewmembers, who was found about 350 kilometres away from the vessel's last known position. The survivor reported that the vessel

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<sup>15</sup> In January 2012, nickel ore trade amounted up to only 6% of the bulk trade but accounted for 80% of the fatalities. See: Mario Vittone. 'Bulk Trade-Off: Blood for Money in Indonesia' (Available on: <http://gcaptain.com/bulk-trade-off-indonesia/>). Accessed April 2015.

<sup>16</sup> Abstract of the *Asian Forest* incident report from the IMO's causality investigation database is reproduced in Annex 2.

<sup>17</sup> Report: M/V "Jian Fu Star" R- 011-11- DIAM by Panama Maritime Authority, Marine Accident Investigation Department, 27 February 2011.

<sup>18</sup> Report: M/V "NASCO DIAMOND" R-020-2011/DIAM by Panama Maritime Authority, Marine Accident Investigation Department, 9 November 2010.

<sup>19</sup> Report: M/V "HONG WEI" R- 007-2011- DIAM by Panama Maritime Authority, Marine Accident Investigation Department, 18 December 2010.

encountered strong winds and rough seas, then strongly leaned and sank. The vessel has never been found and the remaining crewmen are feared dead.<sup>20</sup>

The above causalities highlighted the risk of nickel ore liquefaction, which was then classed as Group C cargo, not liable to liquefy. These incidents prompted further examinations into the properties of nickel ore to be carried out, by IMO-appointed bodies, and the cargo was subsequently declared as Group A cargo.<sup>21</sup> Most recently, some liquefaction incidents were concerned with the carriage of bauxite, which is currently listed as Group C cargo.<sup>22</sup> In January 2015, *the Bulk Jupiter*, along with 18 crewmembers, was lost due to the liquefaction of bauxite that was carried onboard. The investigation report outlined that liquefaction of bauxite was the cause of this incident, and recommended that further studies into the characteristics of bauxite to be carried out, in view of amending the IMSBC Code in the near future.<sup>23</sup> Notably, however, the aforesaid incidents have occurred following the introduction of the IMSBC Code in 2008, some of which had even occurred after its mandatory application in January 2011. Although compliance with the Code's provisions is expected to minimise the risk of liquefaction and other dangers associated with solid bulk materials, the most severe incidents had actually resulted from the liquefaction of materials initially categorised as non-liable to liquefy. It is therefore unsurprising to find the IMSBC Code open for criticism and render its effectiveness very questionable, and this has resulted in two groups; one blames the parties for improper application of the Code and the other casts doubts about certain flaws found in it.

### 1.3 Practical issues

There are several practical issues involved in the carriage of solid bulk materials that hinder the compliance with the IMSBC Code provisions. The use of unreliable laboratories in the countries of shipment, where the tests to determine the moisture content level are carried out, has resulted in the spread of forged shipping documents which inaccurately describe the cargo.<sup>24</sup> In addition, it has been reported that testing of the cargo in some countries are carried out by the mines' owners themselves who may not have adequate facilities or use their own unsolicited methods of testing which may not

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<sup>20</sup> Abstract of the *Vinalines Queen* casualty investigation report is reproduced in Annex 3.

<sup>21</sup> DSC 17/17 5 October 2012. (IMO Docs). This issue is further discussed in 2.7.1 Miss-categorisation of cargoes.

<sup>22</sup> See 2.7.1(a) the Code's description of bauxite in Chapter 2, for full analysis of the losses resulting from bauxite liquefaction. The implications of bauxite liquefaction on the parties' duties are considered Chapters 2, 3 and 4.

<sup>23</sup> Report: "M.V Bulk Jupiter" - Official Number 8001956 - by The Commonwealth of the Bahamas, 18th August 2015. Also, see Circular CCC.1/Circ.2.; and The IMO, 'IMO warns on bauxite liquefaction dangers' (available on: <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/38-bauxite-CCC.aspx>) [Accessed December 2015].

<sup>24</sup> The Standard Club. 'Liquefaction of Mineral Ores and Minerals Concentrates' (available on: <http://www.standard-club.com/media/23989/StandardCargoLiquefactionFeb2011.pdf>) [Accessed March 2016] (Loss Prevention issue - April 2015).

necessarily deliver accurate results, or be in compliance with IMSBC Code's approved test methods.<sup>25</sup> Moreover, the high demand behind these goods meant loading operations may be carried out during monsoon seasons, exposing piles of cargoes at the terminal to heavy rain that in turn increases the moisture content and enhances the chance of liquefaction.<sup>26</sup> Although the unwillingness of shippers to allow independent surveyors, grant access to stockpiles, accurately describe the cargo in the shipping documents or provide reliable test results of the cargo's moisture content could all assist in establishing their liability when the danger materialises,<sup>27</sup> such practices significantly endanger the safety of life and property at sea. In legal terms, the master may be entitled to refuse loading the cargo,<sup>28</sup> but, commercially, he is often exposed to extreme pressure to accept the risk and sail with such cargo onboard, and thus putting the safety of his ship and crew at great risk.<sup>29</sup>

#### 1.4 Responsive measures

In light of the liquefaction issues and all the casualties reported therefrom, several measures were adopted within the shipping industry in order to minimise, or tackle, the dangers associated with its carriage.<sup>30</sup> This section addresses how the market has responded to the issue of solid bulk liquefaction.

#### Regulatory

The International Maritime Organisation (IMO) introduced the mandatory International Maritime Solid Bulk Cargo (IMSBC) Code in January 2011. It provides information about the dangers associated with the shipment of solid bulk cargoes, and outlines the procedures to be adopted by the relevant parties in order to facilitate the safe carriage of such goods. The Code outlines the obligations required from shippers to provide all the necessary documents, including test certificates, to the master prior to shipment. It also sets out loading and carriage precautions to be followed by the master when handling and stowing the cargo. Further, the Code details several test procedures for laboratories and surveyors, which are laid out in Appendix 2 of the Code, to determine the safe

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<sup>25</sup> The Standard Club. 'Bulk Cargo Liquefaction (Iron Ore Fines and Nickel Ore)' (available on: <http://www.standard-club.com/media/23989/StandardCargoLiquefactionFeb2011.pdf>) [Accessed March 2016] (Standard Cargo issue - February 2011).

<sup>26</sup> Ibid, fn.24.

<sup>27</sup> Shipper's duties and liabilities are outlined in Chapter 3.

<sup>28</sup> See Chapter 4 (4.5 Can the carrier refuse to carry dangerous cargo?)

<sup>29</sup> The effect of such acceptance on the question of liability is addressed in Chapter 4 (4.5.6 The waiver argument: consent to load dangerous cargo).

<sup>30</sup> For an overview of these measures, see: Fkhir, M. A., 'Liquefaction: shipping industry response' (2017). Vol. 17. Shipping & Trade Law 4-5.

moisture content limits of any given solid bulk cargo to be loaded. Finally, the Code provides a non-exhaustive list of schedules for various solid bulk materials that detail specific precautions to be put in place in order to ensure safe carriage of such goods.

Nevertheless, as outlined earlier, there are certain deficiencies discovered in the IMSBC Code, such as: the miss-categorisation of cargoes and unreliable test methods delivering inaccurate results. Therefore, the shipping market opted to take more positive actions to minimise the risk of liquefaction and to avoid the occurrence of further causalities, which are outlined below.

### Insurance

Protection and Indemnity Clubs are at the forefront tackling the issues of solid bulk liquefaction, perhaps unsurprisingly. Numerous warnings have been circulated to members putting them on notice of all dangers connected with the carriage of solid bulk materials. The Clubs have strongly required their members to notify their insurer as soon as a fixture for the carriage solid bulk materials is envisaged, and strictly demanded the use of qualified surveyors to conduct safety tests of the cargo in question. Most Clubs have warned their members that failure to comply with such requirements could jeopardise the insurance cover.<sup>31</sup>

### Technical

Section 7 of the IMSBC Code allows shipment of any solid bulk cargo regardless of its moisture content level, including such cargoes that are liable to liquefy, onboard specially constructed or fitted cargo ships. Such constructed vessels must have '*permanent structural boundaries, so arranged as to confine any shift of cargo to an acceptable limit*',<sup>32</sup> and the fitted vessels must have '*portable divisions to confine any shift of cargo to an acceptable limit*'.<sup>33</sup> Consequently, several classification societies have introduced rigorous structural design modifications to meet the standards specified in section 7 of the Code.<sup>34</sup> Such can be achieved by adding some longitudinal bulkheads in the holds, so any liquefaction will be confined within these boundaries without compromising the stability of the vessel.

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<sup>31</sup> For instance: see Gard SA. 'Cargo liquefaction' (available on: [http://www.gard.no/web/publications/content?p\\_document\\_id=20651747](http://www.gard.no/web/publications/content?p_document_id=20651747)) [Accessed March 2015]

<sup>32</sup> Section 7.3.2.2.

<sup>33</sup> Section 7.3.2.3.

<sup>34</sup> ClassNK is reported to have registered the world's first specialised nickel ore carrier on, see: ClassNK. 'ClassNK Welcomes World's First Specialized Nickel Ore Carrier to Register' (Available on <http://www.allaboutshipping.co.uk/2012/10/23/classnk-welcomes-worlds-first-specialized-nickel-ore-carrier-to-register/>) Accessed October 2013.

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## Contractual

The Baltic and International Maritime Council (BIMCO) proposed two clauses for incorporation in charterparties which are designed to protect the shipowner in the event he receives an order, from the charterer, to carry solid bulk materials.<sup>35</sup> The first one is, the lengthy-titled, BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties, and the second is found in the recent revamp made to the NYPE 2015 form.<sup>36</sup> Both versions are strictly in owners' interests putting all the risks arising out of carrying solid bulk cargoes, and the expenses in complying with the IMSBC Code's provisions, for charterer's account.

Due to the mischief discovered in the IMSBC Code and the practical issues, outlined earlier, addressing the liabilities in well-drafted clauses in the contract is a paramount. However, owing to the current market conditions, it is hardly predictable that charterers would readily accept such clauses in the first place. Although a number of liquefaction incidents were reported to have occurred due to the use of forged shipping documents, falsifying the cargo's characteristics, in many other cases charterers had strictly complied with the provisions of the IMSBC Code, yet incidents happened.<sup>37</sup> Arguably, charterers may argue that since they had complied with the Code to ensure the safety of their cargo, they should not be held liable if the cargo later liquefies by reason of it being miscategorised by the Code, whereby such misclassification would fail to alert the parties about certain precautions that must be put in place prior to the shipment of the cargo in question. Despite of this logical argument, it is outlined in Chapter 4 that English common law holds the shipper strictly liable not to load dangerous cargo.<sup>38</sup> He will be found liable if his dangerous cargo damages the ship, provided no other cause has effectively contributed to such damage,<sup>39</sup> and the carrier was unaware of such dangerous character.<sup>40</sup> Accordingly, subject to the terms of the charterparty,<sup>41</sup> the charterer may well be in the same shoes as the shipper, and he may consequently be found liable if his cargo liquefies and damages the ship, notwithstanding his compliance with the Code.

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<sup>35</sup> The effect of these clauses are analysed in Chapter 4 (4.5.5 Solid bulk specific clauses).

<sup>36</sup> Full text of these clauses is reproduced in Annexes [4] and [5].

<sup>37</sup> These incidents are further discussed in Chapter 2. (2.7.3 Improper implementation by port authorities)

<sup>38</sup> However, shipment of dangerous cargo is not prohibited. The fact that the cargo loaded was dangerous would not automatically render the shipper liable, whereby the carrier's knowledge or actions would also be relevant. Discussed further in Chapter 4.

<sup>39</sup> Discussed in 4.7 Causation of the loss.

<sup>40</sup> Discussed in 4.4 Knowledge of the carrier.

<sup>41</sup> Terms which may entitle the charterer to load dangerous cargo are discussed in Chapter 4 (4.5.1-4.5.5).

## 1.5 Potential legal disputes

This section briefly deals with the legal disputes that could arise between charterers and carriers following the liquefaction of the solid bulk cargo carried onboard the ship. When the charterer's cargo liquefies and causes damages to the ship and other cargoes onboard, owners would argue that the damage was caused by dangerous cargo, and thus the charterer is liable for shipping dangerous goods without the carrier's knowledge.<sup>42</sup> In contrast, the charterer would argue that the carrier has failed to care for the cargo and that his failure caused the cargo to liquefy.<sup>43</sup> These heads of claims, duty of care and shipment of dangerous cargo, are dealt with in Chapters 3 and 4 respectively.

Alternatively, disputes often arise at the load port where the safety of the cargo, concerning its actual moisture content, becomes questionable. The delay ensued at the load port may raise demurrage or off-hire claims, as well as claims to recover the expenses incurred by either party to verify the safety of the cargo. Such delay is often caused by reason of the owners' refusal to load the cargo until further tests are carried out prior to his acceptance of the goods. The delay dispute concerns claims by time charterers who argue that the vessel was off-hire, or voyage charterers who claim that laytime or demurrage not to count, throughout the delay so caused by owners' refusal to load. Such disputes are likely to occur in less dramatic liquefaction scenarios, either prior to the liquefaction of the cargo at the time of loading, or where it was fortunate for the vessel to remain stable during her voyage and deviate to deal with the liquefied cargo onboard. The wording of the relevant charterparty clauses, which cover the events or periods that may entitle time charterers to cease payment of hire or give voyage charterers more time to load, is of great significance in such disputes.<sup>44</sup> Whereby, the mere occurrence of the particular event listed in the clause will be sufficient to trigger its operation.<sup>45</sup> However, the charterer must also establish that time has actually been lost as a result of that occurrence.<sup>46</sup>

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<sup>42</sup> The arguments for and against this head of claim is fully considered in Chapter 4.

<sup>43</sup> This argument is fully discussed in Chapter 3 which deals with the liabilities of the carrier to care for the cargo (3.4).

<sup>44</sup> A commentary on the operation of some standard off-hire, laytime and demurrage clauses in the context of shipment of solid bulk cargoes is provided in Annex [9] of this thesis.

<sup>45</sup> *The Ioanna* [1985] 2 Lloyd's Rep. 164. However, if the event occurred due to charterers' fault, then the clause is not triggered. Mustill J. held in *The Rijn* [1981] 2 Lloyd's 267 that: "only those causes qualify for consideration which are fortuitous, and are not the natural result of the charterers' orders ... I am bound to say that I find it hard to visualise the accumulation of marine growth during the contract service as a 'defect'. But even if it were, the defect arose as a natural consequence of the way in which charterers chose to employ the ship."

As for voyage charters, interpretation of the laytime and demurrage clauses would need to be construed to determine whether such delay should count or not.

<sup>46</sup> To determine whether there has been a loss of time, it was established in *The Berge Sund* [1993] 52 Lloyd's Rep. 453 that it is the service immediately required of the vessel by charterers which is relevant, and whether she is capable of

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## 1.6 Objectives of the thesis

The issue of solid bulk liquefaction has been heavily dealt with from a technical perspective. Most works consider the mechanism of liquefaction and sets out experimental tests on various particles of solid bulk nature, to determine the critical moisture content limit at which a cargo can start to liquefy. This is perhaps the main reason why all the liquefaction cases, since 2010 to date, have not made it to litigation as they would involve huge costs on experts and analysis of technical materials, and therefore parties tend to arbitrate or settle behind closed doors. The shipping industry, at large, has also been mainly considering technical solutions to the issue of cargo liquefaction by advancing structural alterations to vessels' hulls, and conducting further tests on solid bulk materials to identify and better understand their vice in order to enable safe shipment.

On the other hand, from a legal point of view, the issue of solid bulk liquefaction remains unaddressed in a substantive work that solely focuses on the legal issues surrounding this problem. Although there is a vast library of written materials concerning the carriage of dangerous goods in general, more cautionary approach needs to apply on the issue of solid bulk liquefaction because the state of the parties' knowledge about the dangerous character of solid bulk materials is very critical in liquefaction scenarios. Whereby, both the shipper's and carrier's knowledge about such danger is likely to be influenced by the applicable regulations, in particular the IMSBC Code. As aforementioned, the Code has in some cases misinformed all the parties about the true characteristics of some solid bulk materials. Under English law, the shipper is strictly liable regardless of his knowledge, but the carrier's, or his master's, knowledge as to the 'liquefiability' of the cargo to be shipped is relevant and may evade the shipper's from liability, provided the master was not misinformed about the characteristics of the cargo by the shipper himself. Therefore, this thesis tests the application of the rules on shipment of dangerous cargo on solid bulk liquefaction scenarios. As outlined earlier, most parties to such incidents settle behind closed doors for fear of the substantial costs that could be incurred if these cases go to court, and thus we lack the opportunity to check how the uncertainties surrounding the IMSBC Code could be tested in light of English law principles.

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performing that next operation. In this case, the vessel failed pre-load inspection and was therefore required to conduct hold cleaning in order to comply with charterer's order to load her next cargo. Charterers placed the vessel off-hire throughout the cleaning exercise, but Lord Justice Staughton disagreed. He stated that: *"What were the Charterer orders? They were not to load the cargo; as I have said, that was the very last thing the charterers would have ordered. The orders were, in part expressly and at all relevant times by implication, to carry out further cleaning. That was the service required and the vessel was fully fit to carry it out."* (p.461). See: Weale, J., 'Loss of time – and a lost opportunity' (2014), 7 (Aug.), *Lloyd's Maritime and Commercial Law Quarterly* 300-306.

Furthermore, solid bulk liquefaction remains a great threat to the lives of many seafarers and the environment. There is an extreme pressure being exercised on shipowners to ship liquefiable solid bulk cargoes regardless of any safety concerns. This thesis provides a conclusive document clarifying the legal obligations, rights and liabilities of the parties involved in the carriage of solid bulk materials.

### 1.7 Methodology of the thesis

In order to meet the objectives, listed above, this thesis adopted the following approach:

1. *Assessment of the IMSBC Code:* information in connection with the faults reported about the IMSBC Code has been gathered from a broad range of sources and varied literature, including: reviewing experimental papers on the test methods, technical articles published by recognised institutions, numerous circulations by shipping-related organisations and various news reports by recognised shipping agencies on the issue of solid bulk liquefaction, and liquefaction-related casualties investigation reports. Further, interviews were conducted with some personnel involved with the development of the IMSBC Code, and two weeks internship at the International Maritime Organisation was undertaken allowing access to consolidated information on all safety meeting documents connected with the IMSBC Code. The information obtained from these sources has helped conduct a thorough assessment of the IMSBC Code's effectiveness and assisted to form a better understanding to identify the reasons why liquefaction incidents are still occurring. This assessment is presented in Chapter 2.
2. *Legal implications of the IMSBC Code:* since the aim of this thesis is to test the application of well-established English legal principles on liquefaction, this thesis relied on literature and other conventional sources that set out the law in its present form. Although some of the applicable legal principles identified in this research invite further examinations, this thesis restricted its approach only to address the operation of these rules on hypothetical liquefaction scenarios. Accordingly, conventional practitioners' books, journal articles, legal textbooks, case law and several interviews with solicitors engaged with liquefaction incidents were the primary sources for delivering this objective. This check test of the application of the relevant legal rules on solid bulk liquefaction is presented in Chapters 3 and 4.

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## **Chapter Two:**

# **The International Regulatory Framework**

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### 2.1 Introduction

The dangers associated with the carriage of solid bulk cargoes necessitated the need to have regulatory interference that governs their carriage to ensure safe shipment. Most of these regulations derive from the International Convention for the Safety of Life at Sea (SOLAS) 1974 which itself contains some chapters that specifically deal with solid bulk cargoes.<sup>1</sup> Various codes have also been published by the International Maritime Organisation (IMO) to facilitate safe shipment of solid bulk materials, starting from the Code of Safe Practice for Solid Bulk Cargoes (BC Code) in 1965,<sup>2</sup> which was later replaced by the International Maritime Solid Bulk Cargoes (IMSBC) Code that was

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<sup>1</sup> Such as: Part A and B of Chapter VI that frame the mandatory provisions for the carriage of solid bulk cargoes, and Part A-1 of Chapter VII which regulate the carriage of dangerous goods in solid form in bulk.

<sup>2</sup> Resolution MSC.193(79).

adopted in 2008.<sup>3</sup> Most notably, however, is that the IMSBC Code is a mandatory instrument,<sup>4</sup> instead of the recommendatory nature of its predecessor the BC Code. This highlights the heightened dangers of such cargoes as they required a more constructive approach in handling their carriage, though there remains the question of whether the newly adopted mandatory application have made any difference in minimising the number of casualties and de-escalating the risks therefrom. This chapter attempts to answer this question by, firstly, describing the requirements under the relevant regulations, with particular analysis of the IMSBC Code, and, secondly, assessing the effectiveness of the IMSBC Code in enhancing the safety of carriage of solid bulk materials by sea.

## 2.2 The International Convention for the Safety of Life at Sea (SOLAS) 1974

SOLAS 1974, as amended,<sup>5</sup> is regarded as the most important international treaty concerning the safety of merchant ships.<sup>6</sup> The main objective of this Convention is to advance technical developments in the shipping industry by maintaining specified safety standards for ships' construction, equipment and operations.<sup>7</sup> It achieves this purpose through the periodic inspections carried out by Flag States and Port States Control which police the compliance of their registered vessels, and foreign vessels within their jurisdiction, with the requirements of SOLAS.<sup>8</sup> One of the main advancement in the 1974 Convention was the adoption of the tacit acceptance procedure which means that any amendments to SOLAS shall enter into force on a specified date, unless an agreed number of Contracting Governments object to such amendments before that given date.<sup>9</sup> This is significantly important since, under the old rule, two thirds of the Contracting Governments had to accept an amendment in order to be given effect. This old system had proved to be a very slow procedure in practice which could not allow amendments to be enforced quickly, whereby the essence of SOLAS is to keep pace with the fast-modernising shipping industry which meant that new necessary amendments must be put in place within a reasonable time.

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<sup>3</sup> Resolution MSC.268(85).

<sup>4</sup> The IMSBC Code entered into force on 1 January 2011, from which date it was made mandatory under SOLAS provisions. The 2013 edition incorporates amendment 01-11, by resolution MSC.318(89), and amendment 02-13, by resolution MSC.354(92). Most recently, the Code was amended by resolution MSC.393(95) incorporating amendments 03-15, anticipating its envisaged official entry into force on 1 January 2017.

<sup>5</sup> The SOLAS Convention has been amended many times to keep it up to date, so it is referred to as SOLAS 1974, as amended.

<sup>6</sup> The IMO, '*International Convention for the Safety of Life at Sea (SOLAS), 1974*' (available on: [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-\(SOLAS\)-1974.aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Safety-of-Life-at-Sea-(SOLAS)-1974.aspx)) [Accessed November 2015]

<sup>7</sup> See Ch.II and Ch.III of SOLAS.

<sup>8</sup> See Art.I.

<sup>9</sup> The procedure assumes the parties are in favour of the amendment, unless they take active steps to object it. See: The IMO. '*Focus on IMO – SOLAS: the International Convention for the Safety of Life at Sea, 1974*' (available on: <https://www.imo.org/en/OurWork/Safety/Regulations/Documents/SOLAS98final.pdf>) [Accessed November 2015]

SOLAS has a total of 17 chapters that provide various safety measures concerning the ship itself, those onboard, the carried cargoes and general maritime safety procedures. Below is a list of the chapters that are relevant to the carriage of solid bulk cargoes.

### 2.2.1 Chapter V – Safety of Navigation

This chapter focuses on the hazards of sea navigation in relation to voyage routing plans, vessels' traffic, weather forecast, ships' manning and competency of all those who are put to sea. It places obligations and responsibilities on governments, companies<sup>10</sup> and mariners to guard against potential dangers to navigation,<sup>11</sup> make proper use of navigational systems,<sup>12</sup> and effectively communicate, and answer for, distress signals and danger messages.<sup>13</sup> Unlike all other chapters under SOLAS, the importance of safe navigation rendered this chapter applicable to all ships on all voyages,<sup>14</sup> whereas other chapters apply to certain classes of commercial shipping.<sup>15</sup>

#### Regulation 43-1: master's sole discretion to make decisions concerning safety

Although nothing in this chapter deals with cargo-handling or measures for safe carriage of any given cargo, Regulation 34-1 provides that the master must have the sole discretion in making any necessary decisions that concern the safety of life at sea and the marine environment. It states that:

*"The owner, the charterer, the company operating the ship ... or any other person shall not prevent or restrict the master of the ship from taking or executing any decision which, in the master's professional judgment, is necessary for safety of life at sea and protection of the marine environment."*

In relation to the carriage of solid bulk cargoes, one can question whether this regulation grants the master the discretion to suspend loading operations and/or refuse the cargo if he suspects it endangers safety of the crew and the marine environment. In contrast, it may be argued that this regulation is exclusive for dangers to navigation only,<sup>16</sup> whereas cargo-related dangers are governed

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<sup>10</sup> Company is defined in SOLAS Chapter IX/1 (ISM Code) as: "the owners of the ship or any other organisation or person such as the manager, or the bareboat charterer, who has assumed responsibility for operation of the ship and who on assuming such responsibility has agreed to take over all the duties and responsibilities imposed by the International Safety Management Code."

<sup>11</sup> Regulations 13-23.

<sup>12</sup> Regulations 24-30.

<sup>13</sup> Regulations 31-33.

<sup>14</sup> Including yachts and private craft, but with the exception of warships used for non-commercial services

<sup>15</sup> For example: Chapters VI and II of SOLAS only apply to cargo ships, and SOLAS Ch.VIII only applies to nuclear-powered ships.

<sup>16</sup> For instance: when the vessel encounters dangerous ice or tropical storms, the master is then required to report such dangers to nearby vessels and coastal authorities (SOLAS V/31).

under other regulations, such as Article IV Rule 6 of the Hague-Visby Rules. The phrase *'taking or executing any decision ... for the safety of life at sea'* does entail a broader meaning that could support the former view, but since Chapter V is mainly concerned with safe navigation then Regulation 34-1 tends only to be construed in this context. Regulation 34, from which Regulation 34-1 is followed,<sup>17</sup> requires the master to plan a safe voyage and ensure that such a plan is drawn up,<sup>18</sup> and it details some factors to be considered including anticipating all known navigational hazards and avoiding any actions that could damage the environment. As such, Regulation 34-1 empowers the master with the sole discretion to plan his voyage without interference from owners or charterers. However, it must be noted that masters are often placed under an obligation to follow charterers' orders which may include routing plans.<sup>19</sup> It was confirmed in *The Hill Harmony* that *'subject to safety considerations and the specific terms of the charter, the charterers may not only order a vessel to sail from A to B but may also direct the route to be followed between the two.'*<sup>20</sup> Nonetheless, the master remains responsible for the safety of his vessel and crew, and charterers cannot controvert his discretion by giving orders that expose the vessel to risks which the owners have not agreed to take.<sup>21</sup>

As a result, it is hard to implement that Regulation 34-1 could solely grant the master the right to refuse a dangerously liquefiable cargo to be shipped, whereby its application may be confined to matters involving the voyage plan and ensuring a safe route is followed during the voyage rather than dealing with the character of the cargo being shipped.<sup>22</sup> However, one scenario could be envisaged in which Regulation 34-1 could operate in favour of the master when loading solid bulk materials that are susceptible to liquefy, for instance: if the moisture content of the solid bulk cargo loaded is extremely high, yet within the safe limits but the forecast contemplates heavy weather which could expose the vessel to hard-rolling, then such factors could ultimately cause liquefaction of the cargo. Arguably, in such circumstances, the master can rely on Regulation 34-1 to refuse to sail and wait for further instructions from the charterer and/or propose an alternative safe

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<sup>17</sup> See MSC 78/26/Add.1

<sup>18</sup> The voyage must be planned in accordance with the IMO Guidelines for Voyage Planning, Resolution A.893(21), and the plan may be examined by Port State Control inspections.

<sup>19</sup> The employment clause is further discussed in Chapter 4 (4.5.3).

<sup>20</sup> [2001] 1 Lloyd's Rep. 147 at p.153. In this case, during a heavy-weather voyage the charterer ordered the vessel to sail on a northern route but the master insisted on proceeding with southern route, which resulted in delay and more bunker consumption, for safety reasons. The House of Lords found the master's actions unjustifiable as there was evidence that the northerly route was the usual course used by 360 vessels over a three month period.

<sup>21</sup> Ibid, p.160 (Lord Hobhouse).

<sup>22</sup> There could be other terms in the relevant charter, and/or applicable regulations, which could entitle a master to refuse loading a cargo. Such provisions are addressed discussed in Chapter 4 (4.5 Can the carrier refuse to carry dangerous cargo?).

voyage plan. In Chapter 4,<sup>23</sup> some English and foreign legal authorities are discussed in which the Courts empowered the master with the discretion to alter his voyage course when faced with liquefaction onboard. However, these authorities did not rely on Regulation 34-1 to find such a discretion, but it rather referred to national law principles concerning the safety of life at sea to establish such a right.<sup>24</sup> Another example in which Regulation 34-1 may operate in favour of the master is when the solid bulk cargo liquefies during the voyage. In this case, the master may no longer be able to safely navigate the vessel and will have to deviate to a port of refuge, and thus Regulation 34-1 will entitle the master to change his course. This right is also supported under common law and other legal regimes which justify deviation to save life and/or avoid danger to the ship or cargo.<sup>25</sup> In *The Erwin Schroder*,<sup>26</sup> Pottier J. justified the deviation of the vessel when its cargo of copper concentrate liquefied during her voyage as he found that the vessel's fate would have ended at the bottom of the ocean if she carried her voyage to its original destination.<sup>27</sup>

Most recently, the Chinese Supreme Court confirmed in December 2015 that a vessel's deviation to check the safety of her cargo and carry out sun-drying operations following the liquefaction of a cargo of nickel ore was justifiable.<sup>28</sup> In this case,<sup>29</sup> although the owners' survey revealed that the nickel ore had excessive moisture content, in contrast with the shipper's documents, loading operations were not stopped and the vessel was forced to sail since the local agent issued the bill of lading. Owners were concerned about liquefaction during the voyage and decided to deviate in order to carry out sun-drying operations. However, the owners were unable to confirm whether the moisture content of the cargo was decreased to fall within safe limits, but eventually the vessel sailed following further pressure from the charterers. Cargo owners at the discharging port filled lawsuit against the owners for the delay occurred alleging loss of the market due to unreasonable delay. Whilst the first instance court justified the deviation, the Court of Appeal found it unreasonable

<sup>23</sup> 4.2.2(a) Legal authorities where liquefiable solid bulk materials were found dangerous.

<sup>24</sup> *Micada Compania Naviera S.A. v Texim* [1968] 2 Lloyd's Rep. 57, *The Erwin Schroder* [1969] 1 Lloyd's Rep. 370 (Canadian Case) and No.796 Civil Order of the Chinese Supreme Court.

<sup>25</sup> See *Scaramanga v Stamp* (1880) 5 CPD 295 and *Phelps, James & Co v Hill* [1891] 1 QB 605. Also, see Art.IV r.4 of the Hague-Visby Rules.

<sup>26</sup> [1969] 1 Lloyd's Rep. 370. (Canadian Case). This case is further discussed in Chapter 4 (4.2.2(a)).

<sup>27</sup> *Ibid*, p.372. However, the judgment does not refer to Regulation 34-1 but to national law.

<sup>28</sup> Japan P&I Club. 'No.796 Civil Order of Chinese Supreme Court Confirms that Vessel's deviation due to liquefaction of nickel ore was justifiable' (available on: [https://www.piclub.or.jp/index.php?action=pages\\_view\\_main&active\\_action=journal\\_view\\_main\\_detail&post\\_id=2704&comment\\_flag=1&block\\_id=372#\\_372](https://www.piclub.or.jp/index.php?action=pages_view_main&active_action=journal_view_main_detail&post_id=2704&comment_flag=1&block_id=372#_372)) Accessed January 2016

<sup>29</sup> Civil Order no.796 (*ibid*, fn.26). It should be noted that China is not a party to the Hague, Hague-Visby, Hamburg or Rotterdam Rules, but carriers' responsibilities under the Chinese Maritime Code 1992 adopt relatively similar provisions to the Hague-Visby Rules.

under the carriage contract.<sup>30</sup> Nevertheless, the Supreme Court overruled the Appeal judgment in favour of the owners and found that; first, the master was right to consider the cargo was unsafe, second, the owners shall not be deemed to have accepted the cargo as suitable for safe carriage only because of the issuance of the bill of lading and, third, the deviation to sun-dry the cargo was justifiable. This case serves as an example of the extent of pressure exercised by charterers on carriers to transport solid bulk cargoes regardless of any safety concerns.

Although Regulation 34-1 was not mentioned in neither of these two decisions, the regulation certainly empowers the master to deviate the voyage when he deems such an action so necessary for the safety of his crew and vessel at sea, in addition to the well-established rules of deviation. Theoretically, the master in the Chinese case could have relied on Regulation 34-1 to refuse to sail since his examination of the cargo revealed high moisture content despite of the issuance of the bill of lading by the local agent.<sup>31</sup>

### 2.2.2 Chapter VI – Carriage of Cargoes

This chapter consists of two parts, Part A General provisions and Part B Special provisions for solid bulk cargoes.<sup>32</sup> Part A applies to cargoes with particular hazards to ships or persons onboard that may require special precautions in their carriage.<sup>33</sup> It spells out the requirements for the carriage of solid bulk cargoes, other than grain, and re-emphasizes that their carriage shall be in compliance with the IMSBC Code.<sup>34</sup> Regulation 2 requires the shipper to provide appropriate information, in writing and by appropriate shipping documents,<sup>35</sup> about the cargo to the master sufficiently in advance of loading operations in order to put in place any necessary precautions for proper stowage and safe carriage. For solid bulk materials, the information required from the shipper are listed in section 4 of

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<sup>30</sup> Though the Appeal judgment supported the first instance court's decision that cargo owners could not demonstrate their actual financial losses, which they claimed to be more than 2 millions USD.

<sup>31</sup> The legal position of the master's right to refuse loading is considered in Chapter 4.

<sup>32</sup> These parts of Chapter VI deal with the carriage of solid bulk cargoes and are reproduced in full in the IMSBC Code, and incorporate amendments that entered into force on 1 January 2011. (section 1.6 of the IMSBC Code)

<sup>33</sup> Except liquids in bulk, gases in bulk and those aspects of carriage covered by other chapters (Ch.VI Part A Reg. 1)

<sup>34</sup> SOLAS Ch.VI Part A Reg. 1-2.

<sup>35</sup> See Annex [7] Declaration Form for Cargo Information for Solid Bulk Cargoes. Also, see section 4.2.3 of the IMSBC Code.

the IMSBC Code,<sup>36</sup> which must include, amongst other details, the bulk cargo shipping name (BCSN), the cargo group (A, B or C), the moisture content certificate and the likelihood of shifting.<sup>37</sup>

Part B, on the other hand, as its title suggests is specifically designed for the carriage of solid bulk cargoes. It mainly focuses on cargo operations for loading, unloading and stowage of the cargo, and it aims to ensure that the master and the terminal representative<sup>38</sup> do possess all the required information prior to the start of any such operations. Such information include the ship's stability data, the distribution of cargo for loading operations, ballast rates and maximum holds' capacities.<sup>39</sup> In addition, both the master and the terminal representative must agree a plan for loading or unloading solid bulk materials, before the commencement of such operations, which must detail the permissible forces on the ship and sequence, quantity and speed of the operations in conjunction with the ship's ballasting and deballasting capabilities.<sup>40</sup> The master and the terminal representative must adhere to the plan, which must be lodged with any amendments to the Port State authority, and any departure thereof must be promptly corrected.<sup>41</sup>

### 2.2.3 Chapter VII – Carriage of Dangerous Goods

The relevant part of this chapter for the purpose of solid bulk cargoes is Part A-1 which governs the carriage of *dangerous goods in solid form in bulk*.<sup>42</sup> This type of goods is defined as:

*“[A]ny material, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material, generally uniform in composition, which is covered by the IMDG Code and is loaded directly into the cargo spaces of a ship without any intermediate form of containment”*<sup>43</sup>

As it stands out, the only difference from general solid bulk cargoes<sup>44</sup> is that these types of goods have been recognised as dangerous by the IMO and are covered under the IMDG Code, for which

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<sup>36</sup> SOLAS Ch.VI Part A Reg.2.2.2.

<sup>37</sup> Section 4.2 of the IMSBC Code. With regards to BCSN, each solid bulk cargo listed in the Code is assigned a BCSN which must be used in the shipping documents when identifying the cargo. For cargoes not listed in the Code, a special form must be used, which can be found in section 1.3.3 of the IMSBC Code (refer to MSC.1/Circ.1453).

<sup>38</sup> Terminal representative is defined in Part B Reg.7.1 as a person appointed by the terminal authority where the ship is loading or unloading the cargo and who has responsibility for operations carried out by that terminal for the particular ship.

<sup>39</sup> SOLAS Part B Regs. 6 and 7.2.

<sup>40</sup> Part B Reg.7.3. Such a plan should be in line with the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code). (discussed below).

<sup>41</sup> Part B Regs.7.3-7.6.

<sup>42</sup> This part is also reproduced in the IMSBC Code with extracts that incorporate amendments that entered into force on 1 January 2011.

<sup>43</sup> SOLAS Ch.VII Part A-1 Reg.7.

<sup>44</sup> Which are defined in SOLAS Ch.VI Part A Reg.1-1.2.

both the IMDG and IMSBC Codes' provisions must be complied with. IMDG-listed dangerous cargoes are assigned with a four-digit United Nations Number and a shipping name,<sup>45</sup> i.e. AMMONIUM NITRATE UN 1942. The majority of the dangerously-recognised, IMDG-listed, solid bulk cargoes correspond with most of Group B cargoes under the IMSBC Code, which possess a chemical hazard that could give rise to dangerous situations on ships.<sup>46</sup> The danger from such cargoes is mostly related with fire, fume or dust, hence no risk of liquefaction. However, there are some cargoes in the IMSBC Code that are classified as Group A and B cargoes,<sup>47</sup> which means that in addition to possessing chemical hazards such cargoes may also liquefy if shipped with high moisture content,<sup>48</sup> but none of Group A and B cargoes are listed in the IMDG Code.<sup>49</sup> Since Chapter VII is mainly concerned with Group B cargoes which do not pose the threat of liquefaction, it is irrelevant to be considered under this thesis. Though, it should be noted that Group A solid bulk cargoes, in other words the may-liquefy cargoes, are not considered dangerous under the IMDG Code in spite of the many causalities that have been resulted by cargo liquefaction. Chapter 4 of this thesis considers whether solid bulk cargoes should be classified as dangerous,<sup>50</sup> but such a determination will be a matter for diverse national laws rather than global coherent which the IMSBC Code aims to achieve.

#### 2.2.4 Chapter XII – Additional Safety Measures for Bulk Carriers

This chapter focuses on the technical aspects of bulk carriers' construction as it lays down standard requirements for structural design, maintenance, surveys and cargo-related operational systems. It was first adopted in 1997 and has gone through several amendments to further enhance the safety of bulk carriers.<sup>51</sup> Both *the Derbyshire* incident investigation report<sup>52</sup> and a study carried out by the

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<sup>45</sup> IMDG Code, Vol.1 Part 2 Ch.2 (section 2.0.2).

<sup>46</sup> For IMSBC cargoes' groups, see below 2.5.2 Categories of cargoes.

<sup>47</sup> i.e. METAL SULPHIDE CONCENTRATES, see IMSBC Code, Appendix 1 p.232. (2013 Edition)

<sup>48</sup> IMSBC cargo groups are discussed below 2.5.2.

<sup>49</sup> For instance: ALUMINIUM SMELTING BY-PRODUCTS UN 3170 is a Group B cargo listed in the IMDG Code, but ALUMINIUM SMELTING BY-PRODUCTS, PROCESSED is a Group A and B cargo not recognised as dangerous under the IMDG Code. See IMSBC Code, Appendix 1 pp.72-75.

<sup>50</sup> See chapter 4.2.2 Are solid bulk cargoes 'dangerous'?

<sup>51</sup> The IMO, '*Bulk Carrier Safety*' (available on: <http://www.imo.org/en/OurWork/Safety/Regulations/Pages/BulkCarriers.aspx>) [Accessed November 2015]

<sup>52</sup> Briefly, the *Derbyshire* was the largest UK-registered vessel to have been lost at sea. The young, well-maintained, well-crewed and well-managed vessel perished without trace when she encountered a typhoon in the north west Pacific Ocean. It is believed that cracks and fatigue fractures in the ship's design, owing to her unique Bridge Class, were the cause of the loss, whereby 5 of her sister-ships reported such problems. See The Honorable Mr Justice Colman. '*Report of the Re-Opened Investigation into the Loss of the MV Derbyshire*'. 26<sup>th</sup> July 2000.

International Association of Classification Societies (IACS) formed the major contributions for the development of Chapter XII.<sup>53</sup> It was found that:

*“if a ship is flooded in the forward hold, the bulkhead between the two foremost holds may not be able to withstand the pressure that results from the sloshing mixture of cargo and water, especially if the ship is loaded in alternate holds with high density cargoes (such as iron ore). If the bulkhead between one hold and the next collapses, progressive flooding could rapidly occur throughout the length of the ship and the vessel would sink in a matter of minutes.”*<sup>54</sup>

The Chapter, therefore, requires bulk carriers to have particular steel thickness for bulkhead structures and/or the use of single-skin or double-skin body-construction in line with the types of cargoes the ship is designed to carry. In relation to solid bulk cargoes, depending on the length and age of the bulk carrier and the density of the solid bulk cargo to be carried, there are various regulations within this Chapter that must be followed but all generally aim to ensure the bulk carrier has sufficient strength to withstand flooding of any cargo, and has watertight bulkhead to prevent water ingress into the holds.<sup>55</sup> However, none of the investigation reports into liquefaction incidents occurred to date indicated any structural default found on the ill-fated vessels,<sup>56</sup> but all contributed the causes of these losses to three main factors; first, cargo loaded with excessive moisture content, second, vessel encountered heavy seas which led the cargo to change from solid to fluid state and, third, insufficient knowledge on part of the master and crew of the characteristics of solid bulk cargoes that are liable to liquefy.<sup>57</sup>

### 2.3 The Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code)

The BLU Code is aimed at assisting shipowners, masters, shippers, operators and charterers of bulk carriers, and terminal operators, to carry out their functions for the safe handling, loading and unloading of solid bulk carriers. It reflects current issues and provides guidance on best practices to all those responsible for such operations in order to promote the safety of bulk carriers.<sup>58</sup> Regulation

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<sup>53</sup> See Resolution MSC 74/5/2 which presents the recommendations of the Re-opened Formal Investigation into the loss of the *Derbyshire*.

<sup>54</sup> Ibid, fn.51, also see Resolution MSC 74/24.

<sup>55</sup> See Regs 4.1, 4.3, 5.1, 6.1, 6.4, 7.1, 8.2 and 10.

<sup>56</sup> It has been reported in the media that the recent losses concerning *the Stellar Daisy* and *Cemfjord* (two recent casualties involved the loss of both vessels and the crew onboard) were lost due to hull-plating failure which allowed water ingress. It is believed that the solid bulk cargoes onboard, which must have liquefied following water ingress, had dramatically increased the listing of the vessels leading to their prompt capsizing. An investigation video report was issued by the British Marine Accident Investigation Branch on the loss of *the Cemfjord*, which can be accessed on the following link: <https://www.gov.uk/maib-reports/capsizing-and-sinking-of-cement-carrier-cemfjord-with-loss-of-8-lives>

<sup>57</sup> i.e. see Report: M/V “*Jian Fu Star*” R- 011-11- DIAM by Panama Maritime Authority, Marine Accident Investigation Department, 27 February 2011.

<sup>58</sup> See Resolutions A.862(20), MSC.47(66), MSC.238(82) and MSC.304(87).

7 of Chapter VI of SOLAS, which covers loading, unloading and stowage of solid bulk cargoes,<sup>59</sup> specifically refers the master and the terminal representative to consult the BLU Code in the handling of solid bulk cargo operations. The BLU Code lists out the procedures that must be followed between the ship and shore, and it details all the information that must be exchanged between the ship and the terminal prior to her arrival and also before the commencement of any cargo operations.<sup>60</sup> In order to augment the BLU Code, the Manual on loading and unloading of solid bulk cargoes for terminal representatives (BLU Manual) was also issued to assist terminal representatives understand the key issues that could arise at the interface between the ship and the terminal, and provide guidance on good practice regardless of the vessel's size, quantity of the cargo or the terminal capacity.<sup>61</sup> The BLU Manual basically provides explanatory notes to the BLU Code in order to best fulfil its provisions.

#### 2.4 The International Maritime Dangerous Goods (IMDG) Code

In response to the United Nations Recommendations on the Transport of Dangerous Goods Model Regulation which sets out minimum standards for the transport of dangerous goods by all transport modes, the IMO adopted the IMDG Code in 1960 to enhance the safe transport of dangerous goods onboard vessels without restricting the movement of such goods.<sup>62</sup> The Code deals with classification, packing and labelling of dangerous goods, and the necessary documentations required for their shipment. It lists nine different classes of dangerous goods, some of which are subdivided into divisions, and it defines the characteristics and properties of all materials, articles and substances that fall within these classes and divisions. The IMDG Code corresponds to Chapter VII of SOLAS that deals with the carriage of dangerous goods, but it only applies to such dangerous goods that are covered by the IMDG Code.<sup>63</sup> Therefore, as discussed above,<sup>64</sup> it is only substances or materials, which possess chemical hazards that could give rise to dangerous situations on ships, that are recognised as dangerous by the IMDG Code. Such cargoes do not pose the threat of liquefaction and therefore the IMDG Code is irrelevant to the issue of solid bulk cargo liquefaction.<sup>65</sup>

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<sup>59</sup> Discussed above, 2.2.2 Chapter VI – Carriage of Cargoes.

<sup>60</sup> Sections 3 and 4 of the BLU Code respectively.

<sup>61</sup> The Maritime Safety Committee approved the BLU Manual at its 80<sup>th</sup> session (11-20 May 2005).

<sup>62</sup> Resolution MSC.122(75). The IMDG Code is legally treated as a mandatory instrument under SOLAS, but some of its provisions remain recommendatory, see Reg.1.1.1.5 of Ch.1.1 of the IMDG Code.

<sup>63</sup> The IMDG Code, Ch.1.1 Reg.1.1.1.1. Also see Reg.1, Part A, Ch.VII of SOLAS.

<sup>64</sup> See 2.2.3 Chapter VII – Carriage of Dangerous Goods above.

<sup>65</sup> These materials correspond with Group B cargoes of the IMSBC Code. Also, none of the currently listed Group A and B cargoes are considered as dangerous by the IMDG Code. Discussed above: 2.2.3 Chapter VII – Carriage of Dangerous Goods. However, Chapter 4 further discusses how the IMO categorises the cargoes into the Codes, and whether solid

## 2.5 The International Maritime Solid Bulk Cargo (IMSBC) Code

The aim of the IMSBC Code, adopted in 2008,<sup>66</sup> is to provide information about the dangers associated with the shipment of solid bulk cargoes and procedures to be adopted by the relevant parties in order to facilitate the safe carriage of such goods. The Code outlines the obligations required from shippers of solid bulk materials to provide all the necessary documents, including test certificates, to the master prior to shipment.<sup>67</sup> The Code also sets out loading and carriage precautions to be followed by the master when handling and stowing the solid bulk cargo in question.<sup>68</sup> In addition, the Code includes several test procedures to determine the moisture content of the said cargoes to be followed by the relevant laboratories and surveyors,<sup>69</sup> and it also provides a wide list of individual schedules for various solid bulk cargoes that detail specific precautions for each solid bulk cargo listed.<sup>70</sup> Observance of the IMSBC Code rules intends to harmonise the procedures and practices to be followed, and the necessary precautions to be taken, in the carriage of solid bulk cargoes in order to enhance safety and ensure compliance with the mandatory provisions of SOLAS.<sup>71</sup> The IMSBC Code is, therefore, the most vital regulatory instrument that forms the cornerstone for any carriage of solid bulk materials by sea. It is the IMO's answer to all the liquefaction incidents that caused the loss of many lives and ships, thus strict adherence to its provisions is required by all those responsible for the carriage of solid bulk cargoes.

### 2.5.1 Development of the Code

The dangers of bulk carriage were recognised since 1960 at the International Conference on Safety of Life at Sea, but it was not possible to frame any regulation at that time except for the carriage of grain.<sup>72</sup> However, it was recommended that the IMO should sponsor an international code to outline safe practices for the shipment of bulk cargoes.<sup>73</sup> As a result, the Code of Safe Practice for Solid Bulk Cargoes (BC Code) was established to provide guidance to masters, shipowners, shippers and administrations on acceptable standards to be applied for the safe stowage and shipment of solid bulk

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bulk cargoes that are prone to liquefy should be defined as dangerous. See 4.2.3 the IMO's definition of 'dangerous cargo'.

<sup>66</sup> Resolution MSC.268(85). The Code was amended by Resolution MSC.318(89) incorporating amendment 01-11 (entered into force on January 2013), and it was further amended by Resolution MSC.354(92) incorporating amendment 02-13 (entered into force on January 2015).

<sup>67</sup> Section 4.

<sup>68</sup> Section 2.

<sup>69</sup> See Appendix 2 of the Code.

<sup>70</sup> See Appendix 1 of the Code.

<sup>71</sup> Mainly with Ch.VI (Part A and B) and Ch.VII (Part A-1) of SOLAS, discussed above.

<sup>72</sup> The IMSBC Code, Foreword p.5 (2013 edition).

<sup>73</sup> *Ibid*, fn.70.

cargoes.<sup>74</sup> The BC Code is similar in contents, though different in format, to the IMSBC Code that replaced it,<sup>75</sup> but the significant difference between the two Codes lies in the mode of application. Whilst the BC Code took a recommendatory approach, the IMSBC Code enjoys mandatory application under Chapters VI and VII of the SOLAS Convention.<sup>76</sup>

*(a) The difference between the BC and IMSBC Codes*

In addition to changing the term ‘should’ in the BC Code, which suggests a recommendatory nature, to the word ‘shall’ that reinforces the mandatory approach in the IMSBC Code when describing the obligations required from the parties,<sup>77</sup> the IMSBC Code provides extensive individual schedules of solid bulk cargoes that clearly describe the characteristics and identify the hazards of such cargoes, alongside all the necessary precautions that must be followed to load, stow, carry and discharge the cargo in question. In contrast, the BC Code outlined lists of solid bulk cargoes with general descriptions and precautions rather than providing more specific information for each individual solid bulk cargo presented for shipment.<sup>78</sup> Nonetheless, the IMSBC Code clarifies from the outset that these schedules are not exhaustive and highlighted the necessity of obtaining all relevant information on the physical and chemical properties of the given cargo before loading.<sup>79</sup> The IMSBC Code has also, unlike the BC Code, assigned each solid bulk cargo that is listed in the Code with a Bulk Cargo Shipping Name (BCSN), which must be used on all shipping documents for identification purposes.<sup>80</sup> If the solid bulk cargo is dangerous, then the United Nations (UN) number must also be supplied with the BCSN, in accordance with the IMDG Code classification.<sup>81</sup>

*(b) Amendments of the IMSBC Code*

The IMSBC Code is regarded as a living document, which means that it is subject to subsequent amendments biennially.<sup>82</sup> The IMSBC Code has undergone several amendments over the years,<sup>83</sup> in particular as the dangers associated with the shipment of solid bulk cargoes reached an highly alarmed attention in late 2010, following the loss of four vessels within very few months due to

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<sup>74</sup> MSC.193(79).

<sup>75</sup> By resolution MSC.268(85).

<sup>76</sup> By resolution MSC.269(85).

<sup>77</sup> The effectiveness of this mandatory application is considered below in 2.7.4.

<sup>78</sup> See Appendixes A, B and C of the BC Code.

<sup>79</sup> Section 1.2 and 1.3 of the IMSBC Code.

<sup>80</sup> Section 4.1 of the IMSBC Code. For cargoes not listed in the Code, the shipper must follow the procedure laid down in section 1.3.

<sup>81</sup> Discussed above in 2.2.3 Chapter VII – Carriage of Dangerous Goods.

<sup>82</sup> See document DSC 12/14 (27 May 2008), due to its linkage with the IMDG Code which is amended every two years.

<sup>83</sup> Amendment 1-11 by resolution MSC.318(89), amendment 2-13 by resolution MSC.354(92) and amendment 3-15 by resolution MSC.393(95).

cargo liquefaction that caused the loss of 67 crewmembers.<sup>84</sup> As a result, the Maritime Safety Committee established an Editorial and Technical Group to investigate any recent issues related to the carriage of solid bulk cargoes and propose amendments with the aim to improve and update the IMSBC Code,<sup>85</sup> for instance: the four ill-fated vessels in 2010 were carrying nickel ore which was not listed in the Code as a cargo liable to liquefy, but further extensive researches were carried out following these incidents and the Code was later amended to list nickel ore as a Group A cargo as it may liquefy if shipped with high moisture content.<sup>86</sup> Recently, the Sub-Committee on Carriage of Containers and Cargoes (CCC) approved a circular at its second session (14 to 18 September 2015) inviting for further examinations of the properties of bauxite,<sup>87</sup> which is currently listed as Group C cargo that is not liable to liquefy, in response to the loss of *Bulk Jupiter* on 2 January 2015, with 18 lives of her crewmembers, whereby initial investigation suggests that liquefaction of bauxite was the cause of this incident.<sup>88</sup> Undoubtedly, the IMSBC Code can still be considered to be under construction as many solid bulk carriage issues consequently emerge due to high demands for the transportation of solid bulk materials, yet it has significantly contributed to raise awareness of the dangers of liquefaction despite some views that doubt its effectiveness in tackling the liquefaction issue.<sup>89</sup>

### 2.5.2 Categories of cargoes

The BC Code established general lists in Appendixes to describe cargoes that may liquefy or possess chemical hazards or such cargoes that bear neither of these risks, whereas the IMSBC Code classified the said types of cargoes into three groups. Group A refers to cargoes that may liquefy if shipped with high moisture content, Group B identifies cargoes that may give rise to dangerous situations on ships due to chemical hazards, and Group C cargoes which are neither liable to liquefy nor to possess any chemical hazard. Group B cargoes are outside the merits of this thesis, though it should be noted that some cargoes are classified as Group A and B, which means that such goods can also liquefy in addition to possessing chemical hazards.<sup>90</sup> However, Group C cargoes are considered

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<sup>84</sup> Discussed in 1.2 Marine Casualties above.

<sup>85</sup> See resolution MSC 89/7/1 (2 February 2011).

<sup>86</sup> See document DSC 16/4/10 (submitted by France on 17 June 2011). Similarly, iron ore was not listed in the IMSBC Code but was later listed as Group C cargo (see document DSC 15/4/16 submitted by BIMCO on 23 July 2010).

<sup>87</sup> Circular CCC.1/Circ.2.

<sup>88</sup> See: The IMO, 'IMO warns on bauxite liquefaction dangers' (available on: <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/38-bauxite-CCC.aspx>) [Accessed December 2015]. 2.7.1(a) below discusses the loss of the *Bulk Jupiter* more in depth.

<sup>89</sup> Discussed below, 2.7 Assessment of the IMSBC Code effectiveness.

<sup>90</sup> Discussed in 2.2.3 Chapter VII – Carriage of Dangerous Goods above. Section 9 of the IMSBC Code deals with materials possessing chemical hazards.

under this study because despite the fact that such goods are not liable to liquefy, some goods of this type experienced liquefaction incidents and resulted in the loss of lives and properties.<sup>91</sup>

General provisions concerning Group A cargoes are listed in section 7 of the IMSBC Code which outlines the hazards of liquefaction and addresses general precautions to be followed to accept and load such cargoes.<sup>92</sup> Most Group A cargoes are mineral concentrates which have not seen many incidents in recent years due to the uniform of their nature and the fact that their properties are well controlled.<sup>93</sup> However, unprocessed ore cargoes, which are also classed as Group A, have been responsible for a number of tragic incidents,<sup>94</sup> such as: nickel ore, iron ore fines and iron concentrate.<sup>95</sup> Section 7 emphasises that Group A goods must not be accepted for shipment unless the actual moisture content of the cargo is less than its Transportable Moisture Limit (TML).<sup>96</sup> The TML represents the maximum moisture content level that could be present in a cargo, yet still be considered safe for shipment. In addition to following the general precautions in Section 7, the master, and all those responsible for loading operations, should also consult and follow the specific information and measures provided in the individual schedule of the given cargo in Appendix 1 of the IMSBC Code.<sup>97</sup> Nevertheless, there is one provision in section 7 which allows shipment of any solid bulk cargo regardless of its moisture content level, even if it is a cargo that is liable to liquefy. Section 7.3.2 governs the shipment of solid bulk cargoes aboard specially constructed or fitted cargo ships, in which such constructed vessels must have '*permanent structural boundaries, so arranged as to confine any shift of cargo to an acceptable limit*',<sup>98</sup> and specially fitted cargo ships must have '*portable divisions to confine any shift of cargo to an acceptable limit*'.<sup>99</sup> If a vessel has been so constructed or modified for the carriage of solid bulk cargoes in spite of their TML, then the master need not worry if a cargo of excessive moisture content has been presented for shipment.<sup>100</sup> However, such vessels must be approved by their relevant administrations, and keep onboard evidence of such

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<sup>91</sup> As discussed above with iron ore and bauxite cargoes.

<sup>92</sup> Sections 7.2 and 7.3.

<sup>93</sup> DNV.GL. '*Bulk Cargo Liquefaction Guideline for design and operation of vessels with bulk cargo that may liquefy*' (Available on: <https://www.dnvgl.com/news/a-safer-bulk-trade-dnv-gl-releases-new-guideline-on-cargo-liquefaction-44410>) Accessed December 2015. A list of mineral concentrates is provided in Appendix 1 of the IMSBC Code (p.235) (2013 edition).

<sup>94</sup> Discussed above in ch.1.2.

<sup>95</sup> Ibid, DNV.GL Guideline.

<sup>96</sup> Section 7.3.1.1. TML is defined in section 1.7 of the IMSBC Code.

<sup>97</sup> See for example Appendix 1 (p.238, 2003 edition) concerning NICKEL ORE. Masters must be aware of the hazard and weather precautions, and follow all the stowage, segregation and carriage requirements provided in the NICKEL ORE schedule.

<sup>98</sup> Section 7.3.2.2.

<sup>99</sup> Section 7.3.2.3.

<sup>100</sup> See section 8.1.

approval.<sup>101</sup> Though, this type of vessels is not yet available in large numbers and the costs for modifying existing vessels are expensive.<sup>102</sup>

### 2.5.3 Cargo requirements: sampling, tests and certificates

In order to determine the moisture content and TML of a solid bulk cargo, tests must be carried out on samples taken from the particular consignment to be shipped. The tests should be conducted on actual representative test samples,<sup>103</sup> which are defined as '*a sample of sufficient quantity for the purpose of testing the physical and chemical properties of the consignment to meet specified requirements.*'<sup>104</sup> Sampling must be carried out by suitably trained persons and follow national or international accepted standard procedures,<sup>105</sup> and utmost care must be observed throughout the sampling process to prevent any changes in the quality or characteristics of the cargo.<sup>106</sup> Having sampled the cargo, the next stage is to carry out laboratory tests to determine the actual moisture content and TML of the cargo. Section 8, supplemented with Appendix 2 of the Code, provides test procedures for Group A cargoes. The tests are fully-detailed in Appendix 2 which outlines three internationally recognised methods for testing the TML, namely: flow table test, penetration test and Proctor/Fagerberg test. The appropriate method of testing is determined by local practices or by the appropriate authorities.<sup>107</sup> For the purpose of this thesis, it is unnecessary to detail the tests' technical aspects and their mechanism for determining the moisture present in a solid bulk cargo, but the legal implications that may arise are considered in other chapters, save alone the practical issues that have been discussed in relation to the unreliability of laboratories in the countries of shipment.<sup>108</sup> In addition, some studies have outlined some controversy about these tests, whereby the accuracy and precision of the results are doubted. These studies established that applying the Flow Table Test and the Proctor/Fagerberg test on a given sample of solid bulk material indicated significant variances with each test finding different results for the same sample.<sup>109</sup> This adds to the uncertainty

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<sup>101</sup> Sections 7.3.2.2, 7.3.2.3 and 7.3.2.4.

<sup>102</sup> See the world's first specialised nickel ore carrier on ClassNK. '*ClassNK Welcomes World's First Specialized Nickel Ore Carrier to Register*' (Available on <http://www.allaboutshipping.co.uk/2012/10/23/classnk-welcomes-worlds-first-specialized-nickel-ore-carrier-to-register/>) Accessed October 2013.

<sup>103</sup> Section 4.4.1.

<sup>104</sup> Section 1.7 of the IMSBC Code.

<sup>105</sup> Sections 4.4.2 and 4.4.7 respectively.

<sup>106</sup> Section 4.4.6.

<sup>107</sup> Section 1, Appendix 2 of the IMSBC Code.

<sup>108</sup> See 2.7.2 Unreliable test results, below.

<sup>109</sup> Rose, T. (2013). *The Liquefaction of Solid Bulk Cargoes During Seaborne Transportation*. Thesis submitted to the University of Oxford. This point is further addressed in 2.7.2 below.

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surrounding solid bulk trade where a party relies on the results of these tests but may later be found to be inaccurate.<sup>110</sup>

After the tests have been concluded, a certificate must be issued by the laboratory detailing the actual moisture content and TML of the cargo tested. In accordance with section 4.5 of the IMSBC Code, the sampling/testing of the cargo for TML must not be less than 6 months to the date of loading, but additional tests must be carried out if the characteristics of the cargo are variable for any reason.<sup>111</sup> Whereas, the interval between the tests carried out to determine the actual moisture content of the cargo and loading operations must not be more than 7 days. Again, if there is any reason to believe that the cargo's moisture content has been altered in any way, such as: rain or snow which can certainly bring the cargo to a flow state, then further tests must be carried out.<sup>112</sup> This is extremely important as we learned from Chapter 1 that one of the practical issues in solid bulk trade is that the high demand behind these goods meant loading operations may be carried out during monsoon seasons, exposing uncovered piles of cargoes to heavy rain that in turn increases the moisture content beyond the TML, and thus enhances the chance of liquefaction.<sup>113</sup> As a final assurance to examine the safety of the cargo, masters are entitled to carry out the 'can test' which is addressed in section 8.4 of the IMSBC Code. This check test can be done during loading operations to determine the possibility of liquefaction. In brief terms,<sup>114</sup> the master fills up half a can with a sample of the cargo and sharply bangs the can against a hard surface 25 times. If moisture appears on the surface then further lab tests must be conducted before he accepts the material in question. However, section 8.4.2 provides that liquefaction may still occur even if the sample remains dry after the 'can test'. Although this brings the uncertainty back again, the 'can test' is not intended to be conclusive in determining the safety of the cargo but can be an indicative measure to keep an eye on the moisture content during loading operations.

#### 2.5.4 Responsibilities of the parties

The IMSBC Code sets out certain obligations required from shippers, masters and terminal representatives to ensure compliance with the Code and achieve its goals. The obvious obligation required from shippers is to provide all information on the cargo, including signed certificates of the

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<sup>110</sup> The legal analysis of these implications is discussed in Chapters 3 and 4.

<sup>111</sup> Section 4.5.1.

<sup>112</sup> Section 4.5.2.

<sup>113</sup> Ch.1.3 above.

<sup>114</sup> The full test is detailed in section 8.4.1.

moisture content and TML test results, sufficiently in advance of loading operations.<sup>115</sup> Therefore, the Code sets the obligations to sample, test and certify the moisture content and TML of the cargo upon the shipper, whereby section 4.3.3 provides that procedures for such activities shall be established by the shipper in accordance with the Code, and shall be approved by the competent authority.<sup>116</sup> In addition, if loading operations are being carried out from a barge, the shipper shall arrange procedures to protect the cargo on the barges from any water ingress.<sup>117</sup> If the solid bulk cargo in question is not listed in the Code, the shipper must then follow the procedures detailed in section 1.3 and provide all cargo information to the competent authority in order to assess the acceptability of the cargo for shipment. In relation to the master's obligations, he must follow the SOLAS obligations that are reintroduced in the IMSBC Code, mainly Part B of Chapter VI which requires full co-operation with the terminal representative during loading operations.<sup>118</sup> In addition, masters, or any party responsible for cargo operations,<sup>119</sup> are obliged to follow the procedures laid down in the IMSBC Code in connection with loading, stowing and trimming the cargo,<sup>120</sup> and carefully follow the measures provided in the individual schedules of solid bulk cargoes in Appendix 1 of the Code. Most importantly, the master has the right to suspend cargo operations if any of the safe limits within the Code are exceeded.<sup>121</sup> Ships carrying dangerous goods in solid form in bulk are required to have onboard all necessary documentations in accordance with SOLAS Chapter VII Regulation 7-2 and section 4.8 of the IMSBC Code.

The IMSBC Code obligations are aimed at identifying the properties of the cargo to be within safe limits, and following best practices during cargo operations to minimise the risk of liquefaction. As learned, the IMSBC Code has a mandatory application, thus it applies to all ships, which are subject to the SOLAS Convention, carrying solid bulk cargoes.<sup>122</sup> However, ensuring compliance with the Code is not an easy task, and it is also unclear what the legal outcome might be for failing to comply with such rules. The IMSBC Code does not provide penalties or offences against any breach, and recourse will be drawn to national laws that are implementing the Code in order to find an

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<sup>115</sup> Section 4.2. Also, see Regulation 2 of Ch.VI Part A of the SOLAS Convention (discussed above).

<sup>116</sup> Resolution MSC.1/Circ.1454 provides guidelines to assist shippers and competent authorities for developing and approving procedures for sampling, testing and controlling the moisture content for solid bulk cargoes which may liquefy.

<sup>117</sup> Section 4.3.4.

<sup>118</sup> Discussed above in 2.2.2 Chapter VI – Carriage of Cargoes.

<sup>119</sup> As such operations may contractually be the responsibility of other parties, i.e. charterers or shippers. Discussed further in Chapter 3 (3.3.1(a)).

<sup>120</sup> Sections 5, 7, 9, and 10.

<sup>121</sup> SOLAS, Ch.VI, Part V, Reg.7.5.

<sup>122</sup> Section 1.4 of the IMSBC Code.

answer.<sup>123</sup> In practice, policing the compliance of ships with international rules rests upon Flag States, supplemented by Port State Control inspections, which are empowered under national laws with legal tools to enforce the regulations.<sup>124</sup> As amongst the parties, they usually identify the one who is responsible to ensure compliance with any applicable international regulations in the charter, who will then be liable in the event of breach,<sup>125</sup> though it is not often straightforward and disputes arise in an attempt to blame one another.<sup>126</sup>

## 2.6 Other legal instruments

In addition to the international conventions and Codes discussed above, there are other regulatory regimes that may voluntarily or compulsorily be applicable to the carriage contract of solid bulk materials. The most commonly in use are the Hague-Visby Rules in which Article 4 Rule 6 deals with the carriage of dangerous goods,<sup>127</sup> though the Hague, Hamburg and Rotterdam Rules also contain some provisions that govern the parties' liabilities in respect of dangerous goods.<sup>128</sup> It must be noted, however, that none of the aforesaid rules define dangerous goods for fear of interfering with technical areas or creating obsolete lists.<sup>129</sup> Also, neither of these rules confine dangerous goods to those listed in the IMDG Code, leaving such determination to be found under national laws.<sup>130</sup> Nevertheless, the liabilities appear to be the same under the rules despite slight changes with the shipper's obligations.

Under the Hague-Visby Rules,<sup>131</sup> the shipper is required to notify the carrier about the characteristics of any dangerous goods he is shipping onboard the vessel, failure of which hold him liable for any damages or losses caused from such goods. Under common law, the shipper will be

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<sup>123</sup> For instance: under English law, s.21 of the Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 requires the shipper of any dangerous goods to be carried in bulk to provide the master with a written notice detailing the nature of the goods and their correct technical name, and if he fails to provide such notification he shall be guilty of an offence which, by virtue of s.24(1), could vary from summary conviction to a fine not exceeding the statutory maximum or, on conviction on indictment, to imprisonment for a term not exceeding two years or a fine or both.

<sup>124</sup> By example, see the Australian Maritime Safety Authority response to a vessel that was found in breach of international regulations on <http://www.mastermariners.org.au/2014-01-17-01-18-06/archived-articles-2/1773-amsa-bans-vessel-from-australian-ports-for-12-months> [Accessed February 2015].

<sup>125</sup> See Annex [4]: BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties. Clauses to this effect are discussed in Chapter 4.

<sup>126</sup> See 4.5 Can the carrier refuse to carry dangerous cargo? in Chapter 4 below.

<sup>127</sup> Discussed further in Chapters 3 and 4.

<sup>128</sup> Outlined in the next paragraph.

<sup>129</sup> Berlingieri, F. (2014). *International Maritime Conventions Volume I: The Carriage of Goods and Passengers by Sea*. London: Informa. Ch.3 para.12.5.

<sup>130</sup> See below 4.2.1 Meaning of 'dangerous' cargo.

<sup>131</sup> The obligations of the shipper and carrier under the Hague-Visby Rules are considered further in Chapters 3 and 4.

strictly liable unless he can prove that the carrier had knowledge about such characteristics prior to accepting the cargo, in which case the shipper may not be liable.<sup>132</sup> If the shipper loads dangerous cargo without the carrier's knowledge, the latter is entitled to destroy or jettison the cargo if it presents any danger during the voyage without being required to indemnify the shipper, by virtue of Article IV Rule 6. Under the Hamburg Rules, the shipper is similarly bound to inform the carrier about the dangerous nature of his goods and if necessary the measures to be followed, unless the carrier had otherwise knowledge about such nature.<sup>133</sup> The liability lies upon the shipper under Article 13 of the Hamburg Rules if dangerous cargo is shipped without the carrier's knowledge, and the latter bears no liability for destroying the cargo if it becomes a danger to the ship. Under the Rotterdam Rules, the same obligation and rule apply in terms of notification, liability and carrier's entitlement to destroy cargo,<sup>134</sup> but the Rules also provide one more obligation on part of the shipper. Article 32(b) requires the shipper to mark or label dangerous goods in accordance with any applicable regulations or public authorities requirements for the intended voyage. However, since this obligation does not arise from the article itself, but from relevant applicable requirements, it does not constitute a novelty compared to the Hague-Visby or Hamburg Rules.<sup>135</sup> Whereby, the Hague-Visby Rules require the shipper to guarantee the accuracy of the marks and labels on the cargo, as furnished by him, to the carrier under Article III Rule 5, and the Hamburg Rules also require the shipper to mark the goods in a suitable manner in accordance with Article 13(1). Therefore, the Rotterdam Rules do not provide an additional obligation not found in the other regimes. Finally, liability is strict under all these rules and the burden lies on the carrier to prove that his loss was caused by the dangerous nature of the goods,<sup>136</sup> whereas the shipper has to establish that the carrier had the knowledge of their character.<sup>137</sup>

## 2.7 Assessment of the IMSBC Code effectiveness

The aforesaid conventions address the procedures that must be strictly followed in the carriage of solid bulk cargoes, yet liquefaction incidents remain one of the major contributions for bulk carriers'

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<sup>132</sup> See below 4.3 Duty to notify the carrier about the dangerous character of the goods, where the strict liability approach was fully addressed in light of the pioneered decisions *Brass v Maitland* (1856) 6 El & BL 470; 119 E.R. 940 (pp.945-948) and *The Giannis NK* [1998] Lloyd's Rep. 337 (p.345).

<sup>133</sup> Article 13.

<sup>134</sup> Article 32.

<sup>135</sup> Berlingieri, F. (2009). *A Comparative Analysis of the Hague-Visby Rules, the Hamburg Rules and the Rotterdam Rules*. Paper delivered at the General Assembly of the AMD, Marrakesh 5-6 November.

<sup>136</sup> See Mustill J. in the *Athanasia Comninos* [1990] 1 Lloyd's Rep. 277. p.281; and see Judge Diamond Q.C. in *The Fiona* [1993] 1 Lloyd's Rep. 257. p.268.

<sup>137</sup> Mustill J. in the *Athanasia Comninos* [1990] 1 Lloyd's Rep. 277. p.283. The burden of prove is detailed in Chapter 3.

deaths.<sup>138</sup> The International Association of Dry Cargo Shipowners (INTERCARGO) has released several alerts concerning cargo liquefaction in the last 5 years alone,<sup>139</sup> including a ‘Guide for the Safe Loading of Nickel Ore’ to help the shipping industry stakeholders better understand the problems associated with this type of cargo and how to ensure compliance with the IMSBC Code.<sup>140</sup> The solid bulk market has boomed since 2006 surged with high demands, which recorded the world total usage of nickel ore arising from 1234,3 thousand tonnes in 2009 to 1868,5 thousand tonnes in 2015.<sup>141</sup> This trade has once claimed the loss of 66 seafarers’ lives in less than 14 months during the uprising market between Indonesia and China,<sup>142</sup> whereby the parties and relevant authorities had often ignored, or applied lax implementation of, the regulations at hand.<sup>143</sup> The high number of losses resulting from liquefaction incidents are significantly alarming signs of the unsafety of this trade, which certainly justify questioning the effectiveness of the IMSBC Code.<sup>144</sup> There are four main flaws in the Code: First, wrong classification of cargoes, second, unreliable test results, third, improper implementation by the parties and port authorities and, fourth, the uncertainty concerning liability following a breach of its provisions.

### 2.7.1 Miss-categorisation of cargoes

Some cargoes in the Code that were classified as Group C cargoes, not liable to liquefy, had in fact experienced liquefaction. This may amount to misrepresentation of cargo on part of the shipper and, consequently, he may be found liable for shipment of undeclared dangerous cargo, if the cargo loaded later liquefies and causes damages to the carrier. Shipper would argue that they complied with

<sup>138</sup> In January 2012, nickel ore trade amounted up to only 6% of the bulk trade but accounted for 80% of the fatalities. See: Mario Vittone. ‘Bulk Trade-Off: Blood for Money in Indonesia’ (available on: <http://gcaptain.com/bulk-trade-off-indonesia/>) [Accessed April 2015].

<sup>139</sup> See INTERCARGO press release page <http://www.intercargo.org/en/news/press-releases.html>.

<sup>140</sup> INTERCARGO. ‘NICKEL ORE: STOP, THINK, VERIFY! Intercargo Guide for the Safe Loading of Nickel Ore’ (available on: [http://www.gard.no/webdocs/Intercargo\\_Nickel\\_Ore.pdf](http://www.gard.no/webdocs/Intercargo_Nickel_Ore.pdf)) [Accessed March 2016].

<sup>141</sup> According to statistics issued by the International Nickel Study Group on 27 August 2015. Check: <http://www.insg.org/stats.aspx>

<sup>142</sup> Recently, the media reported that China is expected to import one billion ton of iron ore by the end of 2017, whereby the first six month of the year has already surpassed 539 million tons, compared with 493 million tons shipped in the first half of 2016. See, Sam Chambers. ‘China on track to hit 1bn tons of iron ore imports’ (available on: <http://splash247.com/china-track-hit-1bn-tons-iron-ore-imports-year-early/>) [Accessed July 2017]. For total number of deaths and liquefaction incidents, see Annex [1].

<sup>143</sup> Mario Vittone. ‘Bulk Trade-Off: Blood for Money in Indonesia’ (available on: <http://gcaptain.com/bulk-trade-off-indonesia/>) [Accessed April 2015].

<sup>144</sup> INTERCARGO submitted in its report at the 3rd session of the Sub-Committee on Implementation of IMO Instruments meeting that: “Cargo shift and/or liquefaction has become one of the greatest concerns for the safe carriage of dry bulk over the past 10 years with the transport of the potentially high risk Nickel Ore cargoes remaining a major concern of the industry. Many in the bulk carrier industry still have not recovered from the shock of losing seven bulk carriers and 82 seafarers as a consequence of suspected cargo liquefaction in the years 2010, 2011 and 2013.” (paragraph 2 of INTERCARGO’s report: Lessons Learned And Safety Issues Identified From The Analysis Of Marine Safety Investigation Reports (III 3/INF.26).

the Code and they were unaware of the dangerous nature of the cargo loaded. However, as it is outlined in Chapter 4, the liability upon the shipper not to ship dangerous goods is one of strict liability, and thus it matters not the knowledge they may have on the cargo they are loading. When the IMSBC Code was initially adopted in 2008, Nickel ore was described as Group C cargo, but the loss of 82 seafarers by reason of its liquefaction in the subsequent years urged the Maritime Safety Committee at the IMO to declare it as a Group A cargo.<sup>145</sup> Similarly, the same dilemma is now occurring with bauxite which is currently listed as Group C cargo, but a major incident that resulted in the death of 18 crewmembers following the liquefaction of bauxite onboard the *Bulk Jupiter*, had necessitated the need for a thorough investigation to be carried out by the IMO to identify the safe parameters for this type of cargo.<sup>146</sup>

The *Bulk Jupiter* was chartered to load 46,000 tonnes of bauxite at Kuantan port in Malaysia bound for China. She arrived on 16<sup>th</sup> December 2014, when the shipper provided the Master with a declaration that the cargo was Group C cargo, with particle size (70% to 90% lumps: 2.5 mm to 500 mm / 10% to 30% powder) and moisture content (0% to 10%). These parameters are identical to the information listed in the Bauxite Schedule in Appendix 1 of the IMSBC,<sup>147</sup> which are stated as follow:

**Characteristics**

Angle of repose	Bulk density (kg/m <sup>3</sup> )	Stowage factor (m <sup>3</sup> /t)
Not applicable	1,190 to 1,389	0.72 to 0.84
Size	Class	Group
70% to 90% lumps: 2.5 mm to 500 mm 10% to 30% powder	Not applicable	C

**Hazard**

No special hazards.

This cargo is non-combustible or has a low fire-risk.

Figure 1 – extract from Bauxite Schedule in Appendix 1

However, the declaration was issued on 11<sup>th</sup> December 2014, six days prior to loading, during which the port was hit with heavy rainfall. The cargo was stockpiled on the quayside without any cover, and thus exposed to the elements. Section 4.5.2 of the IMSBC Code states that *'the interval between sampling/testing and loading shall never be more than seven days'*. Nevertheless, the provision

<sup>145</sup> See DSC 17/17 5 October 2012. (IMO Docs)

<sup>146</sup> See Christian Ott. *'Liquefaction Risks from Bauxite Cargoes'* (available on: <http://www.skuld.com/topics/cargo/solid-bulk/cargo-liquefaction/liquefaction-risks-from-bauxite-cargoes/>) [Accessed August 2013].

<sup>147</sup> Bauxite Schedule is fully reproduced in Annex [6].

provides that in the event of significant rain or snow between the time of testing and loading, further checks must be carried out to ensure the cargo is still within the safe moisture content limits. In addition to the extreme rainfall that had hit the port of Kuantan, there were several interruptions during the loading operations due to heavy rain, for which all holds were closed to avoid water ingress. Accordingly, the declaration presented by the shipper was no longer true representative of the cargo, which declared the moisture content between 0% to 10%, whereas in fact it was found to be 21.3%.<sup>148</sup> The *Bulk Jupiter* casualty highlights some major concerns that undermine the effectiveness of the IMSBC Code, which can be described as follow:

(a) The Code's description of bauxite

The fact that a cargo is classed as Group C is the first indication that this cargo is safe, an assumption proved wrong by the *Bulk Jupiter*. The category of the cargo is likely to be the first thing that masters look at when presented with a solid bulk cargo for carriage. A Group C category may be a sign of relief to the master that the risk of liquefaction does not exist. The fact that the master in the *Bulk Jupiter* was interrupting loading operations due to rainfall indicates that he was conscious about the risk of liquefaction, despite bauxite being a Group C cargo. Figure 1 above shows that the 'Hazard section' in the Bauxite Schedule states 'no special hazards', in contrast with the 'Hazard section' in Group A cargoes which flags up the risk of liquefaction, stating that '*the cargo may liquefy if shipped at a moisture content in excess of its TML*' (Transportable Moisture Limit).<sup>149</sup> The shipper may as well be misled by such description when conducting the testing of the cargo, bearing in mind that the required moisture content certificates under section 4.3, and the laboratory test procedures outlined in Appendix 2 of the Code, only apply to Group A cargoes, namely solid bulk cargoes which may liquefy. Therefore, shippers of bauxite are not obliged to provide certificates of tests, and may use unsolicited methods of testing that may not necessarily meet recognised standards. As a result, it is strongly arguable that the IMSBC Code itself has misrepresented the description of bauxite in this instance, and thus neither party should be held responsible.<sup>150</sup> The dilemma, however, is that the Code mandatorily applies to the shipment of solid bulk cargoes, and thus the parties must strictly adhere to its provisions. Failing to comply with the Code would attract liability against the party at fault in accordance with the national law implementing the Code.<sup>151</sup> Although Bauxite remains listed as Group C at the present, pending the outcome of the ongoing research, the IMO

<sup>148</sup> See Report: "M.V Bulk Jupiter" - Official Number 8001956 - by The Commonwealth of the Bahamas, 18<sup>th</sup> August 2015.

<sup>149</sup> See, for example, Sand, Heavy Mineral Schedule in Appendix 1 of the IMSBC Code. (p.276, 2013 edition).

<sup>150</sup> However, Chapter 4 outlines that the duty upon the shipper not to ship dangerous cargo is one of strict liability, and thus the shipper may be found liable notwithstanding the Code's mischief. (discussed further below and in Chapter 4)

<sup>151</sup> See fn.121 above.

issued Circular CCC.1/Circ.2 on 20<sup>th</sup> October 2015 on the possible liquefaction of bauxite warning all concerned parties to exercise caution for shipments of this cargo.<sup>152</sup> Arguably, this latest circular should be taken into account when considering the shippers', as well as masters' who are versed in the bauxite trade, state of knowledge when considering whether these parties have discharged their obligations.<sup>153</sup>

*(b) The IMO's method of categorisation*

It remains questionable whether the IMO is following the right method in categorising solid bulk cargoes in the given categories. Within the IMO, Committees, Sub-Committees, Editorial and Technical Groups, and Working Groups are set up to investigate various issues that emerge in the day to day shipping industry. Each body reports its findings up the hierarchy to the highest relevant Committee, which then makes any necessary amendments to the regulation in question. Member States can participate in any research that is closely connected with its interests, i.e. being a major exporter or importer of the cargo in question, and they can report their own findings at the IMO Committees' conferences.<sup>154</sup> In addition, globally-recognised organisations which represent the interests of different stockholders in the shipping industry, such as: INTERCARGO, BIMCO, the International Association of Classification Societies and the International Group of P&I Clubs, often submit pivotal safety reports to the Maritime Safety Committee (MSC). The MSC is the highest technical body at the IMO that consists of all Member States and considers the development and implementation of safety IMO instruments.<sup>155</sup> The aforementioned organisations, together with Australia, India, Brazil and China, are actively engaged in the solid bulk liquefaction research to promote safe shipping practices in this extremely lucrative trade.<sup>156</sup> In brief terms, the practice is that following a liquefaction incident, concerned Member States,<sup>157</sup> maritime organisations and MSC's purposely-established Working Groups,<sup>158</sup> investigate the casualty and analyse whether new Solid

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<sup>152</sup> Also, see the Bahamas's submissions (CCC 2/5/16) at the second session of the Sub-Committee on Carriage of Cargoes and Containers (CCC) meeting (14 to 18 September 2015) in relation to the loss of the *Bulk Jupiter*.

<sup>153</sup> In other words, did the shipper notify the master of the potential dangerous character of the bauxite to be loaded? Or did the master properly care for the bauxite onboard, knowing its potential dangerous nature to liquefy? These obligations are further discussed in Chapters 3 and 4.

<sup>154</sup> Check the IMO's website for general description of its work and structure, [www.imo.org](http://www.imo.org).

<sup>155</sup> Ibid, <http://www.imo.org/en/About/Pages/Structure.aspx>

<sup>156</sup> For example: see MSC 90/12/3 on 'Bulk carrier casualties caused by cargo liquefaction' submitted by INTERCARGO, ICS, BIMCO, P&I Clubs and IUML; MSC 87/INF.13 on 'Carriage of iron ore fines leading to marine casualties' submitted by India; MSC 89/7/4 'on Measures to improve safe transportation of solid bulk cargo by ships' submitted by China. These submissions are available through IMO Docs.

<sup>157</sup> Concerned Member States may involve the flag of the stricken ship, the State where the casualty occurred, or the State of the crew's nationality.

<sup>158</sup> Such as the newly established Global Bauxite Working Group, which was formed to peer review the industry research on the behaviour of bauxite during carriage.

Bulk Schedules should be added or existing one be amended, including: re-categorising the cargoes under a different Group type.<sup>159</sup> In relation to the IMDG and IMSBC Codes, the MSC has established the Editorial and Technical (E&T) Group which reviews all technical and editorial issues related to draft texts for new or amended provisions proposed by IMO Member States for inclusion in the said Codes.<sup>160</sup>

Therefore, it could be summarised that the IMO's method in categorising solid bulk cargoes is dependent upon, first, the occurrence of a casualty that highlights the danger and, second, the findings of the industry's experts that have been tasked in evaluating the behaviour of the cargo in question during shipment. One could argue that the IMO would not have an alternative method in developing the IMSBC Code, and it is for that reason the Code is considered as a living document, subject to amendments every two years. However, adopting a proactive rather than reactive philosophy may prove more effective in deterring the occurrence of further losses. It is common knowledge that SOLAS was adopted following the loss of the *Titanic*,<sup>161</sup> and the recent loss of the *Costa Concordia* is perhaps what triggered the cruise industry's attention to revisit safety procedures onboard passenger ships.<sup>162</sup> However, not all liquefaction incidents necessarily result in a casualty, provided the master and crew were vigilant to spot its possibility before it turns catastrophic. There is no evidence to suggest whether such incidents are being actively reported to the authorities. If masters were to report unusual behaviour of a cargo during shipment to the relevant authorities, such as the Flag State or the port of loading, such practice could then promptly alert the industry prior to the occurrence of the loss. Masters are bound under Regulation 31 of Chapter V of SOLAS, which is concerned with safety of navigation, to report danger messages to other ships in the vicinity and the competent authorities. Nevertheless, such danger messages are restricted to ice, derelict, tropical storms or any other direct danger to navigation.<sup>163</sup> Thereafter, the informed governments must take all necessary steps to communicate such danger messages to other concerned bodies and other States.<sup>164</sup> If abnormal behaviour of a cargo, which was loaded in accordance with safety regulations

<sup>159</sup> For instance: see E&T 21/5/12 on 'New entries and amendments to existing entries for schedules and/or index entry - Aluminium fluoride' submitted by Italy. (IMO Docs)

<sup>160</sup> Participation in the E&T Group is open to experts in the transport by sea of dangerous goods in packaged form and of solid cargoes carried in bulk, which are drawn from IMO Member States and from interested intergovernmental and non-governmental organizations in consultative status.

(<http://www.imo.org/en/OurWork/Safety/Cargoes/DangerousGoods/Pages/ET-Group.aspx>)

<sup>161</sup> See <http://www.imo.org/en/OurWork/Safety/Regulations/Documents/TITANIC.pdf>

<sup>162</sup> Jane Archer. 'Costa Concordia safety review: 'More changes needed'' (available on <http://www.telegraph.co.uk/travel/cruises/news/Costa-Concordia-safety-review-More-changes-needed/>) [Accessed July 2017]

<sup>163</sup> Regulation 31(1). Full details of the information required in danger messages are listed in regulation 32.

<sup>164</sup> Regulation 31(2).

and subsequently created a hazard onboard a ship, could fall within the categories that must be reported to the relevant authorities. Investigation and amendments to safety regulations could be forthcoming prior to the occurrence of the next liquefaction incident, which would otherwise endanger the safety of all those onboard.

*(c) The shipper’s declaration required*

One of the key obligations required from shippers of solid bulk cargo is the provision of information, as detailed in section 4.2 of the IMSBC Code. Section 4.2.2 specifies what sort of cargo information should be provided, such as: the cargo group, the need for trimming and the likelihood of shifting. Most importantly, however, is section 4.2.2.9 which provides that ‘*additional information in the form of a certificate on the moisture content of the cargo and its transportable moisture limit in the case of a concentrate or other cargo which may liquefy.*’ As previously mentioned, moisture content certificates are only required for Group A cargoes, which entails that the rigid tests procedures outlined in Appendix 2 of the IMSBC Code do not apply to Group C cargoes.<sup>165</sup> Nevertheless, section 4.2.3 provides a declaration form for solid bulk cargo information, in the form of a declaration certificate, to be used by shippers,<sup>166</sup> which provides for details of the Transportable Moisture Limit and Moisture content at shipment, as outlined in Figure 2 below:

<input type="checkbox"/> Group A & B* <input type="checkbox"/> Group A* <input type="checkbox"/> Group B <input type="checkbox"/> Group C  *For cargoes which may liquefy (Group A and Group A and B cargoes)	Transportable Moisture Limit  Moisture content at shipment
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Figure 2 – an abstract from the Form for Cargo Information for Solid Bulk Cargoes

Even when shippers load Group C cargoes, they tend to provide the moisture content information required on the declaration. However, the *Bulk Jupiter* casualty report compared declarations of bauxite that were issued by shippers in other shipments onboard other ships, which revealed that the description of the cargo on all these declarations exactly corresponded to the one listed in the Bauxite Schedule of the Code.<sup>167</sup> Therefore, these declaration certificates presented an identical copy of the

<sup>165</sup> And, indeed, Appendix 2 of the IMSBC Code states that the test procedures are ‘for materials which may liquefy’. Although such methods may nonetheless still be applicable to non-liquefiable cargoes, but why would a shipper incur such additional expenses and delay, where he could revert to any method of testing of his choice.  
<sup>166</sup> The form is reproduced in Annex [7] of this thesis.  
<sup>167</sup> See Figure 1 above.

text as provided for in the Bauxite Schedule, rather than a true reflection of the composition of the bauxite actually loaded. Thus, it follows that other declaration certificates of Group C cargoes could be the same, since all the parties had negated the possibility of liquefaction of the cargo, given its 'safe' categorisation within the Code.

Furthermore, the form states that the declaration is given to the best knowledge and belief of the shipper, in that the declaration certificate can be considered as representative for the cargo to be loaded. 'To the best knowledge and belief' indicates an obligation of due diligence on part of the shippers, and thus if shippers were not aware of the actual moisture content levels of the cargo, provided they have not acted negligently, they would not be liable. This argument however, as outlined in Chapter 4, is rebutted with well-established legal authorities which outline that the shipper's obligation not to ship dangerous cargo is one of 'strict liability' and that their knowledge of their cargoes' dangerous character is irrelevant.<sup>168</sup> Chapter 4 further outlines why English Courts have favoured the strict liability approach, as it tends to be the correct approach in deterring shippers from loading cargoes without any regard to the safety of life at sea and the marine environment. However, the current situation with shipments of bauxite is a live example of the harshness of adopting the 'strict liability' rule against shippers. In cases where shippers deliberately conceal, or negligently fail to apprehend, what could be an obvious dangerous character of their cargoes, then it is no doubt that they must be liable. But, having followed the provisions of the IMSBC Code, and since no liquefaction of bauxite had been reported prior to the loss of *the Bulk Jupiter*, one may question whether it would be fair to hold the shipper of bauxite onbaord *the Bulk Jupiter* liable for its liquefaction.<sup>169</sup> That shipper was unfortunately the scapegoat which alerted the industry about the possibility of bauxite liquefaction, and the next amendment to the IMSBC Code is anticipated to introduce a Group A Bauxite Schedule. Nevertheless, notwithstanding the Code's mischief, the rationale for holding shippers, or alternatively the party presenting the cargo for shipment, liable to bear such risks may be justified because they are better placed to know the properties of their cargoes, compared with any other party in the chain.<sup>170</sup>

<sup>168</sup> *Brass v Mainland* (1856) 119 E.R. 940; *The Giannis NK* [1998] Lloyd's Rep. 337. See 4.2 Duty not to ship dangerous cargo (Chapter 4).

<sup>169</sup> See *The Erwin Schroder* [1969] 1 Lloyd's Rep. 370 (Canadian case), where the shipper of copper concentrate was found liable despite the relevant regulation describing it as a safe cargo. (Discussed in 4.2.2 Are solid bulk cargoes 'dangerous'? Chapter 4).

<sup>170</sup> See *Pierce v Winsor* (1861) 2 Sprague 35. (US decision), commenting on the rule in *Brass v Maitland* (1856) 6 El & BL 470; 119 E.R. 940. (discussed in chapter 4). The analysis for holding shippers strictly liable for shipment of dangerous cargo, irrespective of their knowledge, is addressed in 4.3(b) The shipper's knowledge of his cargo's dangerous character.

### 2.7.2 Unreliable test results

The unreliability of the test methods identified in the IMSBC Code has been touched upon above.<sup>171</sup> The Flow Table Test (FTT), for example, which requires a sample of the cargo in the form of a trimmed cone to be placed on a flow table, raised and dropped repeatedly and quickly for several times, has been criticised as being unreliable because it heavily relies, subjectively, on the person conducting the test.<sup>172</sup> The FTT and the Proctor/Fagerberg Test were also criticised for delivering different results for moisture content and Transportable Moisture Limit when using both tests on the same sample.<sup>173</sup> In addition, the Penetration Test and the Proctor/Fagerberg Test, which are more complex and require special expertise, are not believed to be in use in the main countries of shipment, namely India, Indonesia and the Philippines.<sup>174</sup> Finally, the ‘can test’, discussed above,<sup>175</sup> must not be conclusive and can only be used as an indication for whether further lab tests should be required or not. Therefore, there remain major areas of development required from the IMO to further improve the IMSBC Code. Test methods need to be developed in order to accurately deliver precise and reliable results for the TML and moisture content present in the cargo. This will enhance the parties’ confidence in the results to be truly representative of the cargo and immensely contribute to the safe shipment of solid bulk goods.<sup>176</sup>

Additionally, the test procedures outlined in the IMSBC Code only apply to Group A cargoes.<sup>177</sup> For cargoes not listed in the Code, the competent authorities of the loading and discharging ports, together with the Flag State, shall advise the suitable conditions for the safe carriage of such goods.<sup>178</sup> Insofar as Group C cargoes are concerned, there are no prescribed

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<sup>171</sup> Mentioned above in 2.5.3 Cargo requirements: sampling, tests and certificates.

<sup>172</sup> The Standard Club. ‘Bulk Cargo Liquefaction (Iron Ore Fines and Nickel Ore)’ (available on: <http://www.standard-club.com/media/23989/StandardCargoLiquefactionFeb2011.pdf>) [Accessed March 2016] (Standard Cargo issue - February 2011).

<sup>173</sup> See Rose, T. (2013). *The Liquefaction of Solid Bulk Cargoes During Seaborne Transportation*. Thesis submitted to the University of Oxford. According to this study, it found that ‘Other investigations have shown that the TML Test Methods may each give different TML results when testing the same material. The present study found that FTT gave a lower result than the PFT, which was consistent with findings by other researchers.’ (p.152).

<sup>174</sup> The Standard Club. ‘Liquefaction of Mineral Ores and Minerals Concentrates’ (available on: <http://www.standard-club.com/media/23989/StandardCargoLiquefactionFeb2011.pdf>) [Accessed March 2016] (Loss Prevention issue - April 2015).

<sup>175</sup> In 2.5.3 above.

<sup>176</sup> The main concerns regarding the effectiveness of the test methods were summarized as follow: “(a) a given TML Test Method gives highly variable results when performing multiple tests on the same sample of material, particularly amongst different laboratories; (b) the different methods give different TML results when testing the same cargo sample; (c) there is no indication of what is a ‘correct’ TML result (i.e. there is no knowledge of how accurately the TML represents the moisture at which liquefaction may occur during a voyage).” (ibid, fn.171, p.147).

<sup>177</sup> See section 4.3 of the IMSBC Code.

<sup>178</sup> Section 1.3.

procedures for testing Group C materials, leaving such a procedure to be determined by the shipper or any laboratory of the shipper's choice. As outlined above, declaration certificates of Group C cargoes appear to restate the exact same context, with regards to moisture content and other characteristics of the cargo, which are presented in the individual schedules of the Code. Therefore, the declaration certificates of Group C cargoes often do not accurately describe the characteristics of the cargo to be loaded. In circular MSC 89/7/4,<sup>179</sup> China submitted a proposal to change the requirement for cargo documentation to be supplied by independent entities directly to the master, instead of being provided by the shippers. Under the current regime, masters are often doubtful as to the accuracy of the shipping documents presented by shippers, yet they are placed under extreme pressure to accept the cargo, as presented, or end up in legal disputes. In light of the catastrophic consequences following liquefaction incidents, contractual clauses have been drafted to entitle shipowners to use independent surveyor to test the safety of the cargo.<sup>180</sup> However, the Chinese proposal is worth noting since adopting the use of independent surveyor regime could perhaps avoid the unnecessary delay that often occur at the port of loading when the parties, first, dispute the accuracy of the cargo documentations, second, wait for samples to be shipped to reliable laboratories overseas and, third, receive the test results. All this delay unnecessarily results in additional expenses and loss of time for which legal disputes amongst the parties consequently ensue.<sup>181</sup> Nevertheless, in light of the deficiencies outlined in the tests set out in the IMSBC Code, the laboratory may be required to go beyond the Code's test requirements and conduct other reliable tests that could deliver accurate results in order to ensure the safety of the cargo.

### 2.7.3 Improper implementation by port authorities

The practical issues to ensure compliance with the Code were discussed in Chapter 1 of this thesis which outlined, amongst other things, shippers' unwillingness to allow independent surveyors, grant access to stockpiles, accurately describe the cargo in the shipping documents or provide reliable test results of the cargo's moisture content and TML.<sup>182</sup> However, this should not entail that all liquefaction incidents were the result of such shippers' practices, nor can it entail that such causalities were always due to shipowners' failure to implement the Code's cargo handling

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<sup>179</sup> Submitted by China in 2011 'on Measures to improve safe transportation of solid bulk cargo by ships'. These submissions are available through IMO Docs.

<sup>180</sup> See Appendices 1 and 2, and 4.5.5 Solid bulk specific clauses in Chapter 4 below.

<sup>181</sup> There are no reports which explain why the proposal was not adopted by the IMO. China is one of the main importers of solid bulk cargoes in the world. In addition, the 2010 liquefaction incidents resulted in the loss of 45 Chinese crewmembers, and thus China's interest in the safe carriage of solid bulk cargoes is unsurprising. (Ibid, fn.177)

<sup>182</sup> The International Chamber of Shipping. 'Cargo Liquefaction' (available on: [http://www.ics-shipping.org/key-issues/all-key-issues-\(full-list\)/cargo-liquefaction](http://www.ics-shipping.org/key-issues/all-key-issues-(full-list)/cargo-liquefaction)) [Accessed November 2013].

obligations properly. Recent liquefaction incidents involved well-known shippers of solid bulk materials that were loaded onboard quality-built vessels, and such parties have strict procedures in place to ensure compliance with safety regulations. In January 2015, the *Bulk Jupiter* was lost following the liquefaction of bauxite despite, as her owners alleged, strictly implementing the IMSBC Code which categorises the cargo under Group C.<sup>183</sup> Similarly, the *Anna Bo* experienced the liquefaction of nickel ore in 2013, but her owners claimed that they have followed rigorous testing in accordance with the IMSBC Code.<sup>184</sup> Therefore, it is not always the fault of the parties that result in the liquefaction of the cargoes onboard, whereby the IMSBC Code provisions have been proved ineffective in the carriage of some solid bulk cargoes.

Nevertheless, there seems to be an oversight about one party, in particular, which could account for most of the blame. Shippers, charterers and even carriers would not have poorly applied the IMSBC Code if the relevant authorities were not in fact turning a blind eye to its implementation in the first place. Although it is the shipper's responsibility to carry out procedures for sampling, testing and controlling the moisture content of the cargo, to ensure it is below the Transportable Moisture Limit, such procedures must be approved and their implementation checked by the port authority, which should in turn issue a document to the master confirming the safety of the cargo.<sup>185</sup> Although port authority's failure to verify shipping documents does not justify shippers to fall short of complying with safety regulations, it is the Member States, through their port authorities, who are tasked with the enforcement of the regulations they sign to, and thus they must comply with their undertaking to ensure proper implementation of IMO regulations. The heart of the liquefaction issue lies on forged certificates and inaccurate declarations issued by shippers, yet such documents must have been, in principle, approved and investigated by the terminal authorities. However, there is often high pressure exercised by port terminals themselves to load as quickly as possible with high loading rates overstressing the vessel's structure and leaving the cargo untrimmed before sailing.<sup>186</sup> Shipments from Sierra Leone, for instance, were reported to have poor infrastructure at load ports

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<sup>183</sup> Gearbulk. 'Bulk Jupiter Update 14 January 2015' (available on: <http://www.gearbulk.com/news-media/news/2015/bulk-jupiter-update-14-january-2015/>) [Accessed February 2015].

<sup>184</sup> Adam Corbett. 'Nickel ore liquefaction strikes again despite rigorous testing' (available on: <http://www.tradewindsnews.com/weekly/329476/nickel-ore-liquefaction-strikes-again-despite-rigorous-testing>) [Accessed June 2014].

<sup>185</sup> Section 4.3.3 IMSBC Code. Terminal authorities must also follow the BLU Code in support of their obligations under the IMSBC Code (discussed above).

<sup>186</sup> Stone, J. (2011). *Dry Bulk Issues & Liabilities*. Paper delivered at the Dry Bulk Cargo Issues Conference, London 30 March.

with lack of facilities to discharge cargo once loaded, if found in wet condition.<sup>187</sup> In addition, the unavailability of independent laboratories to be used by the owners at some loading ports is another factor contributing to the poor implementation of the Code provisions. In Indonesia and the Philippines, it is reported that the required tests to determine the moisture content levels present in the cargo are usually conducted by the mines' owners themselves. However, they may not necessarily have appropriate facilities and reportedly use their own testing methodology rather than following the IMSBC Code procedures stipulated in Appendix 2,<sup>188</sup> save for their commercial interests to sell the cargo. INTERCARGO<sup>189</sup> has pressed upon States, mainly in the main countries of shipment, to fulfil their obligations under the Code following the loss of the *Bulk Jupiter*, whereby its Secretary General stated that:

*"States have an obligation to ensure that the condition of cargoes they permit to be loaded in their ports are safe for carriage. There is no doubt that if this obligation was strictly adhered to by all port States through consistent implementation by Competent Authorities, the risk to bulk shipping would be greatly reduced"*<sup>190</sup>

The outcome of such terminal authorities' practices significantly results in the shippers falling short of complying with their legal obligations under the IMSBC Code. After the sinking of two bulkers in 2009, namely *Asian Forest* and *Black Rose*, carrying iron ore fines from India during the monsoon season, the Indian Directorate General of Shipping issued Notice No.9 '*Safe loading, stowage, carriage and discharging of iron ore fines on ships from Indian Ports in fair and foul season*'.<sup>191</sup> The Notice emphasises on the responsibilities of all those involved in the shipping of iron ore fines to be in compliance with safety regulations, and Indian ports are therefore required to establish measures aimed at controlling the moisture content of the cargo, and closely supervise the loading operations to ensure compliance with the Code.<sup>192</sup> Similarly, the Indonesian government

<sup>187</sup> The Standard Club. '*Liquefaction of Mineral Ores and Minerals Concentrates*' (available on: <http://www.standard-club.com/media/23989/StandardCargoLiquefactionFeb2011.pdf>) [Accessed March 2016] (Loss Prevention issue - April 2015).

<sup>188</sup> The Standard Club. '*Bulk Cargo Liquefaction (Iron Ore Fines and Nickel Ore)*' (available on: <http://www.standard-club.com/media/23989/StandardCargoLiquefactionFeb2011.pdf>) [Accessed March 2016] (Standard Cargo issue - February 2011).

<sup>189</sup> The International Association of Dry Cargo Shipowners, which was established in 1980 with the objective of giving a voice to shipowners, managers and operators of dry cargo vessels and represent better this shipping sector. See <https://www.intercargo.org/en/>

<sup>190</sup> INTERCARGO. '*Intercargo Calls Again for Continued Awareness and Vigilance to Ensure the Safe Carriage of Bulk Cargoes*' (available on: [https://www.intercargo.org/en/?option=com\\_attachments&task=download&id=6](https://www.intercargo.org/en/?option=com_attachments&task=download&id=6)) [Accessed July 2017].

<sup>191</sup> The Notice can be found on the Indian Directorate General of Shipping website <http://www.dgshipping.gov.in/writereaddata/ShippingNotices/201307150435180146484M10.pdf>

<sup>192</sup> For instance: Indian ports must cover the stockpiles of iron ore fines cargo likely to be adversely affected by weather conditions, provide proper drainage system for water from the stock piles of iron ore fines cargo lying in the open areas of its premises, and ensure adequate number of approved laboratory test houses availability within the port premises.

executed an export ban on unprocessed ore from its ports and required mining companies to process all ore minerals before any shipment takes place.<sup>193</sup> Although the move was not aimed at tackling liquefaction incidents but rather achieve economic growth,<sup>194</sup> the moisture content of processed mineral concentrates is more uniform and pose no high risk of liquefaction, thus the ban could, albeit indirectly, contribute to the safe shipment of solid bulk cargoes.<sup>195</sup> As a result, pressure must be exercised upon States to ensure rigid enforcement of safety regulations, though of course the IMO lacks such powers.<sup>196</sup> It is hoped that the IMO Member State Audit Scheme, which was made mandatory in January 2016, could achieve its goal enhancing the performance of those nations with poor enforcement records. Whereby, the Scheme would entitle the IMO to assess the effectiveness of its Member States with the implementation of the maritime mandatory instruments.<sup>197</sup> Under the Audit Scheme, the IMO will set up internationally recognised standards for all Member States to follow in order to ensure proper implementation of mandatory instruments. If a State falls short of such standards, the IMO may then carry out an audit on that State to enhance its ability to meet the established standards and fulfil its obligations.<sup>198</sup>

#### 2.7.4 Unclear effect of the 'mandatory' application

As previously mentioned, the IMSBC Code enjoys mandatory application under Chapters VI and VII of the SOLAS Convention.<sup>199</sup> However, the change from 'guidelines only' to 'mandatory' application of the IMSBC Code does not provide any clarity as for the consequences of breaching its provisions. The Code does not indicate whether a party must strictly comply with the 'mandatory' obligations or simply exercise due diligence to ensure compliance with the provision in question. Whilst the former concept holds the party responsible for the breach irrespective of fault, the latter may pardon the party if it exercised due diligence to meet its obligations.<sup>200</sup> English legal authorities

<sup>193</sup> See the International Centre for Trade and Sustainable Development. *'Indonesia Enact Mineral Export Ban'* (available on: <http://www.ictsd.org/bridges-news/bridges/news/indonesia-enacts-mineral-export-ban>) [Accessed March 2016].

<sup>194</sup> i.e. encouraging investment in refining facilities. The government also issued heavy export duties reaching up to 60% on some mineral concentrates by July 2016. For uncertainties surrounding the government's plan, see Sacha Winzenried. *'Export ban on unprocessed minerals effective 12 January 2014 – three-year reprieve for some, but uncertainty remains'* (available on: [https://www.pwc.com/id/en/energy-utilities-mining-newsflash/assets/eumnewsflash\\_50.pdf](https://www.pwc.com/id/en/energy-utilities-mining-newsflash/assets/eumnewsflash_50.pdf)) [Accessed March 2016].

<sup>195</sup> However, it has been reported that the Indonesian government has relaxed the stringent export requirements for nickel ore and bauxite cargoes (discussed in Chapter 4 below).

<sup>196</sup> For fear of interfering with the sovereignty of Member States.

<sup>197</sup> Liejun, Y. (2013). *Implications and impacts of making mandatory the voluntary IMO member state audit scheme: from legal and practical perspectives*. Thesis submitted to the World Maritime University.

<sup>198</sup> See The IMO, *'IMO Member State Audit Scheme'* (available on: <http://www.imo.org/en/OurWork/MSAS/Pages/AuditScheme.aspx>) [Accessed March 2016]

<sup>199</sup> By resolution MSC.269(85).

<sup>200</sup> Discussed further in Chapter 4.

suggest that compliance with IMO codes 'is not necessarily determinative of the issue of due diligence',<sup>201</sup> and it was submitted that SOLAS and IMDG Codes '*are not to be read as parts of a complex mesh of legislation*' and for their meaning to be determined '*as practical working guides for the use of seamen exercising ordinary prudence*'.<sup>202</sup> However, this outcome was decided in 2000, four years prior to the IMDG Code becoming mandatory. Therefore, it is now uncertain whether such codes could still be read as 'working guides' to determine seamen prudence before English Courts, or whether failure to comply with their provisions would render the defaulting party strictly liable for any loss resulting therefrom.<sup>203</sup> Other jurisdictions may interpret regulatory instruments differently, for instance: Pottier J. in *the Erwin Schroder*, a Canadian case, found the Canadian Concentrate Code as an inadequate measure for the protection of ships against the liquefaction of copper concentrate, despite it being applicable under the Canadian Shipping Act.<sup>204</sup> Although the shipowner in *the Erwin Schroder* failed to comply with some provisions of the Code, Pottier J. nonetheless relied on a chemist expert who evidently proved that the liquefaction would have occurred, irrespective of compliance with the Code. Such examples defy the purpose of internationally-recognised regulations which aim to harmonise safe practices amongst the shipping industry at an international level, and provide certainty for the parties involved. As a result, this could encourage forum shopping where a party may insist on a jurisdiction which is known to apply less stringent interpretation of international instruments, for instance: in *The Happy Fellow*<sup>205</sup>, although England and France applied the same Convention on Limitation of Liability for Maritime Claims 1976, the Claimants favoured to pursue the limitation action before the French Court, because it was thought it would be easier to break the limits, as opposed to the High Court in England.<sup>206</sup>

This 'compulsory' application of the IMSBC Code means the statutory penalties prescribed in national laws to give effect to the Code apply whenever a breach of its provisions has occurred.<sup>207</sup> However, the IMSBC Code is still under development and, as discussed above, many incidents

<sup>201</sup> *The Kapitan Sakharov* [2000] 2 Lloyd's Law Rep. 255. This case is further discussed in 4.6 of Chapter 4 below.

<sup>202</sup> *Ibid*, *The Kapitan Sakharov* p.267-268. (Mr Flaux)

<sup>203</sup> This is not to say that *The Kapitan Sakharov* would have been decided differently if the IMDG Code was mandatory at the time the judgment was made. The decision was turned out on matters of causation, so the owner's failure to load the containers in accordance with the IMDG Code had caused the explosion resulting in the sinking of the vessel. However, if the Code did apply mandatorily, would causation still be an issue to be analysed or would failure to comply with its provisions be sufficient to find owners strictly liable, irrespective of any breach or contributory negligence on part of the shippers?

<sup>204</sup> [1969] 1 Lloyd's Rep. 370.

<sup>205</sup> [1998] 1 Lloyd's Rep. 13.

<sup>206</sup> Whereby, the French courts adopts an objective approach in interpreting the Limitation Convention, whereas English courts take a subjective approach.

<sup>207</sup> See fn.121.

involving solid bulk cargoes have raised some serious concerns regarding its effectiveness, such as the incidents that involved liquefaction of Group C cargoes. Yet, in some of these incidents, the parties cannot be found in breach of the Code because they had in fact complied with its provisions, and Courts would fall back to its national rules to answer the question of liability. In this context, where the Code considers the cargo to be 'safe' but common law says it is 'dangerous', English Courts would apply its 'strict approach' for shipment of dangerous cargo, and hold a party liable regardless of the Code's ineffectiveness.<sup>208</sup> The best way to avoid this uncertainty is to identify the party responsible to ensure compliance with the IMSBC Code provisions in well-drafted contractual clauses,<sup>209</sup> and that such party to bear any risks that may result from the Code's ineffectiveness. Such clauses must, further, identify the party responsible to bear the costs of sampling and testing the cargo to be loaded and, second, expressly provide for the use of independent surveyors. Third, the clause must grant the master an absolute discretion to determine the safety of the cargo and the appropriate measures for its loading and carriage, without any pressure from any party. Finally, the clause must identify the party liable for all the consequences of any breach thereof.

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<sup>208</sup> This application of the rule is analysed in Chapter 4. However, this does not entail that shippers of solid bulk cargoes would always be found liable under English law, whereby a master who consents to ship the cargo with full knowledge of its dangerous character may relieve the shipper from such liability.

<sup>209</sup> See 4.5.1 to 4.5.5 of Chapter 4 below, which give examples of such clauses.

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**Chapter Three:**  
**Rights and liabilities of the Carrier**

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## CHAPTER 3: Rights and Liabilities of the Carrier

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### 3.1 Introduction

In general terms, carriers are often responsible for some of the most fundamental obligations that are important to any contract of affreightment, such as: seaworthiness of the ship and care for cargo. The carrier, in cases where the Hague/Hague-Visby Rules apply, is obliged to provide a seaworthy ship *'before and at the beginning of the voyage'* and to care for the goods onboard the ship during transit.<sup>1</sup> Similarly, the common law also obliges the carrier to provide a seaworthy vessel,<sup>2</sup> and to discharge

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<sup>1</sup> Article III Rules 1 and 2. The Hamburg and Rotterdam Rules also require such obligations but their positions are not covered under this thesis.

<sup>2</sup> *Phillips v Clark* (1857)140 E.R. 372. Discussed further below 3.3.1 Nature and scope of the obligation.

the goods in the same condition as they were delivered to him.<sup>3</sup> Failure to meet these obligations could hold the carrier liable to other parties. In relation to the carriage of solid bulk cargoes, when liquefaction occurs the carrier would often claim that the cargo loaded was dangerous and that the shipper/charterer failed to warn him about such character. In contrast, shippers would argue that the vessel was unseaworthy and/or the carrier failed to care for the solid bulk cargo in question during transit. The duties upon the carrier to provide a seaworthy ship and care for the cargo are considered in this chapter.

### 3.2 Who is the carrier?

It is crucially important for the shippers, sub-charterers and third parties to clearly identify who is the carrier they are dealing with,<sup>4</sup> whereby the identity of the carrier may not be crystal clear in the shipping documents.<sup>5</sup> Since the shipping documents are often signed by the master, the general position is that he is signing such documents on behalf of his employer, who may not be easily ascertained. In *The Starsin*,<sup>6</sup> the master signed the bill of lading on which, at its front page, the words 'as agent for' the charterer were printed, but the back of the bill contained, in very small print, a standard identity of carrier clause naming the owners as carriers. The Court of Appeal found the document to be a shipowner's bill making him the contractual carrier and, therefore, entitling the cargo owners to sue him for recoverable losses in this case.<sup>7</sup> The House of Lords, however, overruled that decision and held that the court's task when construing a commercial document is to give effect to the intentions of the contracting parties,<sup>8</sup> following Lord Halsbury's rule in *Glynn v Margetson & Co.*<sup>9</sup> in that '*a business sense will be given to business documents*' in the way which businessmen would interpret them in the course of their ordinary dealings.<sup>10</sup> Since the parties clearly intended to hold the charterer liable as carrier, by reason of the master's signature being expressly made on behalf of charterers,<sup>11</sup> the owners were not liable.<sup>12</sup>

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<sup>3</sup> *Coggs v Bernard* (1703) 2 Ld Raym 909. See below 3.4.2 The common law of bailment.

<sup>4</sup> In other terms: the performing carrier, which could be either the head owners or the despondent owners.

<sup>5</sup> For example, see *Baumwoll v Furness* [1892] 1 Q.B. 253, where the charterer was found to be the carrier, despite the fact that the plaintiffs had no knowledge that the ship was under charter. In *The Rewia* [1991] 1 Lloyd's Rep. 325, it was established that a bill of lading signed for the master cannot be a charterer's bill unless the contract was made with the charterers alone, and the person signing the bill has an authority to sign on behalf of the charterers.

<sup>6</sup> [2003] 1 Lloyd's Rep. 571.

<sup>7</sup> The loss involved parcels of timber and plywood which were deteriorated during the voyage due to negligent stowage.

<sup>8</sup> *Ibid*, p.577. (per Lord Bingham).

<sup>9</sup> [1893] A.C. 351.

<sup>10</sup> *Ibid*, p.359.

<sup>11</sup> *Ibid*, Lord Steyn stated that a reasonable reader of the bill would give predominant effect to words printed on the face of the bill, rather than to those standard provisions printed on the reverse side of the document. (at p.583).

Article I(a) of the Hague-Visby Rules defines ‘carrier’ as to include ‘*the owner or the charterer who enters into a contract of carriage with a shipper.*’<sup>13</sup> The vital importance for identifying the carrier, from shippers’ and cargo owners’ perspective,<sup>14</sup> is that any claim will be brought against the right person in the right jurisdiction within the applicable time limit.<sup>15</sup> Whereas, in the carriage of solid bulk cargoes, identifying the carrier would determine the actual party who may suffer the loss by reason of the cargo’s liquefaction and who would have the contractual right to claim damages from the shipper of the dangerous cargo that caused the loss of or damage to the vessel.

### 3.3 Duty to provide a seaworthy ship

It is generally an established principle that the carrier’s obligation to provide a seaworthy ship exists in every contract for the carriage of goods by sea,<sup>16</sup> but there are some cases in which the obligation has been excluded or constrained.<sup>17</sup> Field J. in *Kopotoff v Wilson*,<sup>18</sup> defined a seaworthy ship as one ‘*that is fit to meet and undergo the perils of the sea and other incidental risks to which she must of necessity be exposed in the course of the voyage.*’<sup>19</sup> However, the carrier is not expected to provide a faultless ship but one that is reasonably suitable for the intended voyage.<sup>20</sup> A vessel will be found unseaworthy, as stated in *The Arianna*, if:

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<sup>12</sup> However, there is a line of authorities which involved conflicting indicators on the bill of lading as to the identity of the carrier, and/or a contradiction between the carrier named in the bill of lading and a provision in the charterparty which expressly identifies a different party as the carrier. See, for example, *The Venezuela* [1980] 1 Lloyd’s Rep. 393 and *The Ines* [1995] 2 Lloyd’s Rep. 144. Following these authorities, the Court will consider each case on its own facts based on the indicators and/or statements on the bills of lading, i.e. a printed designation of a party ‘as carrier’ or a demise clause, rather than only rely on the form of the signature on the bill. See Aikens, R. et al. (2015). *Bills of Lading* Ch.7(D).

<sup>13</sup> ‘Contract of carriage’ is defined in Article I(b).

<sup>14</sup> See Rooth, T., Woolhouse, S., ‘Who is the carrier?’ (2004), 18(8), *Maritime Risk International* 17-18.

<sup>15</sup> Whereby the Hague-Visby Rules give one year time bar under Article III Rule 6, otherwise the Limitation Act 1980 gives 6 years, unless there is a contractual term to the contrary.

<sup>16</sup> Lord Ellenborough C.J. in *Lyon v Mells* (1804) 5 East 428.

<sup>17</sup> The obligation was excluded in *The Irbenskiy Proliv* [2005] 1 Lloyd’s Rep. 383, where a bill of lading excluded liability for damages or loss of any kind resulting from unseaworthiness (whether or not due diligence shall have been exercised to make the vessel seaworthy). For an example in which the obligation was limited, see Clause 2 of the Gencon charterparty form (for its interpretation, see *The Dominator* [1960] 1 Lloyd’s Rep. 117).

<sup>18</sup> (1876) 1 QBD 377. The case involved an action to recover damages for the loss of iron armour-plates which were lost when the vessel encountered rough weather. It was held that the shipowner, in absence of any agreement to the contrary, impliedly and necessarily held to warrant that the ship is in a condition to perform the intended voyage.

<sup>19</sup> *Ibid*, p.380.

<sup>20</sup> See Kilkenny DJ in the U.S. case *President of India v West Coast Steamship Co* [1963] 2 Lloyd’s Rep. 278. pp.280-281. In this case, the vessel, not equipped with radar or loran, was grounded on a reef in the Sulu Sea, which subsequently allowed water through her hull damaging the cargo. Cargo owners claimed the vessel was unseaworthy for failure to have the radar or loran when sailing in that region. The Court held that the employment of radar or loran on tramp steamships was not so essential that their absence would render the vessel unseaworthy.

*“there is something about it which endangers the safety of the vessel or its cargo or which might cause significant damage to its cargo or which renders it legally or practically impossible for the vessel to go to sea or to load or unload its cargo.”*<sup>21</sup>

The test is, therefore, said to be objective in that ‘a vessel must have that degree of fitness which an ordinary careful and prudent owner would require his vessel to have ... having regard to all the probable circumstances of [her voyage].’<sup>22</sup> The undertaking of seaworthiness is not only limited to the physical state of the vessel, but it also extends to the competency of her masters and crew, and the adequacy of her equipment and stores.<sup>23</sup> Therefore, structural fracture,<sup>24</sup> defective engine,<sup>25</sup> faulty gear<sup>26</sup> and contaminated holds<sup>27</sup> had all rendered ships unseaworthy in past cases. In *The Madeleine*<sup>28</sup> and in *Golden Fleece Maritime Inc. v St Shipping & Transport Corp.*<sup>29</sup>, the vessels were even found unseaworthy due to inadequate documentations that were necessary for the voyages in question.<sup>30</sup> It was held in *The Derby* that vessels must have aboard all the necessary documents which are required by the law of the vessel’s flag and the laws, regulations or lawful administrative practices applicable at the vessel’s port of call.<sup>31</sup> Consequently, the obligation carries twofold undertakings, one that the ship is seaworthy in the sense of properly manned and equipped to meet ordinary perils during the voyage and, two, that it is cargoworthy in the sense that it is fit to receive, carry and preserve the intended cargo.<sup>32</sup>

<sup>21</sup> [1987] 2 Lloyd’s Rep. 376. p.389. (per Webster J.)

<sup>22</sup> Channel J. in *McFadden v Blue Line Star* [1905] 1 KB 697. p.706.

<sup>23</sup> In *The Framlington Court* [1934] AMC 272. p.277, it was ruled that ‘the ship must be staunch and strong and well equipped for the intended voyage. And she must also be provided with a crew, adequate in number and competent for the voyage ... and have a competent and skilled master of sound judgment and discretion.’ Also, the extent of the obligation under the Hague-Visby Rules is identical (see Article III Rule 1).

<sup>24</sup> *The Toledo* [1995] 1 Lloyd’s Rep. 40.

<sup>25</sup> *Hong Kong Fir Shipping Co v Kawasaki* [1962] 2 QB 26; *The Amstelslot* [1963] 2 Lloyd’s Rep. 223.

<sup>26</sup> *The Theodegmon* [1990] 1 Lloyd’s Rep. 52.

<sup>27</sup> *Tattersall v National Steamship Co* (1884) 12 QBD 297; *The Tres Flores* [1973] 2 Lloyd’s Rep. 247.

<sup>28</sup> [1967] 2 Lloyd’s Rep. 224.

<sup>29</sup> [2008] 2 Lloyd’s Rep. 119.

<sup>30</sup> In *The Madeleine*, the port authority ordered fumigation of the vessel and until such fumigation was effected and the port health authority certificate was issued, the vessel could not trade under the charterparty due to unseaworthiness. In *Golden Fleece Maritime*, the charter required the vessel to have onboard the documents ‘required from time to time’ by any applicable law and to comply with all applicable conventions. During the charter, new regulations came into force under the MARPOL Convention (that fuel oil cargoes can only be carried in double-hulled vessels) which subsequently made the single-hulled vessel non-eligible to perform the charter service. Failure to have the documents that the vessel was able to carry fuel oil under the new regulations rendered her unseaworthy.

<sup>31</sup> [1985] 2 Lloyd’s Rep. 325. p.331. Here, the vessel did not possess an ITF Blue Card (the International Transport Workers’ Federation – an international union representing seafarers) which concerns some extra-legal requirements about the crew. Held, such a document did not fall within a class of document that was necessary to render a vessel seaworthy.

<sup>32</sup> *Lyon v Mells* (1804) 5 East 428; *Elder Dempster & Co. v Paterson Zochonis* [1924] A.C. 522.

### 3.3.1 Nature and scope of the obligation

At common law the seaworthiness undertaking is absolute, a breach of which holds the carrier liable without the need for the determination of fault.<sup>33</sup> In other terms, the carrier is strictly liable irrespective of his knowledge or conduct in the event of breach.<sup>34</sup> However, if the carriage contract is governed by the Hague-Visby Rules, the degree of compliance with the obligation is lessened to the exercise of due diligence.<sup>35</sup> As a result, the carrier must exercise 'due diligence' to provide a seaworthy ship,<sup>36</sup> and if he meets that standard he is discharged from liability even if the vessel is in fact unseaworthy.<sup>37</sup> Although the Hague-Visby Rules' seaworthiness obligation requires a lesser degree of compliance, as compared to common law, the Rules prevent any attempt by carriers to exclude their liability to provide a seaworthy ship, whereby Article III Rule 8 nullifies any clause and/or attempt by the carrier to exclude or limit their liability for any of the obligations enshrined in the Rules.<sup>38</sup> In contrast, the common law seaworthiness obligation could be expressly excluded between the parties.<sup>39</sup> Whether due diligence was exercised is a question of fact depends on the circumstances of each individual case. Lord Reid in *The Amstelslot*,<sup>40</sup> ruled that '*the question always is whether a reasonable man in the shoes of the [shipowner], with the skill and knowledge which the [shipowner] has or ought to have had, would have taken ... extra precautions.*'<sup>41</sup> In practice, the find of 'due diligence' may be determined by reference to the nature of the vessel, the owners' knowledge at the time, or compliance with any applicable regulations.<sup>42</sup> Lord Auld J. in *The Kapitan Sakharov* stated that the test is objective '*to be measured by the standards of a reasonable shipowner, taking into account international standards and the particular circumstances of the problem in hand.*'<sup>43</sup>

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<sup>33</sup> See *Phillips v Clark* (1857) 140 E.R. 372; *Steel v State Line Steamship Co.* (1877) 3 App. Cas. 72. Also, see Colinvaux, R. *Carver Carriage by Sea* (1982) Vol. 1. p.109. Unless there is a broken chain of causation.

<sup>34</sup> Except where the obligation has been very clearly excluded: *The Irbenskiy Proliv* [2005] 1 Lloyd's Rep. 383 (see fn.13).

<sup>35</sup> Article III Rule 1. For the seaworthiness obligation under the Rules, see Girvin, S. (2011). *Carriage of Goods by Sea*. pp.421-429.

<sup>36</sup> The exercise of 'due diligence' means no more than the exercise of reasonable care and skill, and that lack of it amounts to negligence, see *The Fjord Wind* [2000] 2 Lloyd's Rep. 191. p.200. Also, see Ship Inspection. '*Due diligence*' (available on <http://www.shipinspection.eu/index.php/component/k2/item/333-due-diligence>) Accessed February 2015.

<sup>37</sup> *The Amstelslot* [1963] 2 Lloyd's Rep. 223.

<sup>38</sup> See *The Morviken* [1982] 1 Lloyd's Rep. 325.

<sup>39</sup> *The Irbenskiy Proliv* [2005] 1 Lloyd's Rep. 383 (see fn.13). Note the Hague-Visby Rules were not applicable in this case.

<sup>40</sup> [1963] 2 Lloyd's Rep. 223. p.230.

<sup>41</sup> In this case, a fatigue crack in the main engine was found in the vessel from an unknown origin, and the question was whether the failure which caused the crack could have been discovered by the exercise of due diligence.

<sup>42</sup> Aikens, R. Lord, R. Bools, M. (2015). *Bills of Lading*. para.10.135. However, compliance with the codes is not necessarily determinative of the issue of due diligence, see *The Kapitan Sakharov* [2000] 2 Lloyd's Rep. 255. p.268.

<sup>43</sup> [2000] 2 Lloyd's Rep. 255. p.266.

### (a) Transfer of responsibility

The obligation for the provision of a seaworthy ship is non-delegable under both the common law and the Hague-Visby Rules.<sup>44</sup> This means that the carrier remains responsible even if he appoints, or contracts with other agents or shipyards to fulfil this duty. In *The Happy Ranger*,<sup>45</sup> the carrier was unable to rely on classification society certificates to evade his liability for unseaworthiness. In relation to Class surveyors, it was ruled in *The Good Friend*<sup>46</sup> that such inspectors are imposed upon owners rather than chosen or employed by them, thus cannot be used as conclusive evidence that due diligence have been exercised, and that owners must answer for the surveyors' negligence even if they approved the ship which is later found to be unseaworthy.<sup>47</sup> This rule is justified on grounds that the seaworthiness obligation demands the exercise of due diligence for maintaining the ship as fit and safe by whomsoever carry out that work.<sup>48</sup>

### (b) Duration of the duty to provide a seaworthy ship

The duration of the obligation is set out in the doctrine of stages under common law, which requires the vessel to remain seaworthy at the commencement of each separate stage of the voyage,<sup>49</sup> for instance: in a voyage charterparty, the vessel must be seaworthy at the time of sailing on the chartered voyage, regardless if she was unseaworthy before her arrival at the loading port, nor if she becomes unseaworthy after she sails. Channel J. in *McFadden v Blue Star* stated that:

*"The warranty ... is a warranty only to the condition of a vessel at a particular time, namely, the time of sailing; it is not a continuing warranty in the sense of a warranty that she shall continue fit during the voyage."*<sup>50</sup>

Whereas in a time charter, the position of when the duty attaches, under common law, is different as it only relates to the time of delivery of the vessel at the beginning of the charterparty.<sup>51</sup> This undoubtedly creates a problem for a long-time charterer who needs to ensure that owners keep the vessel in a seaworthy condition throughout the whole period of the charter. Therefore, the obligation

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<sup>44</sup> *The Muncaster Castle* [1961] AC 807; *The Brabant* [1967] 1 Q.B. 588.

<sup>45</sup> [2006] 1 Lloyd's Rep. 649.

<sup>46</sup> [1984] 2 Lloyd's Rep. 586. p.594.

<sup>47</sup> In *The Good Friend*, the surveyor failed to inspect trunking within the cargo space which later caused infestation of the cargo. The owners argued, unsuccessfully, that they exercised due diligence by reason of admitting the Class surveyor to inspect the vessel.

<sup>48</sup> Viscount Simonds in *The Muncaster Castle* [1961] AC 807. p.844.

<sup>49</sup> Aiken, R. Lord, R. Bools, M. (2015). *Bills of Lading*. paras.10.105-10.106.

<sup>50</sup> [1905] 1 KB 697. p.703. Also, see *The Vortigern* [1899] P 140.

<sup>51</sup> See *The Hermosa* [1980] 1 Lloyd's Rep. 638 (discussed below in fn.54). Also, see Wilson, J. 2010. *Carriage of Goods by Sea*. p.12.

is commonly supplemented with express provisions to maintain and keep the ship in a fit condition for the whole charter service, including her machinery and personnel,<sup>52</sup> though such clauses are distinct from the obligation as to seaworthiness and their effect is determined upon the merits of each case.<sup>53</sup>

On the other hand, the duration of the seaworthiness obligation under the Hague-Visby Rules is set out in Article III Rule 1, which requires the carrier to provide a seaworthy ship '*before and at the beginning of the voyage.*' This duration was defined as a reference to '*the period from at least the beginning of the loading until the vessel starts on her voyage.*'<sup>54</sup> This entails that the obligation for providing a seaworthy vessel must be exercised at the beginning of each of the voyages under the charter.<sup>55</sup> Since many standard charterparty forms incorporate the Hague or Hague-Visby Rules by means of a clause paramount, it has been suggested that such incorporation would have the effect of enforcing the obligation to exercise due diligence to provide a seaworthy vessel in respect to each voyage under the charter. While the position may seem clear for voyage charterparties,<sup>56</sup> it is not the same under time charters. Although Lord Denning accepted in *The Aquacharm*<sup>57</sup> that the incorporation of the Hague Rules into a one trip time charter could have the effect of imposing the duty of due diligence to make the ship seaworthy at the beginning of the voyage, Mustill J. asked for more caution in *The Hermosa* in relation to period time charters.<sup>58</sup> He emphasized that '*the difficulties created by the inclusion of The Hague Rules into a time charter have not yet been worked out by the Courts ... there are in most time charters express terms as regards initial seaworthiness and subsequent maintenance which are not easily reconciled with the scheme of The Hague Rules, which create an obligation as to due diligence attaching voyage by voyage.*'<sup>59</sup>

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<sup>52</sup> See NYPE 93, Clause 6 which provides that the owners 'shall maintain the vessel's class and keep her in a thoroughly efficient state in hull, machinery and equipment for and during the service, and have a full complement of officers and crew.'

<sup>53</sup> Unless expressly provided otherwise, the nature of such provisions would be assessed in accordance with *The Hong Kong Fir Shipping Co. v Kawasaki* [1962] 2 QB 26 (CA) principle. (discussed below, see 3.3.3 Effect of breach)

<sup>54</sup> Lord Somervell of Harrow in *Maxine Footwear Co Ltd v Canadian Government Merchant Marine Ltd.* [1959] AC 589 (PC). p.602.

<sup>55</sup> See Coghlin, T et al. (2014). *Time Charters*. para.34.13.

<sup>56</sup> *Adamastos Shipping v Anglo Saxon Petroleum* [1958] 1 Lloyd's Rep. 73.

<sup>57</sup> [1982] 1 Lloyd's Rep. 7.

<sup>58</sup> [1980] 1 Lloyd's Rep. 638.

<sup>59</sup> *Ibid.* p.647. Also, See Coghlin, T et al. (2014). *Time Charters*. para.34.16, and Wilson, J. 2010. *Carriage of Goods by Sea*. p.13.

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(c) Vessel's seaworthiness to load solid bulk cargo

In relation to the carriage of liquefiable solid bulk cargoes, the loading operation is of crucial importance for the safe carriage of such goods. When the carrier agrees to load a cargo that is prone to liquefaction, he must ensure that the vessel is properly equipped, manned and its holds are ready to receive the named cargo in accordance with all applicable regulations for that particular cargo, in particular the IMSBC Code. In *The Fiona*,<sup>60</sup> the carriers' failure to clean the vessel's holds and tanks prior to the shipment of dangerous goods, which rendered the vessel unseaworthy in breach of Article III Rule 1, made unseaworthiness the effective cause of the incident, irrespective of the cargo's dangerous character. As a result, the carrier was found liable and lost their entitlement to invoke the indemnity under Article IV Rule 6, under which carriers could destroy, land or jettison dangerous cargo that was shipped without their consent, without being liable to compensate its shipper. It has long been established that the seaworthiness undertaking is the 'overriding obligation', a breach of which may render the carrier liable notwithstanding the occurrence of any circumstances contributing to the damage.<sup>61</sup>

Consequently, if the holds of the vessel were in a wet condition prior to the loading of a solid bulk cargo, or were not properly cleaned and contained residues from previous cargo, these may have the effect of increasing the moisture content present in the solid bulk loaded, which could ultimately cause the cargo to liquefy. In this instance, the vessel may be found unseaworthy since she was not fit to receive the solid bulk cargo due to the wetness of her holds. Similarly, if loading operations were the responsibility of the shipowner and were being carried out during heavy rainfall season, the vessel may also be found unseaworthy if her Master fails to interrupt loading operations by closing the hatches to prevent water ingress into the holds. Following *The Kapitan Sakharov*'s decision entails that where unseaworthiness of the vessel contributes to the liquefaction of the cargo, the carrier is most likely to be found liable even in the event where the shipper misinforms him about the safety of the cargo or miscategorises the cargo under the wrong solid bulk group.<sup>62</sup>

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<sup>60</sup> [1994] 2 Lloyd's Rep. 257. Also see *The Kapitan Sakharov* [2000] 2 Lloyd's Rep. 255.

<sup>61</sup> For full analysis of *The Fiona* and *The Kapitan Sakharov*, and the effect of unseaworthiness of the vessel on the chain of causation, see Chapter 4 – 4.7 Causation of the loss.

<sup>62</sup> Discussed further in Chapter 4 (4.7 Causation of the loss).

### 3.3.2 Burden of proof

Although the court may draw the finding of unseaworthiness from inferences, for instance: if seawater was admitted to the vessel's holds, it could be treated as a proof of unseaworthiness,<sup>63</sup> the burden normally lies on the party alleging that the carrier has committed such a breach.<sup>64</sup> It is a long established principle that the claimant carries the burden of proving that his loss was caused by the unseaworthiness of the vessel.<sup>65</sup> The sequence for establishing the burden of proof in relation to the seaworthiness obligation was clearly laid down in *The Eurasian Dream*<sup>66</sup> as follow:

“(1) *The burden of proof is on the claimants to prove that the vessel was unseaworthy, pursuant to Article III, rule 1, before and at the beginning of the voyage;*  
(2) *The claimants must then also prove that the loss or damage was caused by that unseaworthiness;*  
(3) *If the claimants discharge the burden in respect of (1) and (2), the burden passes to the defendants to prove that they ... exercised due diligence to make the ship seaworthy.*”<sup>67</sup>

In cases of cargo claims,<sup>68</sup> claimants try to argue that the ship was unseaworthy as being unfit to receive the cargo in question under Article III Rule 1. This tactic is mainly an attempt by claimants to prevent the carrier from the benefit of the exceptions listed in Article IV Rule 2 of the Hague-Visby Rules,<sup>69</sup> or exclusion clauses in the contract, since Article III Rule 8 will have the effect of preventing the carrier from excluding, and/or reducing, his liability to provide a seaworthy ship.<sup>70</sup>

On the other hand, in *The Thorsa*,<sup>71</sup> which was decided under common law, a cargo of chocolate was delivered in a deteriorated condition as a result of being stowed next to gorgonzola cheeses. The owners relied on an exclusion clause in the bill of lading relieving them from liability for bad stowage. The claimant submitted that the ship was unfit to receive the chocolate which was liable to become, and did become, tainted by cheese. However, it was held that the claimant failed to discharge the burden upon them in proving the unseaworthiness of the vessel, but that the damage was attributed for improper stowage. Accordingly, the carrier was protected by the exclusion clause

<sup>63</sup> See Cockburn CJ in *Pickup v Thames & Mersey Insurance Co Ltd.* (1878) 3 QBD 594 (CA). p.597.

<sup>64</sup> See *Uni-Queen Lines Pte Ltd v Kamal Sood (The Reunion)* [1983] 2 MLJ 189.

<sup>65</sup> *The Europa* [1908] P 84. p.97-8.

<sup>66</sup> [2002] 1 Lloyd's Rep. 719. p.735

<sup>67</sup> In this case, a fire broke onboard a car carrier which was not extinguished by her master or crew, and subsequently damaged the vehicles and rendered the vessel a constructive total loss. Cargo interests claimed against the bill of lading carrier that the latter failed to exercise due diligence to provide a seaworthy ship, under Article III Rule 1, by reason of the master's and crew's incompetency.

<sup>68</sup> Claims that fall under Art III rule 2 of the Hague-Visby Rules which are subject to the exceptions in Art IV Rule 2.

<sup>69</sup> See, for example, *Great China Metal Industries Co. Ltd. v Malaysian International Shipping Corp. Berhad (The Bunga Seroja)* [1999] 1 Lloyd's Rep. 512. p.87.

<sup>70</sup> See *International Packers v Ocean Steamship Co* [1955] 2 Lloyd's Rep. 218; *Elder Dempster & Co Ltd. v Paterson, Zachonis & Co Ltd.* [1924] AC 522.

<sup>71</sup> [1916] P 257.

and was therefore not liable. Similarly, the same sequence is also applicable where the Hague-Visby Rules apply. In *The Toledo*,<sup>72</sup> Mr Justice Clarke held that “it is common ground that the burden of proving both that the vessel was unseaworthy [before and at the beginning of the voyage] and that the loss was caused by that unseaworthiness is on the [claimants]. It is also common ground that the burden of proving the exercise of due diligence is on the [carriers].”<sup>73</sup>

### 3.3.3 Effect of breach

The Court of Appeal in *Hong Kong Fir Shipping Co. v Kawasaki*<sup>74</sup> categorised the breach of the obligation of seaworthiness as a breach of an innominate term. Diplock L.J. pointed out that classifying the undertaking as a condition would cause severe hardship on owners, whereby it could entitle charterers to repudiate the contract for defects which, even though objectively render the vessel unseaworthy, may be easily and rapidly remediable.<sup>75</sup> For example: although a defective compass is a serious matter, a charterer should not be able to repudiate a 24-month charterparty where a compass adjuster could fix the defect within few hours,<sup>76</sup> or where it may be logical for a short delay to frustrate a voyage charter, it would be wrong in a long time charterparty.<sup>77</sup> Nevertheless, it was established in the *Hong Kong Fir* case that:

“Every breach ... [that] give(s) rise to an event which will deprive the party not in default of substantially the whole benefit which it was intended that he should obtain from the contract ... is a condition.”<sup>78</sup>

Whether the breach had deprived the innocent party from substantially the whole benefit of the contract is a matter of fact relevant to each individual case.<sup>79</sup> To answer this question, the court will

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<sup>72</sup> [1995] 1 Lloyd's Rep. 40.

<sup>73</sup> Ibid, p.41. In this case, the vessel and her cargo were lost due to a fracture in the vessel's shell plating due to bad weather. Cargo owners successfully claimed damages resulting from the owners' failure to exercise due diligence under the Hague Rules to make the vessel seaworthy because they failed to have a proper system for maintenance.

<sup>74</sup> [1962] 2 QB 26 (CA).

<sup>75</sup> Ibid, p.71.

<sup>76</sup> Wilson, J. 2010. *Carriage of Goods by Sea*. p.14.

<sup>77</sup> In *Hong Kong Fir shipping* case, delay caused by repairs for a period of five months did not frustrate a 24-month time charterparty.

<sup>78</sup> [1962] 2 QB 26. p.71. Also, see Liang, C., 'Seaworthiness in charter parties'. (2000). *Journal of Business Law* 1-35.

<sup>79</sup> In *Snia v Suzuki* (1924) 18 Ll.L.Rep. 333, the ship was chartered for 9 months but after less than 3 months she, although new, started to lose blades from her propeller which was found insufficiently strong. The charterers cancelled the contract after the owners had unsuccessfully tried to rectify the defect for over 2 months. The Court of Appeal held that the unseaworthiness of the vessel prevented performance of the contract as to frustrate the charter, thus the charterer were entitled to discharge the contract.

consider the seriousness of the breach and whether it fundamentally goes to the root of the contract.<sup>80</sup> Although this outcome is commercially inconvenient to charterers who will need to wait and see the consequences of the breach before they can terminate the contract, it creates a balance of interests between the parties, whereby allowing immediate repudiation for remediable breaches is also unjustifiable. Moreover, the court may also consider the time at which the breach was discovered, either before performance of the charter<sup>81</sup> or after the ship has sailed.<sup>82</sup> Consequently, the extent of the breach seems to be the main element in finding the remedy for breach of the seaworthiness obligation, either to justify repudiation or only be sound in damages.<sup>83</sup> Though, certainly, the general rules of remoteness and mitigation of loss are equally applicable when assessing any recoverable damages.<sup>84</sup> If a shipowner fails to provide a seaworthy vessel to the charterer, the usual alternative mitigation measures expected from the latter are either to fix an alternative vessel to carry the same cargo or obtain substitute goods at the relevant port, but such actions are non-conclusive and the general rule requires the charterer to act reasonably and not in an imprudent or extravagant manner when deciding alternative measures.<sup>85</sup>

#### (a) On a charterparty

In relation to the carriage of liquefiable solid bulk cargoes, the inability or unfitness of a vessel to carry a cargo that has high moisture content, as to suggest a propensity to liquefy, may render her unseaworthy in circumstances where such cargo can be safely carried by sea and the vessel's unfitness is in breach of the agreed charter. The parties may have entered into the contract specifically for the carriage of solid bulk cargoes, and therefore the provision of such liquefiable

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<sup>80</sup> See *The Hermosa* [1982] 1 Lloyd's Rep. 570. In this case, the defects were remediable within a relatively short time and the charter would still have 16 to 20 months to run, hence the breach did not frustrate the commercial object of the contract.

<sup>81</sup> *Stanton v Richardson* (1873-74) L.R. 9 C.P. 390

<sup>82</sup> *The Democritos* [1975] 1 Lloyd's Rep. 386 where it was established that mere acceptance of an unseaworthy vessel does not amount to waiver.

<sup>83</sup> Damages could be in the form of claiming the ship off-hire while undergoing repairs (*Hong Kong Fir* case), or recover profits which charterer would have made during the wasted time (*Sylvia Shipping Co. Ltd. v Progress Bulk Carriers Ltd. (The Sylvia)* [2010] EWHC 542 (Comm)). Also, it could cover the costs for engaging a substitute vessel where the chartered vessel is unable to perform the service, see *The Kriti Rex* [1996] 2 Lloyd's Rep. 171.

<sup>84</sup> See *Featherston v Wilkinson* (1873) L.R. 8 Ex. 122; and *The Elena d'Amico* [1980] 1 Lloyd's Rep. 75.

<sup>85</sup> *The Asia Star* [2010] 2 Lloyd's Rep. 121. Here, the charterer's failure to charter a substitute vessel, after owners' breach in providing a seaworthy ship, amounted to a loss of US\$2m. It was held that even though the duty to mitigate does not require the aggrieved party to incur extraordinary expense or act otherwise than the ordinary course of business, if the charterer in this case hired another vessel their loss would be far less than the suffered loss (US\$399,500). Accordingly, the charterers failed to take reasonable steps to contain the loss which they knew they would incur by their inaction.

cargo is likely to be permissible under the terms of the charterparty.<sup>86</sup> The charter may describe the vessel required for the charter service as fit to receive and carry liquefiable solid bulk cargoes, and the owners will be in breach if the chartered vessel falls short of that description, for instance: section 7.3.2 of the IMSBC Code makes reference to specially constructed cargo ships that are mainly designed for the carriage of any solid bulk cargo, irrespective of its moisture content.<sup>87</sup> Currently, however, such vessels are not available in large numbers but, arguably, if the contract only permits the use of specially-built vessels and such type has not been so provided by the owners, then it could be said that the charterers are, in this case, deprived from the whole benefit which was intended from entering into such a contract, namely to be able to ship liquefiable solid bulk cargoes without the need to worry about the limits of moisture contents and all the consequent risks therefrom, and therefore repudiation of the contract may be justifiable. In contrast, in absence of a clause requiring a specially constructed vessel in compliance with the IMSBC Code, it is unreasonable to expect owners to make their vessels so constructed in order to be fit for the dangerous cargo. Hobhouse J. in *The Derby* case<sup>88</sup> commented that the vessel's fitness '*must be fairly generally construed [...] and that any subsequent delay or necessity to make some alterations to the vessel or its equipment does not automatically show an initial lack of fitness.*' In case where the cargo offered is safe for transportation, despite its dangerous character,<sup>89</sup> but the vessel is unfit to receive the said cargo for some reason,<sup>90</sup> such a breach does not automatically entitle the charterer to terminate the contract and the *Hong Kong Fir's* principle will apply to determine the nature of the innominate term in breach.

#### (b) On a bill of lading and third parties

The aforesaid is relevant to disputes between charterers and owners,<sup>91</sup> but where the seaworthiness obligation is owed to third parties, i.e. cargo interests, the effect of a breach of the seaworthiness obligation is determined by the type of relationship that exists between the parties. Where there is a contractual document between them, the carriage contract is likely to be evidenced in a bill of

<sup>86</sup> Generally, such provisions expressly provide such permission subject to compliance with applicable safety regulations, for example: see Appendix [1]: BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties. Also, see 4.5.1 – 4.5.6 in Chapter 4.

<sup>87</sup> See the world's first specialised nickel ore carrier on ClassNK. '*ClassNK Welcomes World's First Specialized Nickel Ore Carrier to Register*' (Available on <http://www.classnk.or.jp/hp/pdf/news/press20121024en.pdf>) Accessed October 2013.

<sup>88</sup> [1984] 1 Lloyd's Rep. 635. pp.641-642. (at first instance).

<sup>89</sup> Whereby if the cargo is so dangerous in that it cannot be safely transported, the owners may then be entitled to refuse it and that charterers may be in breach of their obligations to offer such a cargo, see Chapter 3 – 3.4.1 Can the carrier refuse to carry dangerous cargo?.

<sup>90</sup> For instance: shifting boards cannot be installed in the cargo space or hatch covers are not sufficiently watertight. Such defects could render the vessel unseaworthy for such shipment.

<sup>91</sup> Though such parties can agree to contract out of the seaworthiness obligation, but typically they will insert clauses which ensure that the owner maintains his vessel during service and that charterer will not cause harm to the ship.

lading.<sup>92</sup> Since this is a contractual relationship, it is either the 'absolute' common law obligation or the 'due diligence' Hague-Visby Rules obligation that is applicable to the case, unless there is any agreement to the contrary. The common law obligation, as discussed earlier,<sup>93</sup> can be excluded or restrained, whereas the Hague-Visby Rules would either be applicable by the force of law,<sup>94</sup> which means they mandatorily apply to cases that fall within their scope,<sup>95</sup> or when the parties expressly agree to incorporate them into their contract. Regardless of which of the two rules apply to the cargo claim, the available remedy will be only found in damages, as cargo claimants are most likely to discover the damage after the carriage has been completed, but it will be a question of whether the carrier is strictly liable or that the unseaworthiness was not caused by the carrier's want of due diligence. In *The Kriti Rex*,<sup>96</sup> the vessel was ordered to load bananas from three ports but after loading the first cargo her engine broke down and had to call at a port of refuge. Consequently, the bananas were severely damaged and became commercially unmarketable. The bill of lading holder, therefore, claimed damages for the loss caused by the unseaworthiness of the vessel. The carriage contract was governed by the Carriage of Goods by Sea Act 1971 and, accordingly, the Hague-Visby Rules applied to this carriage. The Commercial Court found that the vessel was unseaworthy prior to loading at the first port<sup>97</sup> and held the owners liable for the damages caused by their failure to deliver the bananas to their destination due to such unseaworthiness.<sup>98</sup>

In contrast, where there is lack of contractual relationship between the parties, the claimant may rely on the common law of bailment to establish the carrier's breach. Generally, bailment imposes a duty on the common carrier to return the goods entrusted to him in the same condition as they were initially delivered.<sup>99</sup> The principle of common carriers, which refers to carriers who ply their trade between particular ports carrying goods for all people,<sup>100</sup> has been extended to include all

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<sup>92</sup> See Lord Atkin in *Tate & Lyle Ltd. v Hain Steamship Company* (1936) 55 Ll.L.Rep. 159. p.174. He held that 'a new contract appears to spring up between the ship and the consignee on the terms of the bill of lading'.

<sup>93</sup> See above fn.15.

<sup>94</sup> Under English law, by virtue of s.1(2) of the Carriage of Goods by Sea Act 1971.

<sup>95</sup> The scope of the Rules is determined by Articles I and X.

<sup>96</sup> [1996] 2 Lloyd's Rep. 171.

<sup>97</sup> *Ibid*, pp.189-190.

<sup>98</sup> *Ibid*, p.191. The Court further held that damages for failure to carry the cargo can be measured 'either by the difference between market and charter rates of freight or by reference to the value of the goods at the port of discharge.' (see pp.193-194 and 201-202).

<sup>99</sup> See Holt C.J. in *Coggs v Bernard* (1703) 2 Ld Raym 909, where he classified common carriers as falling under the fifth sort of bailment (*locatio operis faciendi*), thus being 'bound to answer for the goods at all events ... but acts of God and the enemies of the king'.

<sup>100</sup> Palmer, N. (2009). *Palmer on Bailment*. para.20-002.

commercial shipowners who carry goods for reward.<sup>101</sup> Lord Denning in *Morris v C.W. Martin & Sons*<sup>102</sup> explained the notion of bailment for reward in the following terms:

*“Once a man has taken charge of goods as a bailee for reward, it is his duty to take reasonable care to keep them safe [...] If the goods are lost or damaged, whilst they are in his possession, he is liable unless he can show - and the burden is on him to show - that the loss or damage occurred without any neglect or default or misconduct of himself or of any of (his) servants.”*<sup>103</sup>

Accordingly, the performing carrier, as bailee for reward, has to take active steps to protect the bailed goods against foreseeable hazards, in contrast with the duty of care owed under the tort law of negligence which only requires carriers not to damage the goods,<sup>104</sup> and such a duty will certainly cover loss or damage caused by unseaworthiness. In the shipping context, however, it is most often than not that the goods will be carried subject to express provisions embodied in a carriage contract incorporating the carrier's terms of trading<sup>105</sup> and, in accordance with *The Pioneer Container's* decision,<sup>106</sup> such terms take precedence over any duties arising out of bailment.<sup>107</sup> In the said case, the cargo owners, as bailors, were bound by an exclusive jurisdiction clause agreed between the bailee freight carrier, with whom the cargo owners contracted for the carriage of goods, and the sub-bailee shipowner. The bill of lading issued between the freight carrier and cargo owners contained a clause allowing the freight carrier to subcontract the carriage ‘on any terms’. The freight carrier sub-bailed the carriage to a shipowner with whom a shipowner's bill of lading was issued and had an exclusive jurisdiction clause referring all disputes to be determined in Taiwan. The Privy Council (Hong Kong) held the cargo owners bound by the terms of the sub-bailment because they authorised the bailee to make any sub-bailment ‘on any terms’. There are other issues with bailment that must be considered, which are discussed below,<sup>108</sup> but at this stage one should note the aforesaid effect of contractual terms agreed between shippers and carriers, and their implications on the carrier's bailee duties toward third parties.

<sup>101</sup> Wright J. in *Gosse Millerd Ltd. v Canadian Government Merchant Marine Ltd* (1927) 28 Ll.L.Rep. 88, cited in *The MSC Amsterdam* [2007] 2 Lloyd's Rep. 622, para.22. In *Paterson Steamships v Canadian Co-operative Wheat Producers* [1934] A.C. 538, Lord Wright stated that ‘all carriers by sea were subject to the liabilities of a common carrier, even if they were not in fact a common carrier’ (pp.544-545).

<sup>102</sup> [1966] 1 Q.B. 716.

<sup>103</sup> Ibid, p.726.

<sup>104</sup> See *Deyong v Shenburn* [1946] KB 227. Also, see below 3.4.3 The tort of negligence.

<sup>105</sup> Which may also incorporate the Hague-Visby Rules, or any other regime, by way of a clause paramount. Though such rules may nonetheless be compulsorily applicable.

<sup>106</sup> [1994] 2 A.C. 342.

<sup>107</sup> If the bailor is a commercial entity, it would be possible for the contract of carriage to exclude all liability in bailment. See Palmer, N. (2009). *Palmer on Bailment*. para.20-016.

<sup>108</sup> See 3.4.2 The common law of bailment, below.

### 3.4 Duty to care for cargo

There is another fundamental obligation imposed on carriers, under both common law and Hague-Visby Rules, that specifically relates to the care of cargo. It was discussed earlier that the scope of the seaworthiness obligation also covers the vessel's cargoworthiness.<sup>109</sup> However, the carrier is not only expected to ensure the readiness of his vessel to safely receive, keep and carry the cargo, but he is also bound not to interfere with, or cause any damage to, the goods whilst at his possession.<sup>110</sup> The obligations as to seaworthiness and care of cargo have been both described as overriding obligations.<sup>111</sup> In practice, it is common that a bill of lading will be issued after loading operations are completed, acknowledging the condition of the goods at shipment. Cargo owners at the receiving end of the voyage can compare the condition of the cargo at discharge against the description and details provided in the bill of lading,<sup>112</sup> and if there is any difference it could entail that something has happened to the goods during the voyage. Since whatever intervened with the goods happened whilst they were at the possession of the carrier, then the carrier's liability in causing the damage or loss to the goods becomes questionable. The position under both the Hague-Visby Rules and common law principles are considered below, but there are some preliminary matters that must be noted first.

#### (a) Jurisdiction and applicable law

In pursuing every cargo claim, the applicable jurisdiction and law regime must, firstly, be determined. Cargo owners, and certainly their lawyers, must get these two issues right from the start, otherwise they might end up wasting time and expenses in a wrong jurisdiction applying the wrong law, which may consequently result in the claim being time-barred, for example: the Hague-Visby Rules discharge the carrier from any liability in respect of the goods if the suit has not been brought within one year from the date of delivery.<sup>113</sup> In simple circumstances, the contract itself may provide for an exclusive jurisdiction clause and for the applicable law to any dispute that may arise between the parties, and therefore attention must be first placed on the terms of the contract. Otherwise, in the

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<sup>109</sup> See above, 3.3 Duty to provide a seaworthy ship.

<sup>110</sup> Except where the goods become dangerous, and where the Hague-Visby Rules apply, he can then destroy them. The carrier may also interfere with the goods in the event of general average in order to save the ship and other cargoes.

<sup>111</sup> In *Paterson Steamships Ltd. v Canadian Co-operative Wheat Producers Ltd.* [1934] A.C. 538, 545.

<sup>112</sup> See *Sea Success Maritime Inc. v African Maritime Carriers Ltd.* [2005] 2 Lloyd's Rep. 692.

<sup>113</sup> Article III Rule 6, whereas the Limitation Act 1980 under English law gives 6 years in the absence of any contractual term that gives another period.

absence of any such terms, international regulations or national legislations should then be consulted.<sup>114</sup>

(b) Title to sue

Secondly, another crucial issue to be addressed is the claimant's title to sue. Undoubtedly, any person who is alleging to have suffered some damage or loss must first establish that he has the right to sue the party responsible for that damage, in order to provide legitimacy for his claim. Simply, the claimant may have a claim in contract, tort or bailment and he can pursue all three together against the carrier. With regards to contractual claims,<sup>115</sup> it is a straight forward case where the claimant is the charterer or the shipper, whereby the former has title to sue under the charterparty and the latter will certainly have such rights in the carriage contract.<sup>116</sup> However, receivers' title to sue requires a particular concern because they are not party to the original contract.<sup>117</sup> Where the Carriage of Goods by Sea Act (COGSA) 1992 applies,<sup>118</sup> it has the effect of transferring all rights of suits under the carriage contract to subsequent lawful holders of the bill of lading,<sup>119</sup> and therefore the contractual rights will be vested in the lawful holder of the bill when the shipper transfers the bill of lading to them.<sup>120</sup> This effectively means that the carrier will then have a contractual relationship with the bill of lading holder who can use the bill as a conclusive evidence of the shipment of the goods against the carrier.<sup>121</sup> Lord Atkin in *Tate & Lyle Ltd. v Hain Steamship Company*,<sup>122</sup> held that '*a new contract appears to spring up between the ship and the consignee on the terms of the bill of lading*'. Finally, the identity of the carrier, which was discussed earlier,<sup>123</sup> must be ascertained.

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<sup>114</sup> For jurisdiction: Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, or the *forum non conveniens* under English law. For applicable law: Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I), or Regulation (EC) No 864/2007 of the European Parliament and of the Council of 11 July 2007 on the law applicable to non-contractual obligations (Rome II).

<sup>115</sup> Title to sue under bailment and tort law are considered below.

<sup>116</sup> Unless the carriage contract embodied in a bill of lading is transferred to a receiver – discussed below.

<sup>117</sup> The principle of privity of contract only entitles the contracting parties to sue under the agreed contract.

<sup>118</sup> See section 1 of the 1992 Act.

<sup>119</sup> See s.2(1) COGSA 1992, which also covers a consignee identified in the seaway bill or any person entitled to delivery under a ship's delivery order. Also see *East West Corp. v DKBS* [2003] 1 Lloyd's Rep. 265. For definition of the 'lawful holder' of a bill of lading, see s.5(2).

<sup>120</sup> By means of s.2(5), once the shipper transfers the bill of lading to the receiver, his contractual rights are then extinguished, without prejudice to any shipper's rights deriving from other causes of action, i.e. tort or bailment. See *East West Corp. v DKBS* [2003] 1 Lloyd's Rep. 265.

<sup>121</sup> Section 4, COGSA 1992.

<sup>122</sup> (1936) 55 Ll.L.Rep. 159. p.174.

<sup>123</sup> See 3.2 Who is the carrier? Above.

In respect to the carriage of liquefiable solid bulk cargo, it is crucially important for the carrier not only to understand his liability, as to discharge his obligation, but he must also correctly identify the party with whom the liabilities under the carriage contract are vested in. If the cargo causes any damage to the vessel, the carrier would certainly wish to recover such losses from the responsible party. As for the charterer, the charterparty's terms and conditions will always stand between both the charterer and carrier and, if the goods shipped cause any damage, the carrier will have a claim against the charterer. With regards to the shipper, the carrier will never lose his right of suits against the original shipper with whom he contracted,<sup>124</sup> despite the fact that the shipper, by contrast, loses his rights of suit under the carriage contract when he transfers the bill of lading to a third party.<sup>125</sup> In relation to cargo owners, it has been mentioned earlier that by means of transferring the bill of lading to a third party, that party will have all the rights of suit under the carriage contract vested in them, but is the case similar in regard to the liabilities under the said contract? The answer is found in section 3(1) of COGSA 1992, which holds the lawful holder of the bill of lading, the named consignee in a seaway bill or the person named on the ship's delivery order, liable only at the occurrence of one of the following events: they take or demand delivery of the goods to which the document relates,<sup>126</sup> or they make a claim that relates to those goods under the carriage contract.<sup>127</sup> The rationale behind restricting third parties' liability to those events is to protect commercial banks that hold any of the said shipping documents as a security, under a letter of credit, from incurring liability under the carriage contract, save until the banks enforce that security by way of the aforesaid events.<sup>128</sup>

#### 3.4.1 The duty under the Hague-Visby Rules

One of The Hague-Visby Rules' main objectives is to protect cargo owners, who are normally not involved in the negotiation process between the shippers/charterers and shipowners. Such protection guards cargo interests against prejudicial contractual terms that may be agreed between the

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<sup>124</sup> S.3(3), COGSA 1992.

<sup>125</sup> S.2(5).

<sup>126</sup> For what constitute a 'demand of delivery', it was interpreted in *The Berge Sisa* [2002] 2 A.C. 205 that it must be a formal demand asserting a right to delivery of the relevant goods, whereby in this case the receiver rejected the contaminated cargo and therefore their rejection could not be considered a 'demand' for the purpose of the 1992 Act. In *The Aegean Sea* [1998] 2 Lloyd's Rep. 39, the bank accepted delivery of the salvaged oil cargo in compliance with a government order and could not be considered as taking delivery under s.3 of the 1992 Act.

<sup>127</sup> For example: if the third party arrests the vessel, then this act satisfies s.3(1). In *The Ythan* [2006] 1 Lloyd's Rep. 457, it was held that the issuance of a letter of undertaking did not amount to making a claim under s.3(1).

<sup>128</sup> See Baatz, Y et al. 2017. *Maritime Law*. p.214-215, in which Prof. Charles Debattista argues that s.3(1) has an unintended consequence, whereby cargo owners may avoid liability by, simply, not taking delivery or making a claim under the relevant shipping document, in the event that party has, for some reason, lost interest in the sale contract.

contracting parties to their detriment. It achieves this purpose by imposing mandatory standard clauses to eligible carriage contracts,<sup>129</sup> by means of compulsory application or voluntary incorporation,<sup>130</sup> which clearly define the carrier's obligations and restrictively limit the maximum protection that he could be entitled for under exclusion clauses. Therefore, it is not surprising that the Rules impose an obligation on the carrier to look after the goods he carries on board his vessel. Article III Rule 2 provides that:

*"Subject to the provisions of Article IV, the carrier shall properly and carefully load, handle, stow, carry, keep, care for, and discharge the goods carried."*

With disregard to the mentioned- Article IV provisions at this stage, one should examine the draftsmen's intention by the use of the words '*properly and carefully*,'<sup>131</sup> as it sets out the required standard that carriers must follow. Whilst '*carefully*' usually refers to the exercise of reasonable care, the House of Lords considered the word '*properly*' in *Albacora v Westcott and Laurance Line*<sup>132</sup> as to mean 'in accordance with a sound system'. Lord Reid emphasized that when considering whether the carrier has adopted a sound system, the court should take into account '*all the knowledge which the carrier has or ought to have about the nature of the goods*.'<sup>133</sup> It was further held that the reasonable shipowner must have a system which is '*designed to permit the goods in question to be carried without damage, having regard to their nature, condition and circumstances and duration of the voyage*.'<sup>134</sup> In the *Albacora* case, a cargo of particular type of fish was only labelled 'keep away from engine and boilers' but no other instructions were given to the carrier. On arrival, it was found that the cargo developed a bacterial action and had consequently deteriorated in quality. However, it was subsequently established that such cargo need refrigeration in order to be shipped safely. Since this fact was unknown to the carrier, the court found no breach of Article III Rule 2.

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<sup>129</sup> Whereby the Hague-Visby Rules only apply to carriage contracts covered by a bill of lading or any similar document of title, see Article I(b). Also note other requirements in relation to the type of goods shipped and the period covered under Article I(c) and (e) respectively.

<sup>130</sup> The Rules may be compulsory applicable under Article X, or the parties may incorporate them by a clause paramount.

<sup>131</sup> The *Travaux Préparatoires of the Hague Visby Rules* do not define the terms. They provide that the rule '*contained an essential clause highlighting that the carrier, except as provided for in article 4, was responsible for seeing that everything required for loading, handling, stowage, carriage, custody, and unloading was provided for the goods to be carried*.' (pp.185-186).

<sup>132</sup> [1966] 2 Lloyd's Rep. 53.

<sup>133</sup> Ibid, p.58

<sup>134</sup> Ibid, p.45.

### (a) Responsibility for cargo operations

Although Article III Rule 2 specifically indicates that it is the carrier who should perform the seven-mentioned tasks relating to the goods, the parties may agree different arrangements under the terms of the contract, for instance: stowage may be the responsibility of the shipper or charterer, or the discharge operation may be carried out by the receiver.<sup>135</sup> Devlin J. in *Pyrene v Scindia* stated that:

*"I see no reason why the rules should not leave the parties free to determine by their own contract the part which each has to play. On this view the whole contract of carriage is subject to the rules, but the extent to which loading and discharging are brought within the carrier's obligations is left to the parties themselves to decide."*<sup>136</sup>

As a result, the House of Lords in *The Jordan II*<sup>137</sup> held that Article III Rule 2 does not override the parties' freedom to re-allocate their responsibilities for the Rule-described functions.<sup>138</sup> It further held that any agreement as to transfer any of the responsibilities, such as handling, stowing or discharging the cargo, upon a party other than the carrier will not be invalidated by virtue of Article III Rule 8.<sup>139</sup> However, such a clause must be clearly worded in order to be given effect.<sup>140</sup> In *Compania Sud American Vapores v MS ER Hamburg*,<sup>141</sup> a clause transferring loading and stowing obligations to charterers 'at their expense under the supervision of the Captain' was held to be effective to vary the operation of Article III Rule 2 to be carried out by the charterers at their account and risk.<sup>142</sup> Nevertheless, some foreign jurisdictions casted some doubts about the aforesaid decisions, such as the Fifth Circuit Court of Appeal in *Tubacex Inc. v M/V Risan*,<sup>143</sup> as it was held that the obligation under Article III Rule 2, similar to the seaworthiness obligation, is non-delegable,<sup>144</sup> and therefore shipowners are not entitled to contract such responsibilities out to another party.<sup>145</sup> The issue was not addressed in the *Travaux Preparatoires of the Hague-Visby Rules*,<sup>146</sup> as

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<sup>135</sup> See clause 8 of the NYPE 93 Charterparty.

<sup>136</sup> [1954] 2 Q.B. 402, 417-418. This decision was also approved by the House of Lords in *Renton v Palmyra Trading Corp.* [1957] AC 149.

<sup>137</sup> [2005] 1 Lloyd's Rep. 57.

<sup>138</sup> *Ibid*, p.61 (per Lord Steyn).

<sup>139</sup> *Ibid*, p.62. Following the decision in *The Caspiana* [1956] 2 Lloyd's Rep. 379.

<sup>140</sup> *The Jordan II* [2005] 1 Lloyd's Rep. 57. para.30.

<sup>141</sup> [2006] 2 Lloyd's Rep. 66.

<sup>142</sup> The court distinguished between 'a right to supervise', as in this case, and 'a duty to supervise'. If the clause imposed a duty on shipowners to supervise, then Article III rule 2 will apply and place the responsibility on the carrier.

<sup>143</sup> 45 F. 3rd. 951 (5th Cir. 1995).

<sup>144</sup> Similarly, the duties of a bailee under common law are also non-delegable, see *British Road Services v Arthur Crutchley* [1968] 1 All E.R. 811. However, Australian and New Zealand courts applied the English decisions, see *Shipping Corporation of India v Gamlen Chemical Co.* (1980) 147 C.L.R. 142 and *International Ore & Fertilizer Corp. v East Coast Fertilizer Co* [1987] 1 N.Z.L.R. 9.

<sup>145</sup> See Baughen, S., 'Defining the limits of the carrier's responsibilities'. (2005). L.M.C.L.Q. 154-160, in which the author examines the unaddressed issues of the English decisions.

there is no statement that prevents the shipowner from allocating Article III Rule 2 obligations to another party. Lord Steyn in *The Jordan II*, held that ‘internationally there is no dominant view. The weight of opinion in foreign jurisdictions is fairly evenly divided.’<sup>147</sup> He also held that the *Travaux Préparatoires* are unhelpful in this case because they did not ‘clearly and indisputably points to a definite legislative intention.’<sup>148</sup> The position under English law, therefore, stands on the *Pyrene v Scindia*’s aforesaid principle, thus the contracting parties are free to agree their own terms in relation to the responsibility for Article III Rule 2 obligations. In *The EEMS SOLAR*,<sup>149</sup> standard clause 5 of the GENCON forms provided that loading, stowing and lashing operations to be carried out ‘free of any risk, liability and expense whatsoever to the Owners’. This clause effectively transferred all cargo handling operations to the charterers. The CONGEN bills issued for that voyage incorporated the GENCON charterparty terms, and therefore the owners were not found liable for damages caused to the cargo by reason of bad stowage, since stowing operations were the responsibility of the charterers.<sup>150</sup>

#### (b) Article IV Rule 2 exceptions

Article III Rule 2 expressly subjects the care of cargo obligation to a long list of seventeen exemptions laid down in Article IV. These exclusions of liability vary from ones which fall at the carrier’s fault, such as negligence of the master and crew in the navigation and management of the ship,<sup>151</sup> others relate to the actions of the shipper, i.e. insufficiency of packing or inadequate marks, and a third kind of exemptions for which no one’s fault is involved, including acts of God, war or public enemies. Most notably, the last exemption (q) which reads ‘any other cause arising without the actual fault of the carrier’ requires a particular consideration. It is regarded as the ‘catch-all’ exception since it provides a very wide protection, whereby the carrier is not liable if he can prove that the damage or loss occurred without his own fault, or that of his servants. It could be said that it

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<sup>146</sup> The working documents of the Rules. Comité Maritime International. (1997). *Travaux Préparatoires of the Hague Rules and of the Hague-Visby Rules*. n.p. pp.185-186.

<sup>147</sup> *Ibid*, para.24.

<sup>148</sup> *Ibid*, p.64. In agreement with Lord Wilberforce’s statement in *Fothergill v Monarch Airlines* [1981] AC 251. p.252.

<sup>149</sup> [2013] 2 Lloyd’s Rep. 487.

<sup>150</sup> For criticism of this decision, see Todd, P., ‘Hague Rules and Stowage – The Eems Solar’. (2014), 15 (May), *Lloyd’s Maritime and Commercial Law Quarterly* 139-145.

<sup>151</sup> See *The Glenochil* [1896] P. 10. For this exemption to apply, the master’s or crews’ carelessness must be primarily directed to the ship, rather than the cargo, i.e. bad stowage is a conduct directed towards cargo care, hence the exemption does not apply, see *The Frances Salman* [1975] 2 Lloyd’s Law Rep. 355 and *The Eternity* [2009] 1 Lloyd’s Rep. 107.

is a reasonable exception on part of the carrier because if there is no fault, there should be no liability.<sup>152</sup>

Furthermore, exception (q) extends to cover the employees of any independent contractors whom have been engaged by the carrier, whereby they are regarded as agents or servants of the carrier himself.<sup>153</sup> However, for the carrier to be liable for subcontractors' actions within the meaning of exemption (q), the fault of these servants must be connected with the work for which they were employed to do. In *Hourani v T&J Harrison*,<sup>154</sup> stevedores were employed to discharge the cargo during which some of it was stolen by the men employed by the stevedoring company, whereas in *Leesh River Tea Co. v British India Steam Navigation Co.*<sup>155</sup> the theft involved a storm valve which had no connection with the discharging operation. Accordingly, the Court of Appeal distinguished between the two cases and found the carrier liable in the first one, but not in the second. Lord Justice Salmon in the latter case held that '*the stevedoring company was engaged by the shipowners to handle the cargo, and their servants became the shipowners' agents for that purpose.*'<sup>156</sup>

#### (c) Article IV Rule 2(m) inherent defect, quality, or vice of the goods

In respect to the carriage of solid bulk cargoes, Article IV Rule 2 exemption (m) may be of a particular relevance, which provides that the carrier shall not be responsible for loss or damage resulting from inherent defect or vice of the goods. Since solid bulk cargo has a unique character in rapidly changing its behaviour from a solid state into liquid, then one can argue that the inherent vice of the goods falls within the scope of exemption (m), as to exclude the carrier from liability for any resulting loss. Inherent vice was defined by Lord Diplock in the insurance case *Soya v White* as follow:

*"The risk of deterioration of the goods shipped as a result of their natural behaviour in the ordinary course of the contemplated voyage without the intervention of any fortuitous external accident or casualty."*<sup>157</sup>

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<sup>152</sup> For successful application of this exemption, see *Goodwin Ferreira & Co. v Lamport & Holt Lines Ltd.* (1929) 34 Ll.L.Rep. 192, where the loaded machinery was inadequately packed, came out of its packaging and damaged other cargo onboard. The exemption has been also successful in pilferage cases, some of which are discussed in the subsequent paragraph.

<sup>153</sup> *Heyn v Ocean Steamship Co.* (1927) 27 Ll. L. Rep. 334.

<sup>154</sup> (1927) 27 Ll. L. Rep. 415.

<sup>155</sup> [1967] 2 Q.B. 250.

<sup>156</sup> *Ibid*, p.276. He also said that if they stole some of the cargo, the shipowners would be liable to its owners for the stevedores' dishonest acts. However, the theft in this case had nothing to do with the handling of the cargo, and therefore the owners were not liable.

<sup>157</sup> [1983] 1 Lloyd's Rep. 122. p.126. Example of inherent vice: in *Noten v Harding* [1990] 2 Lloyd's Rep. 283, another insurance case, the gloves shipped evaporated a moisture which condensed on top of the container and dripped back

The phrase '*ordinary course of the contemplated voyage*' is the key element here.<sup>158</sup> Arguably, if the parties address the inherent vice of the goods in their contract, for which the contract expressly requires some special standard of cargo care to be adopted, the inherent vice may not then be an issue, for example: if the vice of the goods required refrigeration to be safely shipped, and the contract required such refrigeration but the carrier failed to provide so, it would be hardly arguable that the goods were damaged by their inherent vice,<sup>159</sup> but likely by breach of Article III Rule 2.<sup>160</sup> However, if the contract is silent but the carrier has the knowledge that the goods are sensitive, albeit such knowledge of quality does not in itself preclude him from relying on the defence,<sup>161</sup> such knowledge could influence the level of the carrier's responsibilities under Article III Rule 2.<sup>162</sup> It was held in *Ministry of Food v Lamport and Holt Line Ltd*<sup>163</sup> that if the carrier has knowledge about the nature of the goods' inherent vice, he must take extra care of the goods as is reasonably required by reason of that knowledge.<sup>164</sup> At the present, the carrier is expected to be aware of the inherent vice of solid bulk cargoes, in that they have tendency to liquefy if the moisture content is in excess of the safe limit. This entails that if he fails to ship such goods in accordance with the applicable cargo care regime, namely the IMSBC Code, it is doubtful that he would be able to rely on the inherent vice exemption.

#### (d) Inherent vice and burden of proof

Cargo care and inherent vice are often interrelated. The carrier's failure to adopt some necessary measures may influence the vice of the cargo onboard that could ultimately damage the cargo, for instance: some solid bulk cargoes may require ventilation during the sea passage when shipped from high temperature zones bound for cold climate destinations. Condensation within the holds may increase moisture content resulting in mouldy, if not liquefied, cargo. In this instance, the carrier may

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onto the gloves damaging them. Held, the damage was caused by inherent vice because the moisture originated from the gloves themselves.

<sup>158</sup> See *The Barcore* [1896] P. 294, where the goods were damaged by its own want of power to bear the ordinary transit in a ship. 'Ordinary transit' refers to the kind of transit which the contract requires the carrier to afford.

<sup>159</sup> *Albacora v Westcott and Laurance Line* [1966] 2 Lloyd's Rep. 53. p.59.

<sup>160</sup> It may also amount to a breach of Article III Rule 1 and render the vessel unseaworthy because, as pointed out earlier, seaworthiness also covers cargoworthiness (see 3.3 Duty to provide a seaworthy ship). Also, see Aikens, R. Lord, R. Bools, M. (2015). *Bills of Lading*. paras.10-112-10.113.

<sup>161</sup> *Gould v Chatham and South Eastern Railway Co.* [1920] 2 K.B. 186, where the railway carrier was exempted from liability for the damage resulting from insufficient packing of the goods, even though he was aware of it.

<sup>162</sup> Discussed in Chapter 4 – 4.4 Knowledge of the carrier.

<sup>163</sup> [1952] 2 Lloyd's Rep. 371, where a carrier had full knowledge of the nature of the tallow loaded failed to take measures to protect a consignment of maize that was stowed underneath the tallow. The carrier needed no warnings about the possibility of leakage from the tallow since they possessed the material knowledge about its occurrence.

<sup>164</sup> In contrast, see *The Rio Sun* [1985] 1 Lloyd's Rep. 350, where the carrier did not have the knowledge, nor was instructed, to heat the oil loaded during shipment.

be found in breach of Article III Rule 2 for his failure to ventilate the holds.<sup>165</sup> If 'clean' bills of lading were issued stating that the cargo was loaded 'in apparent good order and condition',<sup>166</sup> but the goods were found damaged upon discharge. The carrier would be liable for failing to deliver the goods with the same good order, unless he brings himself within an exception or he can show that the goods were damaged due to some cause which was not apparent on a reasonable inspection of the goods when loaded.<sup>167</sup>

Therefore, the burden of proof lies with the carrier if he wishes to rely on the inherent vice defence. Nevertheless, it has often been debated whether the carrier's contributory negligence, if any, should also be rebutted by the carrier himself in order for Article IV exceptions to operate.<sup>168</sup> The Court of Appeal clarified the position in *Volcafe Ltd v Compania Sud Americana de Vapores SA*,<sup>169</sup> where it was held that:

*"the carrier was under a legal burden, not merely an evidential burden, to prove on the balance of probabilities a defence based on one of the exceptions in article IV, rule 2 ... in order to discharge that burden, the carrier was not required to show that the damage had occurred without its negligence ... and that if the carrier established such a defence, it was for the cargo claimant to negative the operation of the exception by establishing negligence or a breach of the duty under article III, rule 2"*

Although the case was concerned with the inherent vice defence, it is submitted that it applies to all Article IV Rule 2 exceptions, except for exemption (q) which requires the carrier to establish that the damage was caused without his negligence.<sup>170</sup> Accordingly, once the carrier establishes the application of one of the exceptions, the burden then shifts to the claimants to prove the carrier's negligence, in that he failed to apply a sound system to 'properly and carefully' load, care for and discharge the cargo.<sup>171</sup> Consequently, and in connection with the carriage of solid bulk cargo, if the carrier shows that he properly ventilated the holds, or applied any necessary precautions not to

<sup>165</sup> However, see *Canada Rice Mills v Union Marine and General Insurance Company* [1941] A.C. 55. (discussed below). The relationship between inherent vice and Article III Rule 1 is discussed in Chapter 4 (4.4).

<sup>166</sup> For implications of shipowners' representations on the bills of lading, see *Sea Success Maritime Inc v African Maritime Carriers Ltd* [2005] EWHC 1542 (Comm) and *The David Agmashenebeli* [2003] 1 Lloyd's Rep. 92.

<sup>167</sup> *Silver v Ocean Steamship Company* [1930] 1 K.B. 416.

<sup>168</sup> See *The Flowergate* [1967] 1 Lloyd's Rep. 1.

<sup>169</sup> [2017] Q.B. 915, 915. Though, an appeal to the Supreme Court remains outstanding at the time of writing.

<sup>170</sup> As discussed above, see Article IV exceptions.

<sup>171</sup> As discussed in 3.4.1 The duty under the Hague-Visby Rules above. For a commentary on the *Volcafe* case, see Todd, P., 'Hague Rules and Burden Of Proof - *Volcafe v Compania Sud Americana de Vapores*'. (2017), *Lloyd's Maritime and Commercial Law Quarterly* 169-175. Also, see Rania Tadros. 'Court of Appeal clarifies who bears burden of proof in inherent vice cases' (available on: <http://www.incelaw.com/en/knowledge-bank/court-of-appeal-clarifies-who-bears-burden-of-proof-in-inherent-vice-cases>) [Accessed August 2017].

increase the moisture content of the cargo onboard, he may then be entitled to the inherent vice defence notwithstanding his knowledge of the liquefy-ability of the cargo loaded.

Nevertheless, the aforesaid defence may be easily available to the carrier against the shipper and/or charterer where the relevant contract incorporates the Hague-Visby Rules, or similar exclusion clauses that cover inherent vice. The case is also the same when it is brought by cargo interests, under the bills of lading which incorporate the same provisions, before English courts.<sup>172</sup> By contrast, it has been highlighted that the inherent vice defence is more burdensome for carriers in other jurisdictions when dealing with cargo claims pursued by holders of bills of lading at the countries of discharge.<sup>173</sup> Some foreign courts may not necessarily recognise English jurisdiction and applicable law clauses, and such courts often proceed applying its national law to the dispute in question. Amongst all nations that are signatory to either the Hague, Hague-Visby and Hamburg Rules,<sup>174</sup> as well as countries which rectified none of these regimes but adopted very similar provisions within their statutory rules, i.e. USA Carriage of Goods by Sea Act, the carrier is likely to find himself subject to similar obligations and restrictions when dealing with cargo claims,<sup>175</sup> subject to diverse interpretation of the provisions in question. In relation to solid bulk cargo, it has been reported that the Chinese Courts denied carriers their reliance on the inherent vice defence, when the Master failed to clause the bills of lading with sufficient remarks pointing out the apparently high moisture content that was present in the cargo at the load port.<sup>176</sup>

(e) Causation: peril of the sea causing inherent vice damage

The issue of concurrent causes is often addressed in relation to causes resulting from the dangerous nature of the goods, i.e inherent vice, and the carrier's negligence in performing his Article III obligations under the Hague-Visby Rules. Here, it is prompting to discuss concurrent causes in relation to two exemptions found in Article IV, namely perils of the sea and inherent vice. Almost all reported cargo liquefaction incidents had occurred when the vessels carrying solid bulk cargo

<sup>172</sup> *The Volcafe* case was a cargo claim by the bill of lading holder against the carrier.

<sup>173</sup> See Skuld. 'Moist soybeans, regulations at the load port and obligations at the discharge port'. (available on: <https://www.skuld.com/topics/cargo/solid-bulk/agricultural-cargoes/brazil-and-uruguay-soybeans-with-high-moisture-content/section-one/>) [Accessed August 2017]

<sup>174</sup> Also including the nations applying the less popular Rotterdam Rules.

<sup>175</sup> For example: Article 51 of the Chinese Maritime Code 1993 provides that: "The carrier shall not be liable for the loss of or damage to the goods occurred during the period of carrier's responsibility arising or resulting from any of the following causes: ... (9) Nature or inherent vice of the goods."

<sup>176</sup> Ibid, see Skuld's article 'Moist soybeans, regulations at the load port and obligations at the discharge port'.

experienced heavy weather.<sup>177</sup> The heavy swells generated from sea waves, which may aggressively destabilise the vessel's list, could dramatically increase the moisture content present in the solid bulk cargo onboard resulting in liquefaction. Although such analysis of concurrent causes is more profound in marine insurance cases,<sup>178</sup> where inherent vice is an excluded peril whereas perils of the sea is an insured one, in the carriage of goods by sea context both perils are aimed at excluding the carrier's liability for cargo damage. As aforementioned, if the carrier brings himself within an Article IV exception, he may lose this entitlement if the claimant can show that the damage was caused by the carrier's negligence to care for the cargo, pursuant to Article III Rule 2.<sup>179</sup>

Nonetheless, the inherent vice condition of the solid bulk cargo to liquefy may be triggered by heavy seas, instead of any negligence on part of the carrier. The question therefore arises is whether the carrier can be exempted by the perils of the sea event which may activate the inherent vice of the solid bulk cargo loaded causing it to liquefy? To qualify for the perils of the sea exemption, English courts restrict its operation to unforeseeable and unpredictable incidents of the adventure,<sup>180</sup> which are not attributable to anyone's fault.<sup>181</sup> In *Canada Rice Mills v Union Marine and General Insurance Company*,<sup>182</sup> the cargo was damaged by reason of closing the vessel's ventilators due to heavy weather, but the vessel was found seaworthy and the closure of ventilators was appropriate in the heavy storm, thus the Court found that perils of the sea was the cause of the loss. However, many commentators expressed their disagreement in suggesting that where the carrier is not at fault, the loss must then be by perils of the sea, especially that in the *Canada Rice Mills* case the storm was not even exceptional.<sup>183</sup> In *The Tilia Gorthon*,<sup>184</sup> Sheen J. emphasised that it is insufficient to show that the carrier exercised his Article III obligations to qualify for the 'perils of the sea' exemption, the weather must also be unforeseeable and unpredictable, as he stated that:

*"It seems highly probable that none of the deck cargo would have been lost but for the violence of the storm. But the evidence as to the weather has not satisfied me that the conditions encountered were such as could not and should not have been contemplated by the shipowners."*<sup>185</sup>

<sup>177</sup> Read INTERCARGO's submission titled 'Bulk carrier casualties caused by cargo liquefaction' to the 90th Maritime Safety Committee (MSC 90/12/3).

<sup>178</sup> See the fundamental decision in *The Cendor MOPU* [2011] UKSC 5.

<sup>179</sup> See Inherent vice and burden of proof. In particular, the *Volcafe* case discussed above.

<sup>180</sup> *The Xantho* (1887) 12 App. Cas. 503. p.509.

<sup>181</sup> *The Inchmaree* (1887) 12 App. Cas. 484. p.492.

<sup>182</sup> [1941] A.C. 55.

<sup>183</sup> See Aikens, R. et al. (2015). *Bills of Lading*. para.10.243. The Australian case, *The Bunga Seroja* [1999] 1 Lloyd's Rep. 512, adopted a similar view that where there is no breach of Article III obligations, 'perils of the sea' exemption can be invoked even though the weather was forecast. (p.521).

<sup>184</sup> [1985] 1 Lloyd's Rep. 552.

<sup>185</sup> *Ibid*, p.555. In this case, cargo of timber was washed overboard, albeit that it had been secured with deck fittings especially designed for their carriage. Held, although the carrier could not rely upon the weather as constituting perils

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However, it would be unfair to hold the carrier liable if he committed no wrong in handling the cargo, notwithstanding the volatility of the weather. In today's modern forecast technology, the weather to be encountered during the voyage is often contemplated prior to the ship's departure from the load port. This entails that perils of the sea defence would never apply in future cases, unless an unforeseeable typhoon strikes the vessel's route. The *Canada Rice Mills* decision has not been overruled and still stands as a good law. Therefore, if the cargo was damaged and a breach of duty of care was alleged against the carrier, there remains a chance for the carrier to be exempted from liability if he can show Article III obligations have been discharged yet, through no fault of his own, the effect of the heavy sea waves on the vessel's motion has caused the solid bulk cargo to liquefy.

(f) Article IV Rule 6: carrier's immunity to destroy dangerous cargo

Article IV Rule 6 provides that:

*"Goods of an inflammable, explosive or dangerous nature to the shipment whereof the carrier, master or agent of the carrier has not consented with knowledge of their nature and character, may at any time before discharge be landed at any place, or destroyed or rendered innocuous by the carrier without compensation and the shipper of such goods shall be liable for all damages and expenses directly or indirectly arising out of or resulting from such shipment."*

*If any such goods shipped with such knowledge and consent shall become a danger to the ship or cargo, they may in like manner be landed at any place, or destroyed or rendered innocuous by the carrier without liability on the part of the carrier, except to general average, if any."*

This rule is examined in chapter 4, but it is sufficient here to outline the carrier's right to land, destroy or render innocuous any solid bulk cargo that poses a danger to the ship, its personnel and other cargoes onboard during transit. It is important to note that the carrier is entitled to deal with the dangerous cargo irrespective of his consent or knowledge of its dangerous character at the time of shipment. The outcome for his liability, however, may be different based on his knowledge or his given consent. If the carrier did not consent to load the cargo, had he known its dangerous character, he could then destroy such goods without indemnifying the shipper. Whereas, if the carrier consented to the shipment of a dangerous cargo, he could still destroy the cargo but he may be liable for general average for the saved adventure. In any event, provided the carrier is dealing with the dangerous

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of the seas, which was within the contemplation of the parties, he had exercised due diligence in supplying adequate lashing equipment.

cargo onboard as enshrined under Article IV Rule 6, he will not be held in breach of his cargo care obligations under Article III Rule 2.<sup>186</sup>

In the real world, however, a master faced with liquefaction onboard may not necessarily have the means to destroy or jettison the cargo. Such operation would require the opening of hatches at the high seas, which may not be safe in the first place, and the use of grabs or pumps to drain out the excess moisture. Needless to say the extreme hazards associated with these operations that may seriously endanger the safety of the crew and the vessel. However, if the liquefaction was not significantly serious and the vessel would be able to deviate to a port of refuge where it could discharge the cargo. Article IV Rule 6 should then operate in favour of the carrier giving him the right to land the cargo.<sup>187</sup> Some unidentifiable sources suggested that the ship could seek safe shelter, open the hatches, and sun-dry the consignment in order to heat the excessive moisture content.<sup>188</sup> Although it would be subject to the weather conditions and ambient air temperature permitting such an exercise, some solid bulk cargoes are also prone to self-heat and the carrier may cause further damage to the cargo by carrying out such conduct. In any event, the Master is regulatory empowered, in principle, with absolute discretion when it comes to making decisions on safe navigation.<sup>189</sup> Therefore, it must be for the master's sole discretion to make any necessary decisions that concern the safety of life at sea of his crew and the ship, as he thinks fit without any commercial pressure or intervention by Owners and/or Charterers. Liquefaction incidents may turn catastrophic very rapidly, thus the master should not be waiting for instructions from his principals and must take any action that may be reasonably available to him within such restricted circumstances.<sup>190</sup>

### 3.4.2 Duty of care under other regimes

This thesis is mainly concerned with contractual liabilities, but here is a brief outline of the duty of care under both tort law and the law of bailment. It is acknowledged, however, that the below notions rarely arise in practice, whereby recourse to these actions only arises when a claimant loses his contractual rights or where the agreed terms do not, or may not, satisfy their claims.

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<sup>186</sup> However, the same is not true if the carrier was in breach of Article III Rule 1 (to provide a seaworthy ship) and such unseaworthiness of the vessel was the effective cause of the damage ensued; see Chapter 4 – Causation of the loss.

<sup>187</sup> Note chapter 4 which discusses whether solid bulk cargoes are regarded as dangerous cargo or not.

<sup>188</sup> Several P&I Clubs have suggested the same operation in their circulars on the subject, and the same was adopted in the Chinese case discussed in 3.4.1(d) above.

<sup>189</sup> See Regulation 43-1 of Chapter V, SOLAS. Discussed in Chapter 2.

<sup>190</sup> In certain emergency circumstances, a master may be regarded as an 'agent of necessity'. This entitles the master to act beyond his authority without being liable for the actions he takes to the owners and/or cargo interest. He will have implied powers to act in best interests of all owners of property in his care. See MacLachlan, M. (2004). *The Shipmaster's Business Companion*. 4<sup>th</sup> ed. London: The Nautical Institute.

### (a) The tort of negligence

The carrier can also be sued in tort if he negligently causes damage to the cargo onboard. The duty of care required under the law of tort is different from that owed under bailment,<sup>191</sup> whereby the carrier only owes a duty not to damage the goods.<sup>192</sup> Unlike bailment, there is no duty under the tort of negligence to take active steps to protect the goods from theft by third parties.<sup>193</sup> In addition, the burden of proof, as compared to bailment, is reversed. Whereby, in tortious claims, it is for the claimant to prove the negligence of the defendant, whereas, in bailment, the claimant only needs to prove that the damage has occurred while the goods were in the defendant's custody. The burden then shifts to the defendant to show that he exercised reasonable care.<sup>194</sup> Nevertheless, the most significant drawback for tortious claims is that the party pursuing the claim must have had legal ownership or possessory title to the goods concerned when the damage occurred.<sup>195</sup> It was held in *The Aliakmon* that:

*"In order to enable a person to claim in negligence for loss caused to him by reason of loss of or damage to property, he must have had either the legal ownership of or a possessory title to the property concerned at the time when the loss or damage occurred, and it is not enough for him to have only had contractual rights in relation to such property which have been adversely affected by the loss of or damage to it."*<sup>196</sup>

Once again, the title to sue in a non-contractual claim proves to be more complicated. In brief terms, 'possessory title' constitutes the actual possession, or the immediate right to possession, of the goods.<sup>197</sup> Roskill J. in *The Weare Breeze* stated that '*an action for negligence ... cannot succeed unless the plaintiff is, at the time of the tort complained of, the owner of the goods or the person entitled to possession of them.*'<sup>198</sup> One can argue whether a bill of lading holder has the required 'possessory title', but a negative answer was provided in *The Future Express*,<sup>199</sup> which held that the passing of possessory interest at common law depends on the parties' intention but that the mere physical possession of the bill of lading is insufficient to pass such a property in respect of the goods

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<sup>191</sup> Discussed below.

<sup>192</sup> See *Deyong v Shenburn* [1946] KB 227. Also, see Aikens, R. Lord, R. Bools, M. (2015). *Bills of Lading*. para.9.51.

<sup>193</sup> *British Road Services Ltd. v Arthur V. Crutchley and Co. Ltd.* [1968] 1 Lloyd's Law Rep. 271. and *East West Corp. v DKBS* [2003] Q.B. 1509. p.1513.

<sup>194</sup> See Baughen, S., 'Bailment's Continuing Role in Cargo Claims'. (1999). *Lloyd's Maritime and Commercial Law Quarterly* 393-405. pp.394-395.

<sup>195</sup> See Roskill J in *Margarine Union v Cambay Prince* [1969] 1 QB 219. Although this decision was met with criticism and many attempts were made to change it (see *The Irene's Success* [1981] 2 Lloyd's Rep. 635), the House of Lords restored its full application in *The Aliakmon* [1986] A.C. 785.

<sup>196</sup> [1986] A.C. 785. p.809.

<sup>197</sup> See *The Wear Breeze* [1969] 1 Q.B. 219. Also, see Palmer, N. and McKendrick, E. (1998). *Interests in Goods*. p.66.

<sup>198</sup> *Ibid*, p.250. Also, see *Transcontainer Express v Custodian Security* [1988] 1 Lloyd's Rep. 128.

<sup>199</sup> [1993] 2 Lloyd's Rep. 542. The decision was confirmed in *East West Corp. v DKBS* (see paras40-42).

to entitle its holder to sue in tort, unless the parties so intend.<sup>200</sup> Furthermore, liability of the carrier in tort is limited by the general rules of remoteness, causation and any applicable time limitation period, plus by express terms of any existing contract between the parties.<sup>201</sup>

### (b) The common law of bailment

Care of cargo at common law distinguishes two bundles of liabilities depending on whether the carrier is a common carrier or a private carrier. In legal terms, a common carrier is someone who is compelled by law to accept all passengers and goods offered for transportation, whereas a private carrier only carries specified goods under an agreed contract.<sup>202</sup> The former carrier is liable for any resulting loss or damage to the goods, unless such loss or damage is attributed to an act of God, an act of a Queen's enemy,<sup>203</sup> or the nature of the goods themselves.<sup>204</sup> In contrast, the private carrier's liability is usually defined in the contractual terms agreed between the parties.<sup>205</sup> Since the common carrier's duty derives from the notion of a contractual bailment, the obligation required from the carrier was laid down by Wright J. in *Gosse Millard v Canadian Government Merchant Marine* as follows:

*"The bailee is bound to restore the subject of the bailment in the same condition in that which he received it, and it is for him to explain or to offer valid excuse if he has not done so. It is for him to prove that reasonable care had been exercised."*<sup>206</sup>

Nonetheless, as discussed above,<sup>207</sup> commercial shipowners are also considered as common carriers within the context of bailment for reward,<sup>208</sup> and that the obligations arising out under bailment are subject to any contractual provisions that have been agreed upon. Under bailment, for example, the carrier must re-deliver the goods in the same condition, but where the Hague-Visby Rules apply the carrier is entitled under Article III Rule 6 to jettison or destroy the goods if they become dangerous.

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<sup>200</sup> Ibid, p.547 (per Lloyd L.J.). The case concerned shipments of wheat under sale contracts in which the parties agreed that the wheat would be discharged without presentation of the bills against an indemnity, and the bills were transferred to a bank who financed the sale under a letter of credit despite its knowledge of the arrangements. After discharge, the bank presented the bills for delivery of the goods or their value, but the Court of Appeal declined the claim because the parties have agreed and made delivery by a different route, in that they intended from the moment of shipment that the property and right to possession would pass independently of the bills.

<sup>201</sup> Baatz, Y et al. 2017. *Maritime Law*. pp.189-190.

<sup>202</sup> Palmer, N. (2009). *Palmer on Bailment*. para.20-002. Also, see Rossini, C. 1998. *English As a Legal Language*. p.104.

<sup>203</sup> *Coggs v Bernard* (1703) 2 Ld Raym 909.

<sup>204</sup> Known as 'inherent vice'. The exceptions extended to include inherent vice and defective packing in *Gould v South Easter and Company* [1920] 2 K.B. 186, 190-191.

<sup>205</sup> *The Xantho* (1887) 12 App. Cas. 503.

<sup>206</sup> [1927] 2 K.B. 432, 436. Note that Wright J decision was reversed in the Court of Appeal but upheld by the House of Lords: [1929] A.C. 223. The same was ruled by Lord Mansfield in *Forward v Pittard* (1785) 1 T.R. 27, 33.

<sup>207</sup> Under 3.3.3 Effect of breach (On a bill of lading and third parties).

<sup>208</sup> Wright J. in *Gosse Millard Ltd. v Canadian Government Merchant Marine Ltd* (1927) 28 Ll.L.Rep. 88 (see fn.95).

In addition, bailment is also limited by the general rules of causation and remoteness.<sup>209</sup> In general, where the bailment obligation stands, the bailee's duty in exercising reasonable care requires him to protect the goods vis-à-vis intentionally making any act which is inconsistent with the bailor's right of property whilst at his possession,<sup>210</sup> as well as he must re-deliver the goods in the same condition as they were initially delivered to him.<sup>211</sup>

As outlined earlier, this thesis is mainly concerned with contractual liabilities, and that bailment rarely arises in today's practice.<sup>212</sup> However, in relation to the carriage of solid bulk cargoes, there are two significant issues in bailment that need to be addressed. Firstly, there is a general principle that where a bulk cargo is owned in common by more than one person, there can be no bailment.<sup>213</sup> Though, this only applies where the whole of a solid bulk cargo has been shipped on board a vessel and owned in common by several people who are all entitled to delivery of a share of that cargo. This is attributed to the fact that the subject matter of the bailment, in other words the exact quantity/share of the cargo, which each individual owner has is unidentifiable, by reason of the cargo being in bulk. Therefore, they cannot be bailors which consequently mean they cannot enforce the obligations of a bailee against the carrier.<sup>214</sup> Secondly, another issue relates to the bailor's title to sue which is complicated in the context of carriage of goods by sea. In summary, the original shipper who transfers possession of the goods to the carrier is regarded as a bailor and, as outlined earlier, he does not lose his rights in bailment after transferring the bill of lading to a consignee.<sup>215</sup> The question then arises as to the position of the consignee's title to sue in bailment. In other words, does the consignee become a bailor by means of obtaining the bill of lading? In *The Aliakmon*,<sup>216</sup> it was held that the only bailment of the goods that had arisen was between the sellers and the shipowner, when the former bailed the goods to the latter. In order for the bailment to arise as between the shipowner and the buyer, the shipowner had to attorn the bailment to the buyer so that they could become the bailor in place of the seller. However, it was ruled that the mere transfer of the bill of lading does not constitute a valid attornment. In order to establish an effective attornment, the bailee must, first,

<sup>209</sup> *The Pioneer Container* [1994] 2 A.C. 342. (see above pp.34-35).

<sup>210</sup> See Lord Justice Mance (para.28) in *East West Corp. v DKBS* [2003] 1 Lloyd's Rep. 239. p.249.

<sup>211</sup> See 'Duties and responsibilities of the bailee' in Aikens, R. Lord, R. Bools, M. (2015). *Bills of Lading*. paras.9.51-9.57. By way of example for failure to protect the goods, see *British Road Services Ltd. v Arthur V. Crutchley and Co. Ltd.* [1968] 1 Lloyd's Law Rep. 271.

<sup>212</sup> See: Baughen, S., 'Bailment's continuing role in cargo claims'. (1999). *Lloyd's Maritime and Commercial Law Quarterly* 393-405.

<sup>213</sup> *South Australian Insurance v Randell* (1869) LR 3 PC 101.

<sup>214</sup> *Re Goldcorp Exchange Ltd.* [1995] 1 AC 74. For further details on this issue, see Burrows, A. (2013). *English Private Law*. para.16.14; and Palmer, N. (2009). *Palmer on Bailment*. para.20-029 and paras.8-008-8-009.

<sup>215</sup> Though he loses his contractual rights under the carriage contract by reason of transferring the bill of lading to the consignee, s.2(5) COGSA 1992.

<sup>216</sup> [1986] A.C. 785.

acknowledge the third party's title to the goods and their entitlement to delivery of them,<sup>217</sup> and, second, clearly communicate this attornment to the third party.<sup>218</sup> Lord Justice Brandon emphasised that it is only when the shipowner, as a bailee, attorns the bailment to the consignee, as to become a bailor, bailment would have effect as between the shipowner and the consignee.<sup>219</sup> However, Lord Hobhouse in *The Berge Sisar*<sup>220</sup> established that the transfer of a bill of lading, in the context of F.O.B contracts, 'evidences a bailment with the carrier who has issued the bill of lading as the bailee and the consignee as bailor.'<sup>221</sup> In this instance, it was held that the transfer of the bill of lading could constitute a 'transferable attornment.' However, Lord Mance J. commented in *East West Corp. v DKBS*<sup>222</sup> that Lord Hobhouse's statement in *The Berge Sisar* can only apply where the consignee is a F.O.B buyer,<sup>223</sup> because the shipper in such a case is acting as the consignee's agent in bailing the goods to the carrier.<sup>224</sup>

### 3.5 Other liabilities of the carrier

The carrier's liabilities toward shippers, charterers and cargo interests have been considered above, and elsewhere in this thesis, but the carrier may be liable for other claims that may be pursued against him following liquefaction of the cargo onboard. Most of the reported liquefaction incidents had sadly resulted in the loss of crewmembers and the vessels. Such disasters will likely be followed by claims from the crew, or their estate, for personal injury or death, and from port authorities for pollution and/or wreck removal. The sums involved in such actions will be significant and therefore fierce legal battles may ensue amongst the parties to account for such damages. In this section, crews' and port authorities' claims are briefly addressed.

In practice, crew claims are often covered under the protection and indemnity insurance policy, which usually covers crews' loss of employment, medical fees, repatriation fees, compensation for injuries sustained, and death resulted, during service onboard the ship.<sup>225</sup> Due to

<sup>217</sup> *The Gudermes* [1993] 1 Lloyd's Rep. 311

<sup>218</sup> *Laurie and Morewood v John Dudin & Sons* [1926] 1 K.B. 223. Also, see Palmer, N. (2009). *Palmer on Bailment*. paras.20-011-20-013.

<sup>219</sup> *The Aliakmon* [1986] 2 Lloyd's Rep. 1. pp.9-10.

<sup>220</sup> [2002] 2 A.C. 205.

<sup>221</sup> *Ibid*, p.219.

<sup>222</sup> [2003] 1 Lloyd's Rep. 265. para.34.

<sup>223</sup> In which the seller is responsible to load the goods on board a vessel designated by the buyer.

<sup>224</sup> See *Albazero* [1977] AC 774. p.786.

<sup>225</sup> These liabilities are governed by the Maritime Labour Convention 2006, which came into force on 20 August 2013, with rectification by 82 Member States. The MLC establishes minimum working and living standards for all seafarers onboard ships. Ships are required to keep onboard the Maritime Labour Certificate (MLC) and a Declaration of Maritime Labour Compliance (DMLC) which provide prima facie evidence that the ships are in compliance with the

the humane nature of such claims, and the complexity in challenging them, these are often promptly settled by the relevant Protection and Indemnity Club, which may later take any recourse action against the party responsible for causing the injury or death of the crew.<sup>226</sup> If the cause of the crew's loss was the result of a charterer's conduct, the latter may then be found liable, in part or whole, for the resulting loss.<sup>227</sup> As discussed earlier,<sup>228</sup> cargo handling operations from the load port through to discharge of the cargo at its destination may be the responsibility of the charterer. If the charterer fails to properly care for the solid bulk cargo loaded, which later liquefies causing the ship to capsize with no survivals accounted for, the carrier, or his insurers, may then be entitled to claim the damages paid in settlement of the crew claims, and for the losses suffered for losing the ship, from the charterer.<sup>229</sup> Similarly, if Owners discharged all their cargo care obligations but the charterer/shipper misdeclared the moisture content of the cargo loaded, which later liquefies and causes the loss of the ship and her crew, the latter may be held liable for misrepresenting the goods and to account for all the losses resulting therefrom.<sup>230</sup>

Furthermore, pollution claims are every shipowners' nightmare due to their complexity and unpredictable size.<sup>231</sup> Solid bulk cargoes categorized as Group B, which are not subject to this thesis, are considered as harmful to the marine environment. Therefore, MARPOL Annex V restricts any dumping or discharging of such goods into the sea.<sup>232</sup> The same would apply to solid bulk cargoes that are classified as Group A and B, as such goods pose a danger to the marine environment as well as the risk of liquefaction.<sup>233</sup> Accordingly, the capsizes of a ship that releases environmentally

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requirements of the MLC. These documents are often inspected by Port States and the ITF (The International Transport Workers' Federation). Failure to meet the MLC requirements could result in the detention of the defaulted ship.

<sup>226</sup> There are some limited exemptions when the crew, for example, wilfully kill or injure himself.

<sup>227</sup> See West of England. 'Charterer's Risks and Liabilities' (available on: <http://www.westpandi.com/globalassets/about-us/underwriting/underwriting-guides/underwriting-guides-charterers-risks-and-liabilities.pdf>) Accessed August 2017.

<sup>228</sup> Responsibility for cargo operations above. (3.4.1(a)).

<sup>229</sup> In the event the charterer was found liable for damaging the ship, they will not be entitled to limit their liability under the 1976 Limitation Convention (discussed below), whereby although charterers fall within the persons entitled to limit their liability under the Convention, it was held that the right does not extend to claims for damage to the chartered ship herself. See *the CMA Djakarta* [2004] EWCA Civ 114. This conclusion has been recently confirmed by the Supreme Court in *the Ocean Victory* [2017] UKSC 35.

<sup>230</sup> In the event the loss was caused by multiple breaches caused by owners and charterers, causation then becomes an issue and the liability will be determined accordingly. See 4.7. Causation of the loss (Chapter 4).

<sup>231</sup> Liability, however, may be limited in accordance with the applicable limitation regime, but under certain circumstances, prescribed within these regimes, the shipowner may lose the right to limit his liability.

<sup>232</sup> There is no individual annex within MARPOL for solid bulk cargoes, but it is considered that the rules for garbage discharge (addressed in Annex V Guidelines) apply.

<sup>233</sup> However, some inadequacy of the present pollution prevention regime that applies to solid bulk cargoes have been highlighted in Grote, M. et al. 'Dry bulk cargo shipping — An overlooked threat to the marine environment?' (2016), 21 (June), *Marine Pollution Bulletin* 511-519. The article suggests that the lack of available information on chemical

harmful materials into the sea would attract pollution claims from the relevant authorities. Indeed the risk may also extend to include the bunkers onboard that may cause oil spills in the effected location.<sup>234</sup> Moreover, if the HNS Convention 1996 (or 2010 as amended) enters into force,<sup>235</sup> limited numbers of solid bulk cargoes, that are considered hazardous to the marine environment, are covered under this regime, and therefore the liability for the pollution caused by such materials would be governed in accordance with the HNS Convention.<sup>236</sup> Again, should charterers be found liable for causing the pollution, recourse actions may be available to the carrier, or his insurers, to claim the sums paid from the party at fault.

Moreover, if a ship is sunk and become of no economic value to attract the attention of any salvor, the ship may be abandoned as a wreck. Being a wreck, and depending on her location, she may pose a threat to safe navigation and cause significant damages to other parties, i.e. if she blocks a port's entrance. Therefore, Article 60 of UNCLOS empowers a Member State to remove any wreck located within its Exclusive Economic Zone,<sup>237</sup> with recourse action being available to the State to claim reimbursement from the wreck's owners.<sup>238</sup> Recently, however, following the entry into force of the Wreck Removal Convention in 2015, shipowners are no longer able to abandon the wreck and will be held strictly liable to account for the costs of the wreck removal,<sup>239</sup> through compulsory

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composition, bioavailability and toxicity of solid bulk materials has rendered MARPOL prevention measures as inadequate to hamper the threat of marine pollution from such goods.

<sup>234</sup> In many countries, including the UK, oil pollution damage is governed by the Civil Liability Conventions 1969 and 1992, which impose strict, but limited, liability on the shipowner for pollution damage. However, the CLC and Fund Conventions (under which the IOPC Fund is established) only apply to oil pollution caused by oil tankers. For oil pollution caused from bunkers onboard other vessels, these are covered by the International Convention on Civil Liability for Bunker Oil Pollution Damage 2001. See Tsimplis, M. N., 'The Bunker Pollution Convention 2001: completing and harmonizing the liability regime for oil pollution from ships?' (2005), *Lloyd's Maritime and Commercial Law Quarterly* 83-101. Also, see Soyer, B. and Tettenborn, A. 2012. *Pollution at sea*. UK: Informa. (Chapter 2).

<sup>235</sup> Its full title is the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea. Both versions of 1996 and 2010 have not yet attained the required signatories to enter into force. Similar to the IOPC Fund (concerned with oil pollution), the HNS Conventions aim to establish compensatory schemes to cover pollution damage from hazardous and noxious substances carried by ships, including: the risks of fire and explosion, loss of life, personal injury, and loss of or damage to property.

<sup>236</sup> Many of the major solid bulk cargoes are excluded since they do not possess chemical hazards (i.e. iron ore, grain, bauxite and cement). Although some solid bulks are classified as hazardous material only in bulk, these are not considered as HNS (i.e. coal, reduced iron and woodchip). Some fertilizers, sodium and potassium nitrates, sulphur and some types of fishmeal are covered under the HNS Convention.

<sup>237</sup> Which covers up to 200 nautical miles from the shoreline of a State, see Arts. 55-75, Part V of UNCLOS 1982.

<sup>238</sup> Under section 252 of the Merchant Shipping Act 1995, the Harbour Authority is empowered to remove the wreck and seek reimbursement for its costs from the sale proceeds of the wreck, or its owners.

<sup>239</sup> Articles 7-9, unless he can prove, under Article 10, that the casualty that caused the wreck: (a) resulted from an act of war, hostilities, civil war, insurrection, or a natural phenomenon of an exceptional, inevitable and irresistible character; (b) was wholly caused by an act or omission done with intent to cause damage by a third party; or (c) was wholly caused by the negligence or other wrongful act of any government or other authority responsible for the maintenance of lights or other navigational aids in the exercise of that function.

insurance cover or financial security.<sup>240</sup> Similarly, charterers may also purchase wreck removal cover under their liability insurance policy in order to guard against the potential of them being found liable for causing the sinking of the ship.<sup>241</sup>

### 3.6 Limitation of liability

Limitation of liability is a long-established concept in the shipping industry.<sup>242</sup> Lord Denning in *the Bramley Moore* stated that:

*“The principle underlying limitation of liability is that the wrongdoer should be liable according to the value of his ship and no more. A small tug has comparatively small value and it should have a correspondingly low measure of liability ... I agree that there is not much room for justice in this rule; but limitation of liability is not a matter of justice. It is a rule of public policy which has its origin in history and its justification in convenience”*<sup>243</sup>

This section briefly addresses the application of the 1976 Limitation Convention,<sup>244</sup> which is enacted into English Law by virtue of s.185 of the Merchant Shipping Act 1995.<sup>245</sup> Under this regime, shipowners, managers, operators and charterers of sea-going ships<sup>246</sup> have the right to limit their liabilities.<sup>247</sup> Article 2 provides a list of the claims that are subject to limitation, most importantly, for the purpose of this thesis, including:

*“(a) Claims in respect of loss of life or personal injury or loss of or damage to property ... occurring on board or in direct connection with the operation of the ship ... and consequential loss resulting therefrom;*

*(b) Claims in respect of loss resulting from delay in the carriage by sea of cargo...;*

*(d) Claims in respect of the raising, removal, destruction or the rendering harmless of a ship which is sunk, wrecked, stranded or abandoned, including anything that is or has been on board such ship;*

<sup>240</sup> Article 12. The Convention also provides coastal States with the right of direct action against the insurer.

<sup>241</sup> Interestingly, wreck historically was defined as a derelict (see *The Lusitania* [1986] 1 Lloyd's Rep. 132.), but Article 1(4) of the Wreck Removal Convention extended this definition as: “a sunken or stranded ship, or any part of a sunken or stranded ship, including any object that is or has been on board such a ship, or any object that is lost at sea from a ship and that is stranded, sunken or adrift at sea, or a ship that is about, or may reasonably be expected, to sink or to strand, where effective measures to assist the ship or any property in danger are not already being taken.”

<sup>242</sup> Early English statutes that govern this concept date back to the Responsibility of Shipowners Act 1733 and Merchant Shipping Act 1854. There are separate limitation regimes for other industries, i.e. the Warsaw Convention 1929 (as amended) for air, the Convention on the International Carriage of Goods by Road (CMR) for road and the Convention Concerning International Carriage by Rail 1980 for rail.

<sup>243</sup> [1963] 2 Lloyd's Rep. 429 (CA), p.437.

<sup>244</sup> Its full title is The Convention on Limitation of Liability for Maritime Claims 1976, and its Protocol 1966.

<sup>245</sup> The Convention is set out in Part I of Schedule 7 of the 1995 Act. However, some of the provisions, within the Convention, have not been so enacted as Member States could opt-out of certain terms.

<sup>246</sup> The UK extended this regime to non-seagoing ships, by virtue of Article 15(2) of the 1976 Convention.

<sup>247</sup> Art.1(2). The right was extended to cover the master, members of the crew and other servants of the owner, charterer, manager or operator acting in the course of their employment, see Art.1(4). Whereby, in *The Himalaya* [1954] 2 Lloyd's Rep. 267 the claimant brought an action against the master in an attempt to circumvent the limitation regime applicable at the time.

(e) *Claims in respect of the removal, destruction or the rendering harmless of the cargo of the ship*<sup>248</sup>

These are some of the main heads of claims that could be subject to limitation following a liquefaction incident.<sup>249</sup>

However, one of the most critical issues that has been debated under the Convention is the charterer's ability to limit his liabilities for claims brought by the shipowners. At first instance in *the CMA Djakarta*,<sup>250</sup> the High Court followed the historical approach of limitation regimes which granted charterers the right to limit their liabilities only where they were acting 'in the shoes' of a shipowner.<sup>251</sup> The Court of Appeal,<sup>252</sup> however, reversed the first instance decision on the basis that the interpretation of international conventions should not be made subject to domestic rules of construction.<sup>253</sup> Therefore, it was concluded that the term 'charterers' includes charterers who are acting in their capacity as a 'charterer', hence they are entitled to the same rights as shipowners under the limitation regime.<sup>254</sup> Nevertheless, it was held that charterers' right to limit their liability applied in respect of indemnity claims brought by shipowners, but it does not extend to damages done to the ship itself as it was not property 'on board' the ship in the language of the Convention.<sup>255</sup> This conclusion has recently been reaffirmed by the Supreme Court decision in *the Ocean Victory*,<sup>256</sup>

<sup>248</sup> For the claims excluded from limitation, see Art.3.

<sup>249</sup> In accordance with Art.4, a shipowner may lose his right to limitation if the damages were caused by "his personal act or omission, committed with intent to cause such loss, or recklessly and with knowledge that such loss would probably result". See *The Ert Stefanie* [1989] 1 Lloyd's Rep. 349.

<sup>250</sup> *The CMA Djakarta* [2003] 2 Lloyd's Rep. 50, which was concerned with an explosion and fire on board the vessel caused by containers of bleaching powder. Charterers were liable to the owners for breach of a time charterparty for carrying dangerous cargoes. David Steel J. held, in relation to Article 1(2), that before a charterer was entitled to limit his liability he must be acting as shipowner.

<sup>251</sup> Similar decision was held in *The Aegean Sea* [1998] 2 Lloyd's Rep. 39, in which a vessel carrying a cargo of crude oil was grounded, broke in two and exploded while proceeding to a port nominated by her charterer. Her owner sought to recover from charterer the sums paid for all cargo claims, together with the value of the vessel, the bunkers on board and freight. Thomas J. concluded that the 1976 Convention does not provide an entitlement to charterers to limit for these types of claims brought against them by the shipowners.

<sup>252</sup> [2004] EWCA Civ 114.

<sup>253</sup> Longmore L.J. stated that "To my mind this places a gloss on the word 'charterer' which is by no means apparent from the words used ... the mere fact that 'charterer' is part of the definition of the word 'shipowner' cannot of itself mean that a charterer has to be acting as if he were a shipowner before he can limit his liability. To my mind the ordinary meaning of the word 'charterer' connotes a charterer acting in his capacity as such, not a charterer acting in some other capacity" (p.465).

<sup>254</sup> Accordingly, it is agreed that any charterer, including time and voyage charterers, have the right to limit liability under the 1976 Convention. For the position of slot charterers, a phenomenon related to the container shipping industry, see Hjalmarsson, J. Slot charterers' right to tonnage limitation. (2009). Vol. 9. *Shipping & Trade Law* 2-3.

<sup>255</sup> *The CMA Djakarta* [2004] 1 Lloyd's Rep. 460. p.468 (para.26).

<sup>256</sup> [2017] UKSC 35. This case is significantly important for addressing three important issues, namely (1) the interpretation of 'abnormal occurrence' in the safe port warranty undertaking, (2) the effect of joint-insurance provisions when there is a claim against a third party and the co-assureds have agreed not to make any claim against each other, and (3) charterers' entitlement to limit their liability against Owners under the 1976 Convention on

albeit the issue of limitation was obiter in this case,<sup>257</sup> as it was ruled that charterers cannot limit their liabilities as against owners for the loss of the ship.<sup>258</sup> Consequently, Charterers, whose solid bulk cargo liquefies and causes the loss of the ship and her crew, may be entitled to limit their liabilities for all indemnity claims that may be brought forward by the owners of the stricken ship, i.e. cargo, crew and port authorities' claims. However, charterers will not be able to limit their liability for causing the loss of the ship and related consequential losses, such as: salvage expenses and general average incurred by the shipowners, since these claims were not found to fall within Art.2 of the Convention.<sup>259</sup>

### 3.7 Conclusion

This chapter outlined the application of the carrier's 'seaworthiness' and 'duty of care' obligations in the carriage of solid bulk materials. Seaworthiness, being described as 'the overriding obligation', is of crucial importance as it applies before and at the beginning of each voyage, and thus it covers the time of loading. Events occurring at the load port are very critical for preserving the safety of solid bulk cargo, where the moisture content present in the goods could significantly change by reason of rain or the cargo presented for shipment contains high moisture content that goes unnoticed by the parties. However, if the charterer could establish that the vessel was unseaworthy before she embarked on her voyage, and that by reason of that unseaworthiness the cargo liquefied, the carrier will be found liable irrespective of the dangerous character of the cargo.<sup>260</sup> There are several examples under which a vessel's unseaworthiness could contribute to the liquefaction of the cargo, for instance: solid bulk cargo being loaded into wet holds, cargo residues from the previous shipment that may alter or interfere with the moisture content of the solid bulk cargo loaded, mechanical faults that may cause excessive vibrations, blocked bilges which may fail to drain out any excessive drench within the holds, hull fouling which may result in speed reduction and thus expose the vessel to

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Limitation of Liability. Although it was held that charterers were not in breach of the safe port warranty, the court went on to consider the remaining two issues owing to their importance.

<sup>257</sup> Ibid, [2017] UKSC 35. para.58-87.

<sup>258</sup> The fact of the case can be summarised as follow: during discharging operations at Kashima port in Japan, the Vessel sought to leave the port for open sea during a storm. There was no option but to sail through the narrow Kashima Fairway, being the only route into and out of the port. She was met with severe weather at the entrance, causing her to ground and ultimately to break up. There were certain prevailing characteristics that were known features of Kashima port, in that its quays were susceptible to 'long swell' and the Kashima Fairway was vulnerable to severe 'northerly gales'. However, it was a 'rare' event that both the swell and the gale would occur at the same time. Nevertheless, it was concluded that even though the two dangers, taken individually, were normal features of the Kashima port, the concurrent coincidence of those events could not make it a normal attribute of the port, and thus the port cannot be regarded as unsafe.

<sup>259</sup> Ibid, *The CMA Djakarta* [2004] 1 Lloyd's Rep. 460. (para.29 and para.30).

<sup>260</sup> Issues of causation are discussed in Chapter 4.

extreme rolling and pitching in heavy weather conditions, or hull failure that may cause water ingress. In addition, if the Hague-Visby Rules are incorporated into the charter, the vessel's unseaworthiness could cause the carrier to lose his entitlement to the indemnity enshrined in Article III Rule 6, and thus be liable to compensate the charterer for destroying the liquefied cargo onboard.<sup>261</sup>

With reference to the 'duty of care' obligation, the inherent vice defence is of particular importance, as well as the carrier's need to adopt a safe system in place to ensure the cargo loaded is delivered in the same condition. Condensation within a hold loaded with liquefiable solid bulk material may require the carrier to ventilate the cargo during voyage, unless it was unreasonable for him to do so during heavy storm.<sup>262</sup> Similarly, inadequate, or unsealed, hatch covers that allow water ingress may also find the carrier in breach of his duty towards the cargo. However, the burden of proof is upon the carrier to establish that the loss or damage was resulted from the cargo's characteristics, but he needs not to show that he was not negligent in performing his cargo care duty. It is upon the claimant, being the charterer, shipper and/or cargo receivers, to establish that the loss was caused due to the carrier's negligence in caring for the cargo. Nevertheless, these disputes carry significant evidential burdens upon both parties, and the loss of the ship makes such an exercise even more burdensome. Therefore, it could be recommended to all the parties involved in this carriage, and in particular to the carrier, to take sufficient sealed samples of the cargo at the time of loading, which should be preserved until completion of discharge at the destination port. This may assist to determine the characteristics of the cargo as loaded, should the fate of the vessel ends at the bottom of the sea.

Nevertheless, this thesis identified an unsettled legal issue in connection with the inherent vice defence. Since carriers are presumably aware of the liquefaction risk of solid bulk materials, such knowledge would require them to exercise higher standards of cargo care to deliver the required 'sound system' and discharge their burden. In cases where the charterer, or shipper, misinform the carrier, or conceal from him, the actual moisture content level present in the cargo, then they negated the possibility of liquefaction and the carrier would be forgiven for failing to put stricter safe system in place. However, even if the carrier follows strict safe procedures, the propensity of solid bulk cargoes to liquefy may be easily triggered by reason of a heavy, yet predicted or foreseen, storm

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<sup>261</sup> Subject to the terms of the contract, but the incorporation of the Rules into the charter may dilute the obligation upon the carrier to deliver a seaworthy ship to the exercise of due diligence, as opposed to the strict liability imposed under common law.

<sup>262</sup> Or where the master is contractually obliged to follow charterer's order on ventilation.

during the sea passage. The legal authorities, however, points toward only accepting fortuitous weather conditions, which are not reasonably foreseeable, in order to entitle the carrier to rely on the perils of the sea defence. But, as outlined earlier, today's modern technology makes such non-predictions unlikely since weather forecast are often provided for the entire duration of the voyage. Therefore, the interrelation between inherent vice and peril of the sea defences, in the carriage of goods by sea context, should be revisited by the Court to determine whether foreseeable harsh weather conditions, that might have detrimental effect on the vice of the cargo loaded, could still exempt the carrier's liability in such incidents.

It was outlined earlier,<sup>263</sup> that the perils of the sea defence applied, in *The Canada Rice Mills* case,<sup>264</sup> where the carrier discharged his Article III obligations but the cargo, nonetheless, was damaged by reason of the ship encountering heavy weather during her voyage. Although this decision received criticism because the weather conditions were predictable at the time, it appears perfectly applicable, or at least suitable, in most of today's solid bulk incidents. Most of the reported solid bulk casualties involved cargoes which are, or have been, wrongly categorized in the IMSBC Code. These cargoes would not have liquefied *but for* the predictable and foreseeable weather condition, as well as the mis-categorisation of the cargo by the IMO. In Chapter 4, below,<sup>265</sup> it is established that the shipper is strictly liable not to load dangerous cargo, and thus the law does not forgive the shipper for loading a dangerous cargo, irrespective of his compliance with applicable regulations.<sup>266</sup> By contrast, the carrier should not be stripped out of his peril of the sea defence only because the weather, which caused the cargo to liquefy, was predictable. Fortunately, *The Canada Rice Mills* decision has not been overruled, and it could possibly answer carriers' prayer excluding their liability, where they are not in breach of their obligations but the weather, combined with the vice of the goods, have caused damage to the cargo.

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<sup>263</sup> See the second paragraph in 3.4.1(e) Causation: peril of the sea causing inherent vice damage, concerning the criticism for the decision in *The Canada Rice Mills* case [1941] A.C. 55.

<sup>264</sup> [1941] A.C. 55.

<sup>265</sup> See 4.3(b) The shipper's knowledge of his cargo's dangerous character.

<sup>266</sup> The question of whether liquefiable cargoes are 'dangerous', is discussed in Chapter 4 (see 4.2.2).

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## Chapter Four:

### Duty not to ship dangerous cargo

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## CHAPTER 4: Duty not to Ship Dangerous Cargo

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### 4.1 Introduction

The liability for ensuring the safe shipment of any cargo is not always the responsibility of the shipowner, as the parties may contractually agree otherwise. There are very significant obligations placed on shippers who are generally in a better position to have all the necessary knowledge about the cargo prior to its shipment.<sup>1</sup> Such knowledge can essentially help in determining all the safe measures that need to be undertaken in order to ensure that the cargo in question can be safely loaded, stowed and carried aboard any vessel. Therefore, the law imposes certain obligations on shippers to ensure that their goods are in a fit condition for the carriage, and if shippers fall short of

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<sup>1</sup> *Pierce v Winsor* (1861) 2 Sprague 35. (US decision), commenting on the rule in *Brass v Maitland* (1856) 6 El & BL.470;119 E.R. 940. (Discussed below in fn.107).

that obligation they may be found liable for any loss arising from their own default.<sup>2</sup> These obligations are material because shippers, from a commercial perspective, may only be keen to ensure that their cargo is loaded on board a vessel as to enable them to tender bills of lading, or other relevant shipping documents, to a receiver at the destination port in exchange for payment. It is a set principle that *'the obligation on the carrier to furnish a seaworthy ship, and on the merchant to supply the goods packed in a fit condition for the journey, are there treated of as coextensive.'*<sup>3</sup> The shipper, therefore, must notify the carrier about the characteristics of any given cargo and whether any special arrangements need to be made for their shipment. Undoubtedly, such a duty becomes even more significantly important when the carriage of a dangerous cargo is involved, whereby any failure to provide such information can lead to unfortunate incidents as the carrier may improperly load the cargo due to their lack of knowledge that special precautions should have been put in place to load that cargo. This chapter considers the shippers', as well as charterers', contractual duty not to ship dangerous cargoes, and outlines the owners' rights under the charter party when presented with such goods.

#### 4.2 Duty not to ship dangerous goods

Historically, it was found unnecessary to establish regulations that specifically deal with the carriage of dangerous goods.<sup>4</sup> However, the development of international trade and the introduction of specialised vessels have necessitated the need to allow the shipment of dangerous cargoes in order to meet the ever-changing demands of the maritime industry, such as: hazardous substances, flammable gases and nuclear materials. Therefore, international regulations have been established to assist all the parties to safely pack, load and carry such cargoes by providing information on the dangers associated with the shipment of these cargoes and practical guidelines on how such cargoes can be safely transported by sea.<sup>5</sup> Certainly, rules of law have also been adopted to facilitate the safe shipment of these cargoes. It has been established for over a century that shippers are contractually obligated, under a contract of carriage, towards the suitability of their goods for the shipment, and to the giving of notices relating to any dangerous characteristics of their goods.<sup>6</sup> At common law, the

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<sup>2</sup> *Brass v Maitland* (1856) 6 El & Bl.470;119 E.R. 940.

<sup>3</sup> *Ibid*, *Brass v Maitland* p.942.

<sup>4</sup> The first reference to such regulations can be traced back to the British Merchant Shipping Act 1894. See section 301 of the 1894 Act entitled 'Dangerous Goods and Carriage of Cattle'.

<sup>5</sup> For the latest recommendations on the safe transport of dangerous cargoes, see:  
<http://www.imo.org/OurWork/Safety/Cargoes/Pages/Default.aspx> [Accessed October 2014].

<sup>6</sup> *Williams v East India Company* (1802) 3 East 192.

implied obligation on shippers not to ship dangerous cargo, unless due notice is given to carriers, was held in *Brass v Maitland* by Lord Campbell C.J. and Wightman J. as follow:

*“There is an implied undertaking on the part of shippers of goods on board a general ship that they will not deliver to be carried on the voyage packages of a dangerous nature, which those employed on behalf of the shipowner may not on inspection be reasonably expected to know to be of a dangerous nature, without giving notice.”*<sup>7</sup>

The rule therefore allows the shipment of dangerous goods provided that the carrier in question is aware of their dangerous nature, either by means of a shipper’s notice or his own knowledge. This entails that if the dangerous nature of the goods was apparent to the carrier, or could have been discovered by reasonable inspection of the goods, then such notice is deemed served on the carrier and the shipper will not be liable.<sup>8</sup> However, the carrier’s knowledge cannot be expected to foresee some unobvious characteristics in a cargo that create an unusual danger, which is different in kind to the dangers commonly associated with such goods, and thus the shipper may remain liable in such circumstances.<sup>9</sup>

The vital importance of this implied obligation is to give the carrier the chance either to consent and carry the dangerous cargo or simply reject it. Subject to the terms of the charterparty,<sup>10</sup> if the carrier consents to the shipment of the dangerous cargo, he must take all necessary precautions and measures to ensure their vessel is fit to receive the named cargo,<sup>11</sup> and that it can be safely transported without any damage to the vessel, crew and other cargoes on board. The following elements must be considered when an incident involving the carriage of dangerous cargo occurs: First, whether the cargo was ‘dangerous’ for which the carrier did not consent for its shipment. Second, whether the shipper of the cargo communicated any notices to the master about the dangerous character of his cargo. Third, whether that ‘dangerous’ nature was apparent to the carrier upon reasonable inspection prior to loading. Fourth, having the master received such notices, whether the cargo was properly loaded in accordance with current safe practice and, finally, whether

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<sup>7</sup> (1856) 6 El & BL.470;119 E.R. 940.

<sup>8</sup> See *Acatos v Burns* (1878) 3 Ex.D.282 where the court dismissed the claim that the shipper of maize, which later heated and sprouted, was liable because such danger was not reasonably apparent to him. However, this decision contradicts the absolute nature of the warranty, not to ship dangerous cargo, set out in *Brass v Maitland* (1856) 6 El & BL.470;119 E.R. 940 (discussed below, see Duty to notify the carrier about the dangerous character of the goods). Also, see Cooke, J. et al. (2014). *Voyage Charters* para 6.57.

<sup>9</sup> *The Athanasia Comminos* [1990] 2 K.B. 742. Discussed further below, see 3.4 Knowledge of the carrier.

<sup>10</sup> Discussed further below (Can the carrier refuse to carry dangerous cargo?).

<sup>11</sup> Failure of which means the carrier failed to provide a seaworthy ship (considered in Chapter 3).

the resulting casualty was caused by the dangerous nature of the cargo.<sup>12</sup> Each of these elements is considered below.

#### 4.2.1 Meaning of 'dangerous' cargo

Under the Hague-Visby Rules, the defining authority on the meaning of dangerous cargo is *Effort Shipping Co. Ltd. v Linden Management S.A. and Other ('The Giannis NK')*.<sup>13</sup> In this case, a cargo of ground-nut extraction meal pellets loaded aboard the vessel was later found infested with insects, namely Khapra beetle. As a result, a quarantine and an order to dump the ground-nut, and other cargoes on board, were imposed on the vessel at the port of discharge. The House of Lords had to deal with the meaning of 'dangerous cargo' under Article IV Rule 6 of the Hume Rules which starts with the following sentence: '*Goods of an inflammable, explosive or dangerous nature to the shipment ...*'<sup>14</sup> The House of Lords held that the word 'dangerous' must be given a broad meaning and not confined to inflammable or explosive nature, or their alike.<sup>15</sup> The term 'dangerous nature' is not intended to be limited to cargoes that are prone to explode or catch fire alone, but they also refer to all other dangerous cargoes that could endanger the vessel or other goods on board.<sup>16</sup> Their Lordships classified that 'danger' as one that could cause, direct or indirect, physical damage to the vessel or to other goods alone without being dangerous to the ship itself.<sup>17</sup> This rule was upheld because the shippers argued that no 'direct physical damage' was done to other cargoes on board the vessel, by reason of the ground-nuts infestation since the Khapra Beetle did not spread out to other holds. The House, nevertheless, held that the ground-nuts were 'physically dangerous' to other cargoes because the dumping of all cargoes on board was 'a natural and not unlikely consequence' of shipping the infested cargo.<sup>18</sup> Therefore, their Lordships found no reason to restrict the word 'dangerous' to cargoes which only cause direct physical damage to other goods but it is similarly extended to include indirect physical damage as well.<sup>19</sup> This finding also embraces the wording of Article IV Rule 6 itself which holds the shipper liable for '*all damages and expenses directly or indirectly arising out of or resulting from such shipment.*'

<sup>12</sup> Mr Justice Mustill, *The Athanasia Comninos* [1990] 1 Lloyd's Rep. 277. p.281.

<sup>13</sup> [1998] Lloyd's Rep. 337. The common law definition is also considered below.

<sup>14</sup> Similar wording is found in the Hague-Visby Rules, so the same interpretation applies to both Rules.

<sup>15</sup> Ibid, per Lord Lloyd at p.341. Also see *Chandris v Isbrandtsen-Moller Co. Inc.* (1950) 83 Li.L.Rep. 385;[1951] 1 K.B. 240.

<sup>16</sup> See Mr Justice Devlin in *Chandris v Isbrandtsen-Moller Co. Inc.* [1951] 1 K.B. 240. p.246.

<sup>17</sup> Ibid, p.341.

<sup>18</sup> Ibid, p.341.

<sup>19</sup> Ibid, p.341.

On the other hand, the common law definition of 'dangerous goods' is potentially wider as it covers cargoes which are both physically and legally dangerous.<sup>20</sup> Goods can be 'legally dangerous' if they subject the vessel to detention, seizure or delay.<sup>21</sup> In *Mitchell Cotts v Steel*,<sup>22</sup> Mr Justice Atkin held the view that a cargo which is likely to cause delays or detention of a vessel was '*precisely analogous to the shipment of dangerous cargo which might cause the destruction of the ship*'.<sup>23</sup> However, Mr Justice McCardie warned in *Transoceania v Shipton*<sup>24</sup> that extending the rule of dangerous goods to matters not involving physical danger could open '*a wide vista of responsibility ... against the shippers of goods*'.<sup>25</sup> McCardie J. found that Mr Justice Atkin's decision enlarged the duty of a shipper beyond the dangerous goods principle,<sup>26</sup> and '*if the rule as to dangerous goods is extended to matters which do not involve danger, a very wide field is opened for discussion*'.<sup>27</sup> As a result, later decisions limited the scope of Mr Justice Atkin's principle to the effect that a cargo will be 'legally dangerous' if it violates some regulations or laws that are directly relevant to the carriage of the specific cargo in question.<sup>28</sup> The House of Lords in *The Giannis NK* found it unnecessary to consider whether goods which pose 'legal danger' to a ship or her cargo may be dangerous,<sup>29</sup> but a definite answer was given in *The Darya Radhe*<sup>30</sup> where the Court of Appeal held that the word 'dangerous' used in Article IV Rule 6 could not be intended to go beyond physical danger.<sup>31</sup> In this case, live rats were discovered in a cargo of Brazilian soyabean meal pellets during the loading operation. The Court dismissed the shipowner's claim that the cargo was dangerous because, under the term implied by the common law, for a cargo to be regarded as dangerous it must involve the violation of, or non-compliance with, some municipal legal obstacle related to its carriage or

<sup>20</sup> *Mitchell Cotts v Steel* [1919] 2 K.B. 610.

<sup>21</sup> *Ibid*, *Mitchell Cotts v Steel*.

<sup>22</sup> [1919] 2 K.B. 610.

<sup>23</sup> *Ibid*, p.614. In this case, a vessel was detained for 22 days because her cargo of rice could not be discharged at Piraeus without the permission of the British Government, a fact known to the shipper but not the shipowner. The shipper failed to obtain that permission and also failed to warn the shipowner, who could not have reasonably known, that such permission was necessary. Therefore, the owners were entitled to recover damages for the delay caused by the nature of the goods.

<sup>24</sup> [1923] 1 K.B. 31.

<sup>25</sup> *Ibid*, p.39. In *Transoceania v Shipton*, stones found in a cargo of barley prevented it from being discharged at the destination port due to lack of the necessary equipment at the terminal, which delayed the vessel for one and a half days. McCardie J. held that "*there is no warranty that this barley was capable of being handled and unloaded expeditiously and effectively by the machinery and appliances in ordinary use at the port of discharge*" [1923] 1 K.B. 31. p.40.

<sup>26</sup> *Ibid*, p.39.

<sup>27</sup> *Ibid*, p.40.

<sup>28</sup> See *The Darya Radhe* [2009] 2 Lloyd's Rep. 175.

<sup>29</sup> [1998] Lloyd's Rep. 337. p.613 (per Lord Lloyd).

<sup>30</sup> [2009] 2 Lloyd's Rep. 175. (per Tomlinson J).

<sup>31</sup> The court held that the meaning of the word dangerous in the term implied by the common law is the same as that in the Hague Rules. [2009] 2 Lloyd's Rep. 175. p.185, para.26.

discharge.<sup>32</sup> The soyabean loaded with rats did not pose a danger to the vessel itself, nor it imposed any threat of quarantine or dumping orders were expected, but it merely incurred additional expense and delay, thus it was found not dangerous.

### *Dangerous cargo: common law vs. Hague-Visby Rules*

Nevertheless, how the definitions of 'dangerous goods' under both common law and the Rules can be read together is outside the merit of this thesis but, in simple terms, the common law concept provides a duty upon the shipper, whereas Article IV Rule 6 provides an express immunity to the carrier where dangerous goods have been loaded on board their vessel regardless of their consent.<sup>33</sup> The differences amongst both regimes are one of analysis and another of extent. The common law duty requires an analysis of a duty and its breach, whereas the analysis of Article IV Rule 6 is one of indemnity. Also, the breadth of the 'dangerous goods' definition is certainly different.<sup>34</sup> Although the two rules are not necessarily identical,<sup>35</sup> yet they appear to be similar in effect. Under both rules the carrier must prove three elements that, firstly, the shipper shipped goods of a dangerous nature; secondly, neither the carrier nor any of his agents consented to the shipment of such goods and, thirdly, that the carrier suffered damages and expenses resulting from such shipment.<sup>36</sup> However, there is some uncertainty as to whether Article IV Rule 6 displaces the common law duty. Certainly, the common law rule remains enforceable insofar as the goods concerned are 'legally' dangerous, since Article IV Rule 6 is only concerned with 'physical' danger. Though, it remains a matter of debate where the goods only present a 'physical' danger. In *The Fiona*,<sup>37</sup> Judge Diamond Q.C.'s view was that Article IV Rule 6 superseded the common law principle as it provides a right of indemnity rather than a contractual duty, and that such Rules should be given effect without any reference to domestic rules of law.<sup>38</sup> In *The Giannis NK*, Lord Justice Hirst held the view that there is neither overlap nor duplication in relation to legally dangerous goods between Article IV Rule 6 and the common law duty, since the Rules do not cover goods that pose a 'legal' danger, but he accepted

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<sup>32</sup> Ibid, p.175.

<sup>33</sup> For the relationship between the common law and the Hague Rules, see Cooke, J. et al. (2014). *Voyage Charterers* para 85.431.

<sup>34</sup> As discussed above, it has been established that Article IV Rule 6 does not go beyond physical danger, unlike the common law rule which covers goods that pose both physical and legal dangers.

<sup>35</sup> In *The Darya Radhe* [2009] 2 Lloyd's Rep. 175, Tomlinson J declined to apply the common law duty derived from *Mitchell Cotts v Steel* [1916] 2 K.B. 610.

<sup>36</sup> See Mustill J. in the *Athanasia Comninos* [1990] 1 Lloyd's Rep. 277. p.281; and see Judge Diamond Q.C. in *The Fiona* [1993] 1 Lloyd's Rep. 257. p.268.

<sup>37</sup> [1994] 2 Lloyd's Rep. 507.

<sup>38</sup> [1993] 1 Lloyd's Rep. 257. pp.267-268.

that, undoubtedly, a claim in respect of physically dangerous goods would nowadays be based on Article IV Rule 6.<sup>39</sup>

It has been established that English courts regard these Rules as a self-contained code in order to best fulfil the purpose they were designed for,<sup>40</sup> namely to achieve a *'pragmatic compromise between interests of owners and shippers; and ... [they are] designed to achieve a part harmonization of the diverse laws of trading nations at least in the areas which the convention covered.'*<sup>41</sup> Judge Diamond Q.C. summarised the position in *The Fiona* that the owners will be in principle entitled to the indemnity expressed under Article IV Rule 6, provided they prove the said three elements, the owner's exclusive remedy must then lie in seeking the indemnity under this rule. He found it an incorrect construction of the rule that if owners fail to establish their entitlement to the indemnity, they can nonetheless fall back to enforce the common law duty.<sup>42</sup>

#### 4.2.2 Are solid bulk cargoes 'dangerous'?

Goods are most frequently considered 'dangerous' if they pose any risk of damage to the crew, ship or other cargoes on board,<sup>43</sup> but some cargoes may nonetheless be so regarded despite the fact that their relevant type most commonly bears no such risk. In *the Athanasia Comninos*,<sup>44</sup> unusually gassy coal on board the vessel rendered this particular shipment dangerous, regardless the fact that most coals are gassy and carriers are well aware of their hazards. Also, 'fuel oil emitting flammable vapours' loaded on the vessel *Fiona* was also considered dangerous because the risks associated with the carriage of certain types of fuel oil were unknown at that time.<sup>45</sup> The court also considered 'dangerous' a cargo which caused extreme contamination to the ship's holds that necessitated

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<sup>39</sup> [1996] 1 Lloyd's Rep. 577. p.587. The House of Lords did not consider this point [1998] 1 Lloyd's Rep. 337.

<sup>40</sup> Discussed further below.

<sup>41</sup> Per Lord Steyn in *The Giannis NK* [1998] 1 Lloyd's Rep. 337. p.346.

<sup>42</sup> [1993] 1 Lloyd's Rep. 257. p.268. He stated that: "It is not, I consider, a correct procedure, where the rules apply by statute, to commence by considering the common law position relating to the obligation of a shipper as regards shipping dangerous goods and then to go on to ask whether the rules make any difference to the pre-existing common law. If, as I think is reasonably clear, the owners are in principle entitled to claim an indemnity under art. IV, r. 6 ... then the owners' exclusive remedy must lie in seeking an indemnity under this rule. It is in my view an incorrect construction of the rule that, if they fail in this endeavour, the owners can nevertheless fall back on seeking to enforce the implied common law undertaking."

<sup>43</sup> In relation to goods which may damage the environment, these are only expressly stated as 'dangerous' in Article 32 of the Rotterdam Rules, which are not considered under this thesis.

<sup>44</sup> [1990] 1 Lloyd's Rep. 277; [1990] 2 K.B. 742.

<sup>45</sup> *The Fiona* [1994] 2 Lloyd's Rep. 257.

extensive cleaning by specialists before she could load her next cargo in *The Orjula*.<sup>46</sup> However, albeit the Court of Appeal in *The Berge Sund*<sup>47</sup> accepted in principle that a cargo which contaminates a vessel might amount to be of a dangerous nature, it held that the mere necessity to clean after a voyage does not necessarily render a cargo dangerous.<sup>48</sup> Accordingly, it seems a question of degree for such cargoes to be regarded as 'dangerous' because in *The Berge Sund* the cleaning operation was the natural result from following the charterer's orders, which owners should have expected following discharge of the cargo loaded. Whereas, in *The Orjula* the holds were contaminated with hydrochloric acid and required qualified sub-contractors to clean her, which went beyond owners' ordinary duties.<sup>49</sup>

(a) Legal authorities where liquefiable solid bulk materials were found dangerous

However, following from the above instances where cargoes were found dangerous, solid bulk materials have no propensity to explode, nor can they contaminate a vessel's hold and render her fitless to other cargoes, so are they dangerous? Solid bulk cargoes are defined in the International Maritime Solid Bulk Cargoes (IMSBC) Code as:

*"Any cargo, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material generally uniform in composition, which is loaded directly into the cargo spaces of a ship without any immediate form of containment."*<sup>50</sup>

The one and only legal authority on liquefiable solid bulk cargoes under English law is *Micada Compania Naviera S.A v Texim*.<sup>51</sup> In this case, the *Agios Nicolas* was chartered to load iron ore on the Baltime Charter form, which contained the following clause:

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<sup>46</sup> [1995] 2 Lloyd's Rep. 395. In this case, drums of hydrochloric acid and sodium hypochlorite shipped onboard the vessel were subsequently leaked as a result of damage to the containers. The charterer successfully brought an action in tort against the distributors for their failure to take preventative measures to neutralise the danger.

<sup>47</sup> [1993] 2 Lloyd's Rep. 453.

<sup>48</sup> In this case, the arbitrators found that the vessel was off-hire for 20 days during which the vessel's holds required cleaning after the discharge of a cargo with high sulphur content. However, the Court of Appeal overruled the umpire's decision on the basis that the cleaning operation was an ordinary activity that was required after following the charterer's order to load the said cargo, despite that there was extraordinary cleaning.

<sup>49</sup> Also, in *The Bela Krajina* [1975] 1 Lloyd's Rep. 139, only a week was occupied to clean the vessel so it did not render the cargo 'dangerous'. Most recently, in *The LNG Gemini* [2014] EWHC 1347 (COMM), it was held that LNG (Liquefied Natural Gas) cargo would only be considered 'injurious to the vessel' if it has a tendency to cause physical damage, but the mere necessity to clean the holds is insufficient. In this case, the managing owner of a LNG carrier alleged that the LNG cargo loaded by the charterer had contaminated the vessel's pumps and tanks, and consequently required major repairs during dry-dock, thus he claimed that the cargo damaged the vessel and such expenses should be for charterer's account. The court dismissed the claim because a cargo could not be 'injurious to the vessel' within the meaning of the charterparty without causing any physical damage.

<sup>50</sup> Section 1.7.25 Definitions. Also see SOLAS Chapter VI, Part A, Regulation 1.2.

<sup>51</sup> [1968] 2 Lloyd's Rep. 57.

*“No livestock nor injurious, inflammable or dangerous goods (such as acids, explosives, calcium carbide, ferro silicon, naphtha, motor spirit, tar, or any of their products) to be shipped.”*

Instead, iron ore concentrate was loaded, a cargo which owing to its moisture content can liquefy and the vessel therefore was required to have shifting boards installed in order to safely carry such cargo.<sup>52</sup> Such boards were not fitted to the *Agios Nicolas*, and the cargo later liquefied for which the vessel had to deviate to a port of refuge. Accordingly, owners claimed their right for payment of hire, alternatively damages for detention of the vessel, throughout the deviation exercise, and for the expenses incurred by owners to discharge, treat, and reload the cargo. The court had to consider, amongst other issues,<sup>53</sup> whether the cargo loaded aboard the vessel was of a dangerous nature, which the master did not consent to carry. Iron ore concentrate can be safely loaded with moisture content below 7 per cent<sup>54</sup> normally tested by a representative test sample.<sup>55</sup> If its moisture content is in excess of 7 per cent, then it cannot be loaded without shifting boards being fitted.<sup>56</sup> A prudent master must not knowingly load iron ore concentrates with moisture content in excess of 11 per cent under any circumstances.<sup>57</sup>

In this case, the master raised his concern about the moisture content of the cargo and the need to have shifting boards fitted to the vessel with the shippers during the loading operations. However, the shippers assured him that his concerns were unfounded and that a Certificate of Humidity detailing the condition of the cargo, including its moisture content would be handed to the charterers in accordance with customary practice. The shippers also ascertained to the master that the moisture content was between 4-5 per cent.<sup>58</sup> All of the cargo on board the *Agios Nicolas* had in fact moisture content in excess of 7 per cent, with some parts being in excess of 11 per cent. As a result, the court found, without hesitation, that the cargo was indeed dangerous because it was simply different from what it seemed to be.<sup>59</sup> Such cargoes are known to be thixotropic<sup>60</sup> and they can

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<sup>52</sup> It is a practical requirement to install such boards to any liquefiable cargo in order to minimise the free water effect, thus it helps to prevent the vessel from rolling over.

<sup>53</sup> The court also considered the meaning of ‘such as’ in this context, see [1968] 2 Lloyd’s Rep. 57. pp.61-62. Also, it considered whether the master was obliged to re-load the cargo after it was being discharged, see p.62.

<sup>54</sup> This represents the *Flow Moisture Point* (FMP) which is the moisture content percentage at which a solid bulk cargo starts to flow and eventually liquefy. The IMSBC Code sets out some tests to determine the FMP of any given cargo. The FMP definition can be found in the IMSBCE Code Section 1.7.10.

<sup>55</sup> Section 1.7.23 (IMSBC Code) defines it as a sample of sufficient quantity for the purpose of testing the physical and chemical properties of the consignment to meet specified requirements.

<sup>56</sup> Ibid, *Micada Compania v Texim* (para.9).

<sup>57</sup> This percentage (11%) represents the *Transportable Moisture Limit* (TML) which is the maximum moisture content of a cargo that is considered safe for carriage. The TML is determined by test procedures outlined in the IMSBC Code. For definition of the TML, see the IMSBC Code Section 1.7.27.

<sup>58</sup> Ibid, pp.58-59.

<sup>59</sup> Ibid, p.62.

therefore liquefy on vibration if shipped at moisture content above a critical amount.<sup>61</sup> In describing such a cargo, Donaldson J. stated that:

*"In a word, what he [the master] was being offered was a wet wolf in a dry sheep's clothing and that the cargo was something radically and fundamentally different from that which it appeared to be. In those circumstances it seems to me that the cargo was dangerous beyond all argument."*<sup>62</sup>

The IMSBC Code categorises three different types of cargo, namely Group A cargoes which may liquefy, Group B cargoes which pose a chemical hazard and Group C cargoes which are neither liable to liquefy nor to possess chemical hazard.<sup>63</sup> Since Group A cargoes fall within the description given above, that they can liquefy on vibration if shipped at a moisture content above a critical amount, then one can argue that such cargoes should also be considered dangerous. Most of these cargoes appear to be reasonably dry but when shipped with high moisture content, they become liable to liquefy. Upon liquefaction, such cargoes pose imminent danger to the crew, vessel and other cargoes on board and therefore amount to a direct physical damage with the loss of lives and goods on board, or indirect damage for other cargoes by reason of deviation and delay where the vessel is fortunate to remain stable and seek a place of refuge.<sup>64</sup> Nevertheless, the finding of a cargo to be dangerous relates to the specific dangerous characteristics that could arise from the shipment of the particular consignment in question, rather than being related to the dangers that are most frequently associated with goods of the same type.<sup>65</sup> In *The Athanasia Comninos*, the fact that the coal actually loaded on board the vessel had extraordinary hazards, a propensity to emit methane gas in very high quantities, to a degree that was unusual for coal in general rendered this particular shipment to be dangerous. Mustill J. stated that:

*"I can see no reason in principle why a special danger which consists of a difference in degree, rather than in kind, from the known danger should not be regarded as lying outside the area of risk which the shipowner has contracted to bear."*<sup>66</sup>

In other terms, where a carrier loads a dangerous cargo with consent to run the risks that are generally known to this type of cargo, it does not imply that he also accepts risks that create a greater

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<sup>60</sup> The property of becoming less viscous when subjected to an applied stress such as to become fluid when shaken.

<sup>61</sup> Ibid, p.60. Each liquefiable solid bulk cargo has its own critical moisture content point at which it becomes dangerously liable to liquefy, known as the Transportable Moisture Limit (see fn.56).

<sup>62</sup> Ibid, p.62.

<sup>63</sup> The IMSBC Code, Sections 1.7.12, 1.7.13 and 1.7.14 respectively.

<sup>64</sup> As capsizing is mostly inevitable after the occurrence of a liquefaction but, of course, it is a matter of degree (how bad is the liquefaction).

<sup>65</sup> *The Athanasia Comninos* [1990] 1 Lloyd's Rep. 277.

<sup>66</sup> [1990] 1 Lloyd's Rep. 277. p.283.

danger which is different from those that normally occur with this type. In the *Harmony DG*,<sup>67</sup> an American legal authority, the court has taken a similar approach where it was concluded that the shipper remains strictly liable if he creates an additional danger, to a well-known dangerous cargo, which the carrier could not be expected to know.<sup>68</sup> However, even though the danger of liquefaction is a well-known risk associated with solid bulk cargoes that have high moisture content, this does not, therefore, automatically render all liquefiable solid bulk cargoes as 'dangerous'.<sup>69</sup> Mustill J. commented on *Micada Compania v Texim* that although '*the goods shipped were of a type which created well-known perils, ... misinformation as to the moisture content disguised the fact that the perils existed in a degree which the master could not have foreseen.*'<sup>70</sup> As a result, the court may find a cargo of solid bulk 'dangerous' where the master is misinformed about, or never been made aware of, its moisture content as to negate the occurrence of liquefaction. In *Micada Compania v Texim*, the action was brought by the carrier against the charterer for the payment of hire and other expenses incurred as a result of the delay, resulting from the vessel's deviation to a port of refuge to treat the cargo liquefied. Whether the misinformation provided by the shippers amounted to a misrepresentation claim was not pursued nor considered by the court.<sup>71</sup>

Another instance of a liquefiable cargo that was considered dangerous can be found in the Canadian case *The Erwin Schroder*.<sup>72</sup> In this case, the vessel was chartered to carry copper concentrate with a moisture content that required the fitting of shifting boards before loading, in accordance with the Canadian Concentrate Code. Although shifting boards were installed in the cargo spaces, the vessel nonetheless developed a list and had to deviate to Halifax. The master then requested the charterer to take delivery of the cargo in Halifax because the cargo was dangerous, having liquefied and endangered the stability of the vessel, and so discharged the cargo after the charterer had been refused an injunction by the court, which found the cargo to be dangerous.<sup>73</sup> The charterer then applied to the Exchequer Court of Canada for damages resulting from an alleged breach of the charterparty that the vessel was unseaworthy. What is most remarkable in this case is

<sup>67</sup> 533 F.3d 83 (2d Cir. 2008).

<sup>68</sup> In this case, a cargo of Cal-Hypo which is known to be dangerous and requires a safe storage temperature of less than 55°C, in accordance with the IMDG Code, was shipped onboard the vessel. Before loading, the cargo was packaged within 36 hours after manufacture, thereby preventing the cargo from cooling down, and accordingly hindered its safe storage temperature to less than 40°C. The shipper failed to warn the carrier about this heightened risk and, therefore, he breached his duty to the carrier.

<sup>69</sup> Following *The Athanasia Comminos*'s decision. [1990] 1 Lloyd's Rep. 277.

<sup>70</sup> Ibid, p.283.

<sup>71</sup> Arguably, this could have been a valid claim against the shippers but it seems the shipowners only pursued a contractual claim against the charterer since the charterparty prevented the shipment of dangerous cargo.

<sup>72</sup> *Heath Steele Mines v The Erwin Schroder* [1969] 1 Lloyd's Rep. 370. (Canadian Case).

<sup>73</sup> Ibid, p.371.

that even though there was compliance with the relevant code, the Court held that the Code was inadequate as to prevent the inevitable liquefaction. Mr Justice Pottier stated that:

*"In my opinion, the Canadian Concentrate Code ... is not adequate protection for cargoes of copper concentrate. The cargo in question shifted to port side and nothing in the said Canadian Concentrate Code would prevent this movement."*<sup>74</sup>

At the time of this charterparty, there was a great confusion in relation to the carriage of ore concentrates by sea.<sup>75</sup> Mr Justice Pottier relied on evidence given by a chemist that even if the shifting boards were installed properly, such boards can only prevent the cargo from shifting from one side to another, it does not relieve the ship from the risks of turning over because the cargo can still jeopardize the ship *'by movement in each side of the holds against the shifting boards and against the side of the ship'*<sup>76</sup>, thus the cargo would gather against one side of the vessel and ultimately turn her over. The decision of the Court was in favour of the owners as it found that if the vessel continued her voyage, her fate would have, in all probability, been in the bottom of the North Atlantic before it could reach her destination.<sup>77</sup>

#### (b) The verdict

As a result, in answering the said question of whether solid bulk cargoes are 'dangerous', the relevant authorities do not provide a certain answer. This is coupled with the gap identified between the IMSBC Code, which does not recognise liquefiable solid bulk cargo as dangerous, and the common law, which may find a liquefiable cargo dangerous in one instance but not in the other.<sup>78</sup> Although Group A cargoes, which are liable to liquefy, appear to have all the dangerous characteristics mentioned in the aforesaid cases, it cannot be conclusive that all Group A cargoes are dangerous.<sup>79</sup> Such group only present the danger of liquefaction when the moisture content is set to be very high.<sup>80</sup> If the moisture content is within the safe limits,<sup>81</sup> there is no reason to justify why such a cargo would be considered dangerous under common law. Similarly, Group C cargoes that are

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<sup>74</sup> Ibid, p.373.

<sup>75</sup> The Court reproduced an extensive part of a Swedish report detailing the risks of carrying ore concentrates at sea, [1969] 1 Lloyd's Rep. 370. p.372.

<sup>76</sup> Ibid, p.373.

<sup>77</sup> Ibid, p.372.

<sup>78</sup> Discussed further below, 4.2.3 the IMO's definition of dangerous cargo

<sup>79</sup> Nevertheless, although a cargo may regulatory be recognized as dangerous, the law considers whether, in light of the knowledge about its dangerous character, the cargo could still be probably carried. If the carrier fails to have a safe system in place to load the knowingly dangerous cargo, the dangerous character of the cargo may not be an issue, but the carrier's duty toward the cargo becomes of relevance. These issues are discussed in Chapter 3.

<sup>80</sup> The moisture content of any Group A cargo must be less than its TML (Transportable Moisture Limit) during voyage.

<sup>81</sup> Below the relevant TML.

considered safe and not liable to liquefy may nonetheless be dangerous if they pose the danger of liquefaction. It has been reported that some Group C cargoes, i.e. bauxite and iron ore,<sup>82</sup> had in fact liquefied and caused severe losses. Therefore, and in accordance with the aforesaid common law principles, such cargoes will not automatically be considered as dangerous unless they in fact liquefy and cause damage. The key phrase here is the 'different in degree rather than in kind' formula that was set up by Mustill J. in the *Athanasia Comninos*,<sup>83</sup> and therefore the same type of cargo may be found 'dangerous' in one incident but not necessarily in another. Consequently, there are two examples in which solid bulk cargoes will be considered dangerous. First, when the danger created by its liquefaction is different from, and/or in excess of, the extent of danger that is most commonly known to solid bulk cargoes in general<sup>84</sup> and, second, when the master is misinformed by the shipper about the actual moisture content of the cargo as to negate the possibility of liquefaction.

With regards to the first example given above, it is strongly arguable that the danger of liquefaction is currently a well-known hazard in the industry. Carriers ought to be well aware of the dangers associated with shipment of solid bulk cargoes, and therefore those who accept their shipment are doing so with full knowledge of the liquefaction danger associated with such goods. Accordingly, shippers need not notify them of its danger.<sup>85</sup> However, the extent of damage that is most commonly known with liquefiable solid bulk materials vary from nominal listing of the vessel up to resulting in her actual total loss. Most commonly, as it often happens in practice, the master is likely to be misinformed about the actual moisture content present in the cargo loaded, either intentionally or unknowingly by the shipper. Therefore, the danger created from the allegedly safe cargo that later liquefies and causes damage to the vessel, is different from the danger that the carrier accepted when they loaded the cargo that was perceived to be non-liquefiable. The carrier only consented to the shipment of a solid bulk cargo that was not liable to liquefy. If the cargo loaded later liquefies, the carrier should not be deemed to have accepted the risk which he intended to avoid at the time of loading. Therefore, and under these circumstances, such solid bulk materials should be

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<sup>82</sup> Several incidents of liquefaction have been reported concerning the carriage of bauxite. Most recently, the loss of the *Bulk Jupiter* on 2 January 2015 carrying bauxite from Malaysia with only one survivor out of its 19 crew members. The investigation report is not yet ready, though it is strongly believed that she was lost due to cargo liquefaction. See Gearbulk's, who is the vessel's shipowner, press release statements on this loss on: Gearbulk. 'Bulk Jupiter Update 14 January 2015' (available on: <http://www.gearbulk.com/news-media/news/2015/bulk-jupiter-update-14-january-2015/>) [Accessed February 2015].

<sup>83</sup> *The Athanasia Comninos* [1990] 1 Lloyd's Rep. 277.

<sup>84</sup> Such knowledge could ultimately evade shippers from liability if the carrier accepted the cargo with full knowledge of its dangerous nature, see below: 4.4 Knowledge of the carrier.

<sup>85</sup> See below 4.3 Duty to notify the carrier about the dangerous character of the goods.

regarded as 'dangerous'. To date, the solid bulk trade has claimed the loss of 127 seafarers within less than 8 years,<sup>86</sup> earning it the title as being 'the world's most dangerous cargo'.<sup>87</sup>

#### 4.2.3 The IMO's definition of 'dangerous cargo'

The earlier the dangerous character of any given cargo is established, the better the chances are to prevent incidents in the first place. The common law principles, discussed above, can only assist in concluding the dangerous nature of the solid bulk cargo in question after the damage has occurred and, possibly, even after the loss of ship and crew had happened. As to the pre-shipment stage, has the Code been effective in confirming the 'dangerous' character of any solid bulk cargo? The answer cannot be in the affirmative since, as afore-discussed,<sup>88</sup> the Code has wrongly categorised the cargoes.<sup>89</sup> The classification of solid bulk cargoes under Group A, the may-liquefy cargoes, is the first sign to indicate that such a cargo is dangerous, and carriers ought to treat such class with caution. Whereas, Group C cargoes are labelled as '*neither liable to liquefy nor to possess chemical hazards*' which amounts to a clear indication that such cargoes are 'safe'. However, having been reported that some Group C cargoes had in fact liquefied and caused the loss of life and property, then such cargoes can be 'dangerous', or alternatively 'not always safe'.

In this respect, the IMSBC Code has misled all the parties because not only the master would fail to follow strict precautions, but the requirements upon the shipper to provide signed certificates of the moisture content level only applies to cargoes which may liquefy, namely Group A cargoes.<sup>90</sup> Therefore, the parties will fail to apprehend the possibility of Group C liquefaction in spite of following the IMSBC Code provisions. At common law, it was established that when the shipper misinforms the master as to the moisture content level and the cargo later liquefies, the court will find such a cargo to be 'dangerous' because it was found different to what the carrier had accepted to load.<sup>91</sup> However, with Group C cargoes, in particular the ones that liquefied,<sup>92</sup> one could argue that it is actually the IMSBC Code here that has misinformed the parties as to the possibility of liquefaction. Both parties must have assumed that the bauxite loaded on board *the Jupiter*, the vessel

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<sup>86</sup> See Annex [1] Liquefaction-related incidents table.

<sup>87</sup> In January 2012, nickel ore trade amounted up to only 6% of the bulk trade but accounted for 80% of the fatalities. See: Mario Vittone. '*Bulk Trade-Off: Blood for Money in Indonesia*' (Available on: <http://gcaptain.com/bulk-trade-off-indonesia/>). Accessed April 2015.

<sup>88</sup> See Chapter 2 (2.7).

<sup>89</sup> Discussed in Ch.2, see 2.7.1.

<sup>90</sup> see section 4.3.2.

<sup>91</sup> See Mustill J. comments on the *Micada Compania v Texim* decision in the *Athanasia Comninos* at page 283, discussed above.

<sup>92</sup> i.e. bauxite and iron ore fines.

that was lost with her 22 crewmembers following the liquefaction of bauxite in 2015, was not liable to liquefy by reason of being classed as Group C cargo, but the fact that it liquefied rendered this particular shipment dangerous. The investigation report behind the loss of the *Jupiter*,<sup>93</sup> suggested that the consignment loaded was exposed to high water pressure at the mine before being sent to the terminal. This practice had in turn dramatically increased the moisture content well in excess of the limits prescribed in the IMSBC Code, hence liquefaction occurred. The shipper, as well as the carrier, may not be alerted as to the increase of the moisture content limit because the relevant period, when water was applied to the cargo, may well be within the 7 days validity of the moisture content certificate that was issued prior to loading.<sup>94</sup> This incident fits very well within Donaldson J.'s description of a '*wet wolf in a dry sheep's clothing*', whereby "*the cargo was something radically and fundamentally different from that which it appeared to be*", and therefore the bauxite loaded was without a doubt 'dangerous'.

The fact that it was the IMSBC Code, in this incident, that misrepresented the cargo raises some alarming concerns because there could be no guarantee that other Group C cargoes will not experience the same and liquefy.<sup>95</sup> One would expect the applicable regulation to be the first point of reference in determining safe practices to ensure safe shipment of any cargo. The parties often contractually agree to identify the party responsible for complying with international regulations, i.e. carrier to ensure all regulatory-compliance certificates are valid and onboard the ship at all times, or charterer to load any given cargo in accordance with applicable regulations.<sup>96</sup> If the charterer complies with the IMSBC Code in loading a Group C cargo that later unexpectedly liquefies, he should not be regarded in breach of his contractual obligation to comply with applicable regulations. However, any resulting loss or damage suffered by the carrier would have been caused by reason of following the charterer's order to load this cargo. Thus, in such circumstances, the charterer may be found liable to indemnify the carrier,<sup>97</sup> irrespective of his compliance with the relevant regulation.<sup>98</sup>

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<sup>93</sup> Issued by the Bahamas Maritime Authority, 'M.V Bulk Jupiter' IMO Number 9339947, Official Number 8001956 dated 18<sup>th</sup> August 2015.

<sup>94</sup> See 2.5.3 Cargo requirements: sampling, tests and certificates.

<sup>95</sup> See *The shipper's declaration required* in chapter 2 (under 2.7.1), as it was outlined that other shipments of bauxite onboard other vessels used exactly the same description as described in the IMSBC Code.

<sup>96</sup> For instance, see clauses 6(b) and 29 of NYPE 2015. Also, see 4.5.4 Compliance with safety regulations standard clauses, discussed below.

<sup>97</sup> Whereby, under a time charterparty, there could be an express or implied indemnity which entitles the carrier to be indemnified, by the charterer, for any losses the carrier may suffer due to his compliance with the employment clause, for instance: see the interpretation of clause 9 of Baltime form in *Royal Greek Government v. Minister of Transport* (1949) 83 Ll.L.Rep. 228 (express indemnity). For the application of an implied indemnity, see Coghlin, T et al. (2014). *Time Charters*. paras. 9.15-19.19. Under a voyage charter, the indemnity in Article IV Rule 6 of the Hague-Visby Rules may apply by way of a clause paramount in favour of the carrier in such circumstances.

Nevertheless, the IMSBC Code itself does not categorise neither Group A nor Group C cargoes as dangerous, whereby the IMO only classifies cargoes as 'dangerous' if they sit on the IMDG Code list. Only Group B cargoes, which possess a chemical hazard that could give rise to a dangerous situation on ships, are classified as 'dangerous' under the IMDG Code. These cargoes present dangers related to fire, fume or dust, and are therefore harmful to the crew, ship and the marine environment. Groups A and C solid bulk materials are not recognised as 'dangerous' under the IMDG Code because they do not fit within the criteria of any of the nine classes considered within the Code,<sup>99</sup> most of which pose the risk of flammability, toxicity and corrosivity but do not cover the risk of liquefaction.

### Courts' possible interpretation of the Code's misrepresentation

In many cases, shippers have been found liable where they misrepresent their cargoes, and such cargo later causes damage to the ship and other cargoes onboard. Carriers, under the Hague-Visby Rules for instance, are entitled to destroy any cargo that later becomes dangerous during the voyage, without any liability to indemnify the shippers.<sup>100</sup> Similarly, common law sets the duty upon shippers not to ship dangerous cargo as one of 'strict liability'. Therefore, shippers remain liable for loading dangerous cargo notwithstanding their knowledge about the dangerous character of their goods. However, where shippers carry out all the necessary tests and strictly comply with the IMSBC Code to establish the safety of the cargo, yet liquefaction occurs and causes damage, should they remain liable when in fact the IMSBC Code has failed to establish such 'dangerous' nature?<sup>101</sup> Applying the common law notion of 'strict liability', shippers remain so liable irrespective of their knowledge, or their failure to apprehend, the dangerous character of their cargo. Also, the carrier's immunity under Article IV Rule 6 of the Hague-Visby Rules means that the shipper will not be compensated if he loses his cargo, if it turns out to be dangerous giving the carrier a reason to destroy it during transit. As a result, the misrepresentation of some Group C cargoes under the Code, which happen to have Group A qualities, would be insufficient to alter the question of liability amongst the parties. One party should bear the risks for complying with an inadequate or ineffective regulation, through no

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<sup>98</sup> As outlined earlier in *The Erwin Schroder* [1969] 1 Lloyd's Rep. 370, the court found the relevant code inadequate and held the charterer liable for loading the dangerous copper concentrate cargo.

<sup>99</sup> Discussed in Chapter 2, see 2.4 The International Maritime Dangerous Goods (IMDG) Code above.

<sup>100</sup> Article IV Rule 6.

<sup>101</sup> See Nigel Lowry. 'Dismay at lack of action after bulk tragedies' (Available on: <http://www.lloydslslist.com/ll/daily-briefing/?issueDate=2015-02-03&expandId=456489>) [Accessed February 2015].

fault of its own, and that party should be the one putting this cargo for shipment in the first place, being either the shipper or charterer.<sup>102</sup>

The IMSBC Code has not yet been subject to any scrutiny by any court, as often parties tend to settle their dispute to avoid incurring unnecessary expenses, fighting a legal battle that would mostly focus on extensive technical analysis.<sup>103</sup> Nevertheless, one could question that since the IMSBC Code provisions relating to the shipment of bauxite have failed to achieve safe shipment, would an English Court follow the Exchequer Court of Canada's approach in *the Erwin Schroder*?<sup>104</sup> As aforementioned, Mr Justice Pottier found the Canadian Concentrate Code inadequate to prevent the liquefaction of the ore concentrate loaded onboard the vessel, despite compliance with its provisions, and the charterers were found liable to load a dangerous cargo. Similar to the present uncertainties with the carriage of bauxite, there was great confusion in the market relating to the safe shipment of ore concentrates during the *Erwin Schroder* case, hence the court rulings in favour of owners. Therefore, the English Court may follow the same course as their Canadian counterpart and find the IMSBC Code an inadequate protection for cargoes of bauxite, since compliance with its provisions may not prevent the liquefaction of such goods. Under the *Brass v Mainland* rule, shippers are strictly liable not to ship dangerous goods, and that the state of their knowledge is irrelevant if the dangerous character was unknown to them. Consequently, shippers of Group C solid bulk cargoes that later happen to liquefy, despite strictly following the IMSBC Code provisions, will be held liable for the losses caused by the liquefaction, provided the chain of causation was unbroken.<sup>105</sup> Arguably, the Group C cargoes that owners had accepted for shipment would be materially different from the same cargo when it later liquefies. The danger created from its liquefaction will amount to a greater risk that owners had not accepted to bear when they first loaded the cargo. This outcome follows Mustill J. judgment in the *Athanasia Comninos*, and shippers will be liable even if they have done their utmost best to ensure the safety of the cargo by strictly following the IMSBC Code, despite the unfairness this is.

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<sup>102</sup> This corresponds with Campbell J. view in *Brass v Mainland* (1856) 6 El & BL.470;119 E.R. 940 who suggested to treat the issue as a question of allocation of risk amongst the parties.

<sup>103</sup> For further analysis on how courts may interpret the Code, see 2.7.4 The unclear effect of the 'mandatory' application.

<sup>104</sup> [1969] 1 Lloyd's Rep. 370. (Canadian Case). Discussed above, see page 11.

<sup>105</sup> Discussed below 4.7.

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#### 4.3 Duty to notify the carrier about the dangerous character of the goods

It has been mentioned above that the carriage of dangerous cargo is not prohibited.<sup>106</sup> If the shipper provides a sufficient notice about the dangerous characteristics of his cargo to the carrier, as to assist the latter in making an informed decision of whether to accept or reject the cargo,<sup>107</sup> then such cargo can be carried by sea provided it is safe to do so. Though, the question arises is that what information amounts to a sufficient notice. In cases where the dangerous nature of a cargo is entirely concealed from the carrier, as in *The Kapitan Sakharov*<sup>108</sup> where explosive goods in a sealed container were withheld from the carrier, are relatively straight forward that no notice was given at all. In other cases, the master may be even misled about any danger, such as in *Bamfield v Goole & Sheffield Transport*<sup>109</sup> where a highly dangerous cargo of ferro-silicon was described as 'general cargo' in the shipping documents, thus the notice given was in no way 'sufficient'. While these scenarios may be obvious examples of a breach by the shipper to give notice, in many cases the shipper may give accurate information which insufficiently details the nature of the goods to be shipped. The court in *The Atlantic Duchess*<sup>110</sup> considered whether a new rule regarding the giving of notice should be adopted in cases where a special notice relating to the dangers of a particular cargo would be necessary. The case involved the carriage of crude oil which was found to be a permitted cargo under the relevant charter, but the issue was whether a special notice should have been given concerning the dangers of butanised crude oil that was loaded, which required additional measures in order to be carried safely. Pearson J. found that although all crude oil is well-known to be highly dangerous and strict precautions should be followed in its carriage, he concluded that a special notice would only be necessary if its carriage required special precautions beyond those needed for ordinary crude.<sup>111</sup> Accordingly, the general principle is that a special notice must provide information that enable *an ordinarily experienced and skilful carrier ... to appreciate the nature of the risks involved in the carriage and to guard against them.*<sup>112</sup>

##### (a) The format of the notice

There are two objectives behind the giving of notice, one that it provides sufficient details to enable the master to take any necessary precautions to ensure safe shipment of the given cargo, and another

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<sup>106</sup> See: 4.2 Duty not to ship dangerous goods, above.

<sup>107</sup> See: 4.5 Can the carrier refuse to carry dangerous cargo? Below.

<sup>108</sup> [2000] 2 Lloyd's Rep. 255.

<sup>109</sup> [1910] 2 K.B. 94.

<sup>110</sup> [1957] 2 Lloyd's Rep. 55.

<sup>111</sup> Ibid, p.95-96.

<sup>112</sup> Cooke, J. and others. (2014). *Voyage Charterers* para 6.53 .

to help him determines whether to accept or simply refuse the cargo.<sup>113</sup> Therefore, the shipper's notice must fulfil these two purposes. In terms of format, there is no judicial prescription in this regard, as the case law suggests that various forms are sufficient and accepted. In *The Athanasia Comninos*,<sup>114</sup> which involved an unusually gassy coal, the shipper gave oral notices stating that 'there is gas in our coal: watch your ventilation' and 'all coal is gassy – treat her as a tanker'. The shipper also supplied the master with a written notice including a standard-form letter and an extract from Thomas on Stowage reminding the master of the current method of carrying coal. Nevertheless, the Court considered that none of these oral and written communications were sufficient notices because these warnings failed to inform the master that the coal was especially gassy and that it was worse than usual.<sup>115</sup> Accordingly, the question of whether the shipper's notice is sufficient or not is a matter of fact based on the circumstances of each case.<sup>116</sup> There are, however, some statutory interventions aimed at reinforcing the position in an attempt to control the shipment of certain dangerous cargoes, for instance: s.21 of the Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 requires the shipper of any dangerous goods to be carried in bulk to provide the master with a written notice detailing the nature of the goods and their correct technical name,<sup>117</sup> and if he fails to provide such notification he shall be guilty of an offence.<sup>118</sup> In relation to solid bulk cargoes, s.4.2 of the IMSBC Code requires the shipper to provide sufficient information on the cargo prior to loading in order for the necessary precautions to be put into effect, and that such information must be confirmed in writing and by appropriate shipping documents. The information required from the shipper are listed in s.4.2.2, including: the cargo group (A, B or C), the likelihood of shifting, the need for trimming and the trimming procedures if necessary. Finally, it has been established that for the shipper to be discharged from his liability to give notice, he must serve such notice to the master or any other person who is concerned or employed in the management and/or navigation of the ship.<sup>119</sup>

<sup>113</sup> See below: 4.5 Can the carrier refuse to carry dangerous cargo?

<sup>114</sup> [1990] 1 Lloyd's Rep. 277.

<sup>115</sup> Ibid, p.290.

<sup>116</sup> See Abdul Hamid, W. (1996). *Loss or damage from the shipment of goods: rights and liabilities of the parties to the maritime adventure*. Thesis submitted to the University of Southampton (pp.65-68).

<sup>117</sup> Part III, S.21(1).

<sup>118</sup> Ibid, S.21(2). Part V of the 1997 Regulation deals with enforcement and s.24(1) provides that the offence could vary from summary conviction to a fine not exceeding the statutory maximum or, on conviction on indictment, to imprisonment for a term not exceeding two years or a fine or both.

<sup>119</sup> *Williams v East India Co.* (1802) 3 East 192. (See Lord Ellenborough Ch.J. p.198). However, in *Portsmouth Steamship v Liverpool & Glasgow S.A.* (1929) 34 Lloyd's List Law Rep. 459, which involved a salvage operation of a cargo which later damaged the salvor's vessel, the court held that the notice about the condition of the cargo ought to have been given to the owner because the master was not in a position during the salvage operation to have known enough about the cargo, thus the owner was the proper person to decide what should have been done if the notice was given.

(b) The shipper's knowledge of his cargo's dangerous character

The aforesaid paragraphs are only concerned with situations where the shipper is fully aware of the dangerous nature of his goods and how to communicate them to the carrier. However, it has been heavily debated whether shippers should remain liable in cases where they have no knowledge about the dangers associated with their goods. In answering this question one should consider the nature of liability for the obligation to give notice on part of the shippers. Their Lordships in *Brass v Maitland*<sup>120</sup> had conflicting views of whether the obligation is one of strict liability or that of a qualified warranty, whereby the former view holds the shipper unconditionally liable without any reference to his actions or knowledge,<sup>121</sup> whereas a qualified warranty avails the shipper from liability if he does not, or could not be expected to, have any means of knowledge that the goods are dangerous.<sup>122</sup> Crompton J. held the latter view as he found it wrong and very difficult to treat an innocent shipper liable for failing to communicate what he does not know.<sup>123</sup> He supported his argument by reference to Lord Ellenborough's remarks<sup>124</sup> in *Williams v East India Company*<sup>125</sup> that 'in order to make the putting [of goods] on board wrongful, the defendant must be cognizant of the dangerous quality of the article put on board'. Accordingly, the view entails that the shipper's knowledge is an essential ingredient for the finding of liability upon the shipper. On the other hand, both Lord Campbell C.J. and Wightman J. favoured the strict liability approach. They concluded that the absence of knowledge on part of the shipper is not a defence. Lord Campbell C.J. stated that:

*"The defendants, and not the plaintiffs, must suffer, if from the ignorance of the defendants a notice was not given to the plaintiff, which the plaintiffs were entitled to receive, and from the want of this notice a loss has arisen which must fall either on the plaintiffs or on the defendants."*<sup>126</sup>

As a result of having the majority in that case favouring a strict liability approach, it was held that the obligation is strict.

Although it may be understandable that imposing such a strict liability on part of the shippers may be harsh in some circumstances, for example: where he bought the goods already packed from another merchant with no means of knowledge that the packaging is unskilful and inadequate for the

<sup>120</sup> (1856) 6 El & BL.470;119 E.R. 940.

<sup>121</sup> Save in cases where the carrier has the knowledge about the dangerous character of the goods, or ought to have reasonably inspected the goods and find that out for himself (discussed above, 4.2 Duty not to ship dangerous goods); *Brass v Maitland* (1856) 6 El & BL.470;119 E.R. 940. pp.945-946 (Lord Campbell C.j. and Wightman J.).

<sup>122</sup> *Brass v Maitland* (1856) 6 El & BL.470;119 E.R. 940. pp.947-948 (Crompton J.).

<sup>123</sup> *Ibid*, p.947-948.

<sup>124</sup> *Ibid*, p.947.

<sup>125</sup> (1802) 3 East 192. p.200.

<sup>126</sup> (1856) 6 El & BL.470;119 E.R. 940. p.946.

cargo,<sup>127</sup> but it is also unacceptable and not commercially practical to expect the carrier to open every single package before loading, or to have the necessary knowledge for every type of cargo he has contracted to carry.<sup>128</sup> The rule in *Brass v Maitland* was stated to be a sound rule as ‘it throws the loss on the party who generally has the best means of informing himself of the character of the article shipped’.<sup>129</sup> If the obligation has not been made ‘strict’, shippers may buy goods without any form of examination whatsoever and simply send it to the terminal to be loaded on board vessels. Since carriers are taking the risk in loading cargoes which may not only cause damage to the vessel but also cause catastrophic disasters amounting to total losses of lives, property and pollute the environment, this justifies the need to make shippers strictly liable to ensure the suitability of their cargoes for the journey. The strict liability approach adopted in *Brass v Maitland* was re-visited in *The Giannis NK*,<sup>130</sup> where Lord Lloyd invited the House to conclusively determine whether the rule should be upheld or overruled.<sup>131</sup> He concluded, so did the House, that ‘the liability of a shipper for shipping dangerous goods at common law, when it arises, does not depend on his knowledge or means of knowledge that the goods are dangerous.’<sup>132</sup> Therefore, the obligation is set to be strict.<sup>133</sup>

(c) Article IV Rule 3: without shipper's own act, fault or negligent

On the other hand, in an attempt to lessen the harsh effect of the strict liability approach, it has been argued, in favour of the shipper where the Hague/Hague-Visby Rules apply, that shippers should not be held liable to damages which are caused without their own act, fault or negligent, pursuant to Article IV Rule 3. The authorities indicate that English courts appear to follow more strict approach in applying the Hague/Hague Visby Rules, in contrast with their American counterpart.<sup>134</sup> It was suggested in *Serrano v U.S. Lines*, an American authority, that the obligation should be so reduced

<sup>127</sup> It was held in *Brown v Edgington* (2 M. & G. 279) that it is immaterial that the goods were not manufactured by the shipper himself, or that the fault falls upon other merchants from whom the shipper obtained his goods.

<sup>128</sup> Unless the carrier was contractually obliged to satisfy himself of the safety of the cargo. Also, if the master has reasonable grounds to suspect the safety of any given cargo, he would be entitled to take additional measures to ensure the cargo to be loaded would not endanger the safety of his crew and ship. See Chapter 3.

<sup>129</sup> *Pierce v Winsor* (1861) 2 Sprague 35. (US decision)

<sup>130</sup> [1998] Lloyd's Rep. 337.

<sup>131</sup> Arguments in favour and against the majority decision in *Brass v Maitland* (1856) 6 El & BL 470; 119 E.R. 940 has been raised for over a century, but in all these cases the Court regarded itself as bound by that decision. See: *Great Northern Railway Co. v L.E.P. Transport and Depository Ltd.* [1992] 2 K.B. 742, *Bamfield v Goole and Sheffield Transport Co.* [1910] 2 K.B. 94.

<sup>132</sup> *Ibid.*, p.345. It was also held that the liability of the shipper will be the same under both common law and Article IV Rule 6 the Hague Rules, at p.345.

<sup>133</sup> See Rose, F. D. ‘Liability for dangerous goods’ (2016), 21 (June), Lloyd's Maritime and Commercial Law Quarterly 480-485.

<sup>134</sup> See Mr Justice Mustill in *The Athanasia Corninos* [1990] 1 Lloyd's Rep. 277. p.284; Lord Lloyd in *The Giannis NK* [1998] 1 Lloyd's Rep. 337. p.342. Contrast with, *Serrano v U.S. Lines* [1965] A.M.C. 1038. The United States District Court for the Southern District Court of New York.

because Article IV Rule 3 laid down 'a general principle of non-liability of the shipper in the absence of fault'.<sup>135</sup> However, Mustill J. in *The Athanasia Comninos*, rejected the American approach as he concluded that Rule 6 is not qualified by Rule 3 because the former rule is a free-standing code on itself within the Rules specifically dealing with dangerous goods alone.<sup>136</sup> The *Serrano* decision was also rejected by the House of Lords in *The Giannis NK* which held that the shipper should be liable regardless of his knowledge that his cargo is dangerous.<sup>137</sup> Subsequently, the U.S Second Circuit in *Senator Linie GmbH v Sunway Line*,<sup>138</sup> which involved a fire onboard the vessel *Tokyo Senator* that was started from a container of thiourea dioxide that was not considered dangerous at the time of shipment, approved the *Giannis NK*'s decision. The Court, however, stated that s.4(6) of the U.S. Carriage of Goods by Sea Act, which sets out a similar rule to Article IV Rule 6, 'sets forth a risk-allocating rule that renders a shipper strictly liable for damages in the event that neither the shipper nor the carrier knew or should have known that shipped goods were inherently dangerous'.<sup>139</sup> The Court further concluded that previous inconsistent maritime law decisions concerning liability of shippers for shipment of dangerous goods are therefore overruled.<sup>140</sup>

The problem lies with the wide wording given in Article IV Rule 3 which holds the shipper not responsible for loss or damage resulting from 'any cause' without his act, fault or negligent. The phrase 'any cause' was debated in the *Travaux Préparatoires of the Hague Rules and of the Hague-Visby Rules*<sup>141</sup> in relation to its wide scope. Initially, the original print of the Rule made reference only to some of the exemptions listed in Article IV Rule 2.<sup>142</sup> This was thought to deliver a protection to the shippers as equivalent to that of the carrier in relation to the said exemptions.<sup>143</sup> However, there were concerns that Article IV Rule 3, as it stands now, would also exclude shipper's liability towards general average because such a loss may arise from a cause independent from the

<sup>135</sup> [1965] A.M.C. 1038. The United States District Court for the Southern District Court of New York.

<sup>136</sup> [1990] 1 Lloyd's Rep. 277. p.284-285.

<sup>137</sup> [1998] 1 Lloyd's Rep. 337. Lord Lloyd's view on the U.S. approach was that the case did not consider Rule 6, as the goods in question were not dangerous, and therefore no question arose in relation to whether Rule 6 was subject to Rule 3 in the first place (p.342).

<sup>138</sup> 291 F3d 145 (2d Cir. 2002).

<sup>139</sup> Ibid, p.148.

<sup>140</sup> Ibid, p.166.

<sup>141</sup> The working documents of the Rules. Comité Maritime International. (1997). *Travaux Préparatoires of the Hague Rules and of the Hague-Visby Rules*. n.p. pp.428-432.

<sup>142</sup> The original print was: 'The shipper to the same extent as the carrier shall not be responsible for loss or damage sustained by the carrier or the ship arising of or resulting from any of the causes particularised in the above section 2 under the headings (b), (c), (d), (e), (f), (g), (h), (j), (k), (p) and (q).' Arguably, even if the original print was upheld, the strict liability approach would nonetheless survive this wording because the Rule did not refer to exclusion (m) which covers inherent defect or quality of the goods that could possibly cover dangerous goods.

<sup>143</sup> *Travaux Préparatoires of the Hague Rules and of the Hague-Visby Rules*. Mr R. M. Patterson's submission in the working documents, pp.430-431. The exemptions are those listed in fn.138.

act or fault of the shippers.<sup>144</sup> However, it was suggested that since general average is not based on the concept of responsibility for loss or damage, but it is rather based on services rendered by one party at its cost to the whole adventure, the Rule does not interfere with the operation of general average.<sup>145</sup> Whether Rule 3 had any implications on Rule 6 was not raised in the conference, but it was highlighted that if the Rules' draftsmen had intended to give an overriding effect to Rule 3 over Rule 6, they would have used appropriate language to that effect,<sup>146</sup> for example: Article III Rule 2 expressly provides that it is subject to Article VI, but such qualifying language is absent in Article IV Rule 6.

#### 4.4 Knowledge of the carrier

Despite the fact that the duty upon shippers to give notice is set to be strict, there is a proviso that relieves the shipper from such liability if he fails to give any necessary notice to the carrier, and that is when the dangerous nature of the cargo is, or could have been, discovered by reasonable inspection of the goods by the carrier.<sup>147</sup> In other words, if the carrier, or those employed by him, are reasonably expected to know or ought to know that the cargo is of a dangerous nature, then the shipper may evade liability notwithstanding his failure to give any notice about such nature. There is no clear authority which outlines what is required, or meant by, reasonable inspection, but such is ought to be reasonable in accordance with the circumstances of the case.<sup>148</sup> With regards to the carrier's knowledge, the question then arises as to what is the state of knowledge that carriers ought to have in order to discharge shippers from their liability. Generally, carriers are expected to keep up to date with current practices concerning appropriate methods of carriage for goods of various types, but they are certainly not expected to have the knowledge of an expert in any given cargo.<sup>149</sup> It has been discussed earlier that carriers are not expected to be aware of dangerous characteristics which go beyond the ordinary risks associated with any shipped goods.<sup>150</sup> Mustill J. in *The Athanasia Comninos* stated that:

*"It is not correct to start with an implied warranty as to the shipment of dangerous goods and try to force the facts within it; but rather to read the contract and the facts together, and ask whether, on*

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<sup>144</sup> *Travaux Préparatoires of the Hague Rules and of the Hague-Visby Rules*. Mr Harry R. Miller's submission, p.429

<sup>145</sup> *Travaux Préparatoires of the Hague Rules and of the Hague-Visby Rules*. Mr Louis Franck's response in pp.429-430.

<sup>146</sup> Per Lord Lloyd in *The Giannis NK* [1998] Lloyd's Rep. 337. p.342.

<sup>147</sup> *Brass v Maitland* (1856) 6 El & BL.470;119 E.R. 940.

<sup>148</sup> For instance, the IMSBC Code recommends masters to use the Can Test (see Chapter 2) as a precautionary measure to determine the moisture content of the cargo loaded. This could amount to be a reasonable inspection expected from the master, when he suspects the safety of the cargo being loaded.

<sup>149</sup> Coghlin, T et al. (2014). *Time Charters*. para.9.12.

<sup>150</sup> See 4.2.2 Are solid bulk cargoes 'dangerous'? above.

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*the true construction of the contract, the risks involved in this particular shipment were risks which the plaintiffs [carrier] contracted to bear.*<sup>151</sup>

Therefore, Mustill J. rejected the charterer's argument, in that case, that since the dangers associated with the carriage of 'coal' were well known to the carrier, he accepted all the risks that could arise from such shipment.<sup>152</sup> Mustill J. reasoned his finding that *'the reference to the carrier's knowledge includes knowledge which he ought to possess'*<sup>153</sup>, which in turn must include the knowledge which the owners and their crew ought reasonably to have, in addition to which they actually have, otherwise *'there would be premium on ignorance.'*<sup>154</sup>

In relation to the carriage of solid bulk cargoes, shippers are most likely to argue that the danger of liquefaction is now common knowledge in the shipping industry and carriers ought to be fully aware of all the dangers surrounding the shipment of liquefiable solid bulk cargoes, and therefore shippers need not give any form of warnings to the carrier about such danger. Certainly, carriers, and their masters and crew, must possess the necessary knowledge about the issue of liquefaction amongst this type of cargo due to the repeated notifications from P&I Clubs, the IMO and other marine-related news covering this topic. However, Mustill J.'s comments on the *Micada Compania v Texim*<sup>155</sup> case worth being re-mentioned here:

*'The goods shipped were of a type which created well-known perils, but where misinformation as to the moisture content disguised the fact that the perils existed in a degree which the master could not have foreseen.'*<sup>156</sup>

Accordingly, carriers will have the knowledge that a particular solid bulk cargo cannot be shipped above a certain moisture content limit, but if they have been misinformed by the shipper about the actual moisture content of the said cargo as to negate the risk of liquefaction, then the shipper cannot argue that the carrier was aware of the liquefaction danger and thus no notice was required.

#### 4.5 Can the carrier refuse to carry dangerous cargo?

As aforementioned, one of the rationale behind the notification requirement is to enable the carrier determines whether to accept or refuse the cargo. The carrier may be contractually obliged to carry a cargo under the terms of the charterparty. Such charter may, and most probably will, contain

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<sup>151</sup> [1990] 1 Lloyd's Rep. 277. p.283.

<sup>152</sup> The same conclusion was reached in *Harmony DG 533 F.3d 83* (2d Cir. 2008). (see fn.66 and fn.67)

<sup>153</sup> *Ibid*, p.285.

<sup>154</sup> *Ibid*, p.285.

<sup>155</sup> [1968] 2 Lloyd's Rep. 57.

<sup>156</sup> In *The Athanasia Comninos* [1990] 1 Lloyd's Rep. 277. p.283.

express provisions which proscribe shipment of dangerous cargo,<sup>157</sup> or allow such shipment subject to compliance with safety regulations and/or recommendations from the competent authorities.<sup>158</sup> If the goods supplied were prohibited under the relevant charter, then it is straightforward for the carrier to be justified in refusing them. However, if there is no such exclusion, other cargo-related contractual terms may entitle the master to reject the cargo when he has any reason to suspect its safety.<sup>159</sup> Alternatively, where the Hague-Visby Rules apply, the master will be entitled to destroy or jettison the cargo when it becomes dangerous during the voyage.

With relation to the carriage of solid bulk cargoes, ore carriers or general bulk vessels may well embark upon voyages for the carriage of such goods. There is a high demand for nickel ore shipments from Indonesia and the Philippines, a trade which once accounted to 60% of the world's nickel ore exports,<sup>160</sup> and also for transportation of iron ore from Brazil. This indicates that there is a booming market for the carriage of solid bulk cargoes, and it is therefore very likely that a charter may be solely fixed for the carriage of such goods. In this instance, there will certainly be no exclusion clause preventing the carriage of solid bulk cargoes, and owners should in this case consult other contractual provisions in the charter to protect their interests. Below are some of the provisions that are often found in all fixtures that could apply to the carriage of solid bulk materials.

#### 4.5.1 Description of cargoes clause

Some charters describe the cargoes to be loaded during the duration of the charterparty, either in general terms or provide for specific description. The carriage of solid bulk cargoes may not be excluded under the charter, mainly in those specifically fixed for that purpose, but the description of the cargoes permitted under the charter may be limited to Group C cargoes only, as to exclude solid bulk materials that may liquefy or possess chemical hazards. Consequently, it is a straightforward scenario that Group A and Group B solid bulk cargoes are excluded since they fail to fit within the contractual description prescribed in the contract. However, there have been some uncertainty as to whether the master can refuse goods that fall within the contractual description, but with additional unusual risks to those normally attendant to the described cargo, for example: if a charter only permits shipment of Group C cargoes, but the parties envisage that a type of iron ore fines or bauxite are to be loaded. Such cargoes will tick the description box since they are presently categorised as

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<sup>157</sup> See, for example, clause 2 of the *Baltimex 1939 Uniform Time-Charter* (as revised 2001).

<sup>158</sup> See clause 4 of the *NYPE 93*.

<sup>159</sup> Such clauses are discussed further below, in which their applicability to solid bulk cargoes is analysed.

<sup>160</sup> See John Wilson. *'Carrying nickel ore: The world's most dangerous cargo'*. (Available on: <https://www.safety4sea.com/carrying-nickel-ore-worlds-dangerous-cargo/>) [Accessed April 2017]

Group C cargoes, but can the master refuse such goods since they can liquefy under certain circumstances creating additional risks? Owners may argue that such cargoes fall outside the description of the goods permitted under the charterparty.

Evan J. in *The Amphion*,<sup>161</sup> following Mustill J.'s judgment in *The Athanasia Comninos*,<sup>162</sup> concluded that since the danger, which is different in degree rather than in kind, is outside the risks that the shipowners has contracted to bear, such cargo also falls outside the description of the goods.<sup>163</sup> As a result, a carrier may be justified in refusing a Group C cargo which has a high tendency to liquefy, where the charter only permits shipment of non-liquefiable cargoes. However, if the shipper establishes that the moisture content of the Group C cargo presented for shipment is within safe limits, and the master has no reasonable ground to suspect that the cargo may liquefy, then such cargo is deemed to be permissible under the charterparty. Similarly, if a charter only permits loading 'safe' solid bulk cargoes, without naming any particular Group, then arguably any cargo in which the moisture content is above the critical limit prescribed in the IMSBC Code is deemed 'unsafe', and therefore falls outside the description of the permitted cargoes. Nevertheless, there is another view that suggests if an appropriate and sufficient notice detailing the unusual nature of the goods has been given to the carrier, he then remains obliged to carry the cargo because it conforms to the contractual description.<sup>164</sup> In *The Atlantic Duchess*,<sup>165</sup> the Court found no distinction in the trade between 'butanised crude oil', which required a special notice due to its higher degree of danger, and 'crude oil'. It was found that both cargoes were regarded as commercially identical for the purpose of carriage by sea, and therefore the cargo offered was permissible under the charterparty, notwithstanding its dangerous character.<sup>166</sup> Accordingly, and in line with *The Atlantic Duchess* decision, a Group A, or C, solid bulk material that is prone to liquefy would still fit within the description permissible under the charter, despite its dangerous nature, if the shipper has informed the master, and produced certificates to confirm, that the cargo has been tested to be within

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<sup>161</sup> [1991] 2 Lloyd's Rep. 101.

<sup>162</sup> [1990] 1 Lloyd's Rep. 277. pp.282-284. Where he dealt with the question of whether unusually gassy coal fell within the contractual description of 'coal'.

<sup>163</sup> *The Amphion* involved a shipped cargo of anti-oxidant-treated fishmeal was caught on fire causing considerable damages to the vessel. The arbitration's decision, subsequently upheld by the Commercial Court, found for the shipowner because the charterer failed to load a cargo that was only effectively treated. Since the treatment of the shipped fishmeal was ineffective, it fell outside the description of the cargo.

<sup>164</sup> Following *The Atlantic Duchess* [1957] 2 Lloyd's Rep. 55. p.95. and *The Fiona* [1994] 2 Lloyd's Rep. 507.

<sup>165</sup> [1957] 2 Lloyd's Rep. 55.

<sup>166</sup> *Ibid*, see above p.12. Yet the cargo was found to be dangerous and Shippers were found liable for the consequences of loading a dangerous cargo, since they failed to notify the master of the additional precautions required for the cargo loaded.

safe limits. In this instance, the carrier will not be able to rely on the cargo description clause, but either consider other provisions or insert specific terms to cover any potential losses.<sup>167</sup>

#### 4.5.2 General prohibition of dangerous cargo clauses

Following the preceded argument, although a carrier may be contractually obliged to carry the solid bulk cargo presented for shipment, this does not entail that shippers can put such cargo onboard without any regard to its dangerous character. Most standard charterparty forms expressly prohibit shipment of dangerous cargo,<sup>168</sup> even if the cargo presented is in line with the contractual description. Therefore, carriers need to establish that the consignment in question is dangerous. In solid bulk terms that is, its moisture content level is beyond the critical point at which the cargo can liquefy. As discussed earlier, the moisture content certificates may not be truly representative of the cargo to be loaded, either due to unreliable test results, loading during monsoon season or the use of forged documents. This is why masters are encouraged to undertake the 'Can Test' during the loading operations, in which they fill up a can with sample of the cargo and sharply bang it against a hard surface 25 times.<sup>169</sup> If water appears on the surface, then it is indicative of higher moisture content and alerts the parties to carry out further laboratory tests. At such point, owners should be able to rely on the dangerous cargo exclusion clause and be entitled to refuse the cargo, since it poses a high risk of liquefaction.

In the aforesaid decision of *Micada Compania v Texim*,<sup>170</sup> the charter was on the *Baltimex* form, in which the standard clause 2 states that:

*'The Vessel shall be employed in lawful trades for the carriage of lawful merchandise only between safe ports or places where the Vessel can safely lie always afloat within the limits stated in Box 17. No livestock nor injurious, inflammable or dangerous goods (such as acids, explosives, calcium carbide, ferro silicon, naphtha, motor spirit, tar, or any of their products) to be shipped'.*

The charterers in this case argued that the phrase 'such as' meant 'namely', and therefore restricting the nature of the dangerous goods excluded under the charter to the particular types named after it, i.e. acids, explosive... etc.<sup>171</sup> By contrast, owners submitted that 'such as' meant 'for example' and

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<sup>167</sup> Both possibilities are discussed below.

<sup>168</sup> For example: see clause 2 *Baltimex* 91 (as revised 2001).

<sup>169</sup> See section 8.4 of the *IMSBC* Code.

<sup>170</sup> [1968] 2 *Lloyd's Rep.* 57.

<sup>171</sup> *Ibid*, p.61. Relying on Mr. Justice Megaw in *the Stamatis* [1967] 1 *Lloyd's Rep.* 114, pp.118-119, where he was construing the meaning of 'such as' in a liberty clause, which stated that: "If the ship is prevented from entering the port ... for unreasonable time owing to causes beyond the carrier's control such as blockade, interdict, war ... the carrier

was not intended to have any restricting meaning, as proposed by charterers.<sup>172</sup> Donaldson J. ruled that since the term 'such as' and the subsequent words were within brackets, it was essentially intended by way of exemplification and not by way of restriction.<sup>173</sup> Therefore, he concluded that the liquefiable iron ore concentrate loaded fell within the dangerous cargoes excluded under clause 2 of the Baltime form.

#### 4.5.3 Employment clause: master to follow charterer's orders

It was argued in *The Sussex Oak*,<sup>174</sup> that masters cannot refuse charterers' orders by reason of the employment clause, in which the master must be under the orders of the charterers as regards employment, agency or other arrangements.<sup>175</sup> However, Devlin J. stated that:

*"I cannot think that the clause in a time charter-party which puts the master under the orders of the charterers as regards employment is to be construed as compelling him to obey orders which the charterers have no power to give"*<sup>176</sup>

The case involved charterers ordering the master to sail outside the trading limits agreed in the charterparty, and since they were not entitled to trade outside the said limits, it could not be sustained why they should be able to give such orders. Similarly, the same would apply to an excluded cargo, and thus an order to load such excluded cargo will be deemed void, and masters can simply refuse it. This would put charterers in default for failure to provide cargo and can be sued by owners for damages, in the form of dead-freight under a voyage charter or the vessel remains on-hire until substitute cargo is provided under a time charterparty. Alternatively, and if it was safe to do so, owners may instruct the master to accept the cargo under protest, in which they do not only carry this cargo at the sole risk and expense of the charterers but may also be entitled for an additional remuneration.<sup>177</sup>

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shall be at liberty to proceed...". Megaw J. ruled that the carrier only had such liberty in the specifically mentioned causes.

<sup>172</sup> Ibid, pp.61-62. Relying on Mr Justice Devlin decision in *Chandris v Isbrandtsen-Moller Co. Inc.* [1951] 1 K.B. 240, in that general words are to be given their larger and natural meaning without any restrictions, unless there is clear reason for doing so.

<sup>173</sup> Ibid, p.61.

<sup>174</sup> (1949) 83 Lloyd's Law Rep. 297. In this case, the charterers ordered to the master to embark on a voyage that was outside the trading limits set in the contract.

<sup>175</sup> See, for example, clause 9 Baltime 1939 as revised 2001 and clause 8, NYPE 93.

<sup>176</sup> Ibid, p.307.

<sup>177</sup> See Coghlin, T et al. (2014). *Time Charters*. paras.5.19-5.23 and para.9.5..

#### 4.5.4 Compliance with safety regulations standard clauses

Some charterparty standard forms permit shipment of dangerous cargoes, provided charterers or shippers comply with applicable safety regulations and/or port authorities' requirements, for instance: clause 4 of NYPE 1993, Lines 48-69, states that:

**"4. Dangerous Cargo/Cargo Exclusions**

*(a) The Vessel shall be employed in carrying lawful merchandise excluding any goods of a dangerous, injurious, flammable or corrosive nature unless carried in accordance with the requirements or recommendations of the competent authorities of the country of the Vessel's registry and of ports of shipment and discharge and of any intermediate countries or ports through whose waters the Vessel must pass. Without prejudice to the generality of the foregoing, in addition the following are specifically excluded: livestock of any description, arms, ammunition, explosives, nuclear and radioactive materials,*

*(b) If IMO-classified cargo is agreed to be carried, the amount of such cargo shall be limited \_\_ tons and the Charterers shall provide the Master with any evidence he may reasonably require to show that the cargo is packaged, labelled, loaded and stowed in accordance with IMO regulations, failing which the Master is entitled to refuse such cargo or, if already loaded, to unload it at the Charterers' risk and expense."*

Part (a) subjects the shipment of dangerous cargoes to compliance with national laws of the Flag State where the ship is registered, and laws of the loading, discharging and passing-by countries, yet it expressly proscribes the carriage of 'livestock, weaponry, explosives, nuclear and radioactive materials'. Part (b), on the other hand, deals with IMO-classified cargoes allowing their shipment in limited quantities, provided the charterer produces evidence of compliance with the applicable IMO regulations. Noticeably, the carriage of solid bulk cargoes would be covered under Part (b) of this clause, since such cargoes are classified in the IMO's IMSBC Code. If charterers fail to provide the required moisture content certificates and comply with the Code's provisions, then the master can refuse loading the cargo. In relation to Part (a), there are two instances where it can apply to the shipment of solid bulk cargoes. First, section 1.3 deals with solid bulk cargoes that are not listed in the IMSBC Code, for which their carriage shall be governed and authorised by the competent authority of the loading port.<sup>178</sup> Charterers must therefore comply with the carriage conditions as set

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<sup>178</sup> If the cargo properties of the cargo pose any risk, then advice shall also be sought from the competent authorities of the port of discharge and the Flag State. The three authorities will, in this instance, set the suitable conditions for the carriage of this cargo.

out by the relevant authority, failure of which entitles the master to refuse the cargo until he is satisfied that all the requirements have been complied with.<sup>179</sup>

Secondly, part (a) also amounts to a warranty by charterers that the ship will only be employed in carrying lawful merchandise, whereby Colman J. in *The Greek Fighter* stated that:

*“The charterer is taken to warrant the lawfulness of the cargo and not merely an undertaking ... that the cargo is lawful to the best of his belief ... In other words, this is an absolute warranty”*<sup>180</sup>

Goods will not be lawful if their carriage breaches local laws at the port of loading, or if they cannot be discharged at the destination port.<sup>181</sup> In addition, it was outlined earlier that the carriage of an unlawful cargo could render the cargo dangerous under common law, whereby the definition of dangerous cargo under common law rules extends to cover cargoes that are both physically and legally dangerous.<sup>182</sup> Some shipments of solid bulk cargoes from Indonesia will be rendered as unlawful since the government introduced an export ban on unprocessed ores from the country in 2014. The ban was aimed at stimulating the nation’s mining industry to develop their own smelting facilities to process ores locally and achieve higher economic gains.<sup>183</sup> Therefore, any carriage of unprocessed ore from Indonesian ports will be in breach of the export ban, and thus it may render the contract illegal for which the master will be entitled to refuse an order to load unprocessed ores. However, it recently emerged that the Indonesian government has relaxed the stringent export requirements for nickel ore and bauxite cargoes.<sup>184</sup> Consequently, the master needs to check whether the cargo tendered for shipment conforms to the new regulation in order to assess its lawfulness before he can reject the goods.

One final point on Part (a) is that the words ‘*any goods of a dangerous, injurious, flammable*’ nature mirrors those in clause 2 of the Baltime form ‘*No ... injurious, inflammable or dangerous*

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<sup>179</sup> For an assessment of port authorities’ measures to minimize incidents of liquefaction, see Chapter 2.

<sup>180</sup> [2006] EWHC 1729 (Comm); [2006] 1 Lloyd’s Rep. Plus para.283. The ship was employed to export cargo from Iraq in breach of UN sanctions, and she was therefore confiscated and later sold in an auction. Held, charterers were liable in damages for the loss of the ship and loss of hire to the owners.

<sup>181</sup> See *Leolga v Glynn* [1953] 2 Lloyd’s Rep. 47. In this case, the ship was chartered on the Baltime 1920 form for the conveyance of lawful merchandise. Charterers ordered the vessel to load ammunition to be discharged in Egypt to the British forces, despite of a ban by the Egyptian authorities. The vessel was subsequently blacklisted and detained for 26 days. Held, charterers were liable to pay damages for the delay caused.

<sup>182</sup> See above 4.2.1 Meaning of dangerous cargo. See *The Darya Radhe* [2009] 2 Lloyd’s Rep. 175.

<sup>183</sup> Albeit indirectly, the move could contribute to safe shipments of nickel ore and bauxite since processed ores are more uniform and unlikely to liquefy. Discussed above, see 2.7 Adequacy of the legal framework.

<sup>184</sup> Reuters. ‘Indonesia eases export ban on nickel ore, bauxite’ (available on: <http://www.reuters.com/article/us-indonesia-mining-exports-idUSKBN14W1TZ>) [Accessed April 2017]

goods', which was used in *Micada Compania v Texim* case.<sup>185</sup> Therefore, arguably, the master may still be entitled to refuse a solid bulk cargo, with excessive moisture content, notwithstanding its compliance with the national laws of the said ports/States. This could certainly prove helpful as the parties in the recent liquefaction incidents have reported rigid compliance with the applicable regulations, yet the causalities occurred.<sup>186</sup>

#### 4.5.5 Solid bulk specific clauses

In response to the liquefaction incidents that have occurred since 2010, new clauses that exclusively deal with solid bulk cargoes have emerged in the market. Notably, BIMCO's standard clauses, which are fully reproduced in Annex [4] and [5] of this thesis, are now commonly used into many charterparties.<sup>187</sup>

##### (a) The BIMCO Clause

The BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties is aimed at dealing with common disputes that arise amongst owners and shippers/charterers in relation to the sampling and carrying of solid bulk cargoes that are subject to liquefaction. Many owners have been denied the opportunity to sample and test the cargo themselves, or were pressured to accept shippers' test results despite any discrepancy that might be found. The significance of sub-clauses (a) and (b) is that expressly identifying the charterer as the party liable to comply with the IMSBC Code obligations, as opposed to shippers under the said Code, such as providing all moisture contents certificates to the master prior to the commencement of loading. This will certainly not reveal shippers from such responsibilities, where they are not the charterers, as it is often the charterparty provisions will be incorporated into the carriage contract contained in a bill of lading.<sup>188</sup> However, it is noted that sub-clause (b) only requires the presentation of moisture content certificates '*If the cargo is a solid bulk cargo that may liquefy*', which indeed reflects the requirement of section 4 of the IMSBC Code. Nevertheless, it was suggested above,<sup>189</sup> that the requirement must be amended to require moisture content certificates be presented for all, or at least Groups A and C, solid bulk cargoes since it has been reported that several Group C cargoes had experienced liquefaction. This is intended to further

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<sup>185</sup> [1968] 2 Lloyd's Rep. 57.

<sup>186</sup> *The Bulk Jupiter and Anna Bo.*

<sup>187</sup> BIMCO has issued two clauses that specifically deal with solid bulk cargoes; One, is the BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties (Annex [4]), which is widely incorporated as a rider clause, and the other is clause 29 Solid Bulk Cargoes/Dangerous Goods of the NYPE 2015 form that has recently been issued (Annex [5]).

<sup>188</sup> For rules of incorporation, see: *the Saxon Star* [1959] A.C. 133.

<sup>189</sup> In Chapter 2.

enhance safe shipment of solid bulk cargoes and tackle one of the flaws that currently persists in the IMSBC Code. If sub-clause (b) is so amended, rather than being limited to Group A cargoes only, the ship's vulnerability to the liquefaction of Group C cargoes will be rightly addressed.

Sub-clause (c) covers two important rights. The first part gives owners the right to sample and test the cargo, from which they can evade any intimidation or pressure from shippers at load ports or charterers who have often refused granting owners with access to the stockpiles. Sub-clause (c), first part, invites the parties to jointly carry out the sampling and testing of the cargo, yet solely entitles the owners to nominate an independent laboratory in order to ensure the reliability of the test results. Also, most importantly, any delay that is resulted, and the costs incurred, from carrying out such sampling and testing is, by virtue of this sub-clause, for charterer's account. Allocating such risks contractually brings beneficial merits to the parties, needless to say certainty on the question of liability. However, charterers may not be content with placing such liability upon their shoulders. Nevertheless, the second part of sub-clause (c) is indeed the most paramount as it states that:

*"If the Master, in his sole discretion using reasonable judgement, considers there is a risk arising out of or in connection with the cargo (including but not limited to the risk of liquefaction) which could jeopardise the safety of the crew, the Vessel or the cargo on the voyage, he shall have the right to refuse to accept the cargo or, if already loaded, refuse to sail from the loading port or place."*

Therefore, if the master has 'reasonable grounds' to suspect the safety of the cargo, he is expressly empowered to refuse to accept it, or even refuse to sail with such cargo onboard. In *The Triton Lark* case,<sup>190</sup> which was concerned with a War Risks clause,<sup>191</sup> the nature of 'reasonable judgment' required from the master was held to mean for the master to consider; whether compliance with a charterer's order could amount to a 'serious possibility' that the ship would be put in danger. Although it was submitted that such power must *"be exercised honestly, rationally and not arbitrarily or capriciously and after making any necessary enquiries"*<sup>192</sup>, the judge refused to imply a term which prescribes how such power to be used since the clause expressly provides that such judgment must be 'reasonable'.<sup>193</sup> He further stated that:

*"The effect of that clause is that the owners must make a judgment. It must be made in good faith; otherwise it would not be a judgment but a device to obtain a financial gain. Further, the judgment reached must be objectively reasonable. An owner who wishes to ensure that his judgment is objectively reasonable will make all necessary enquiries. If he makes no enquiries at all it may be concluded that he did not reach a judgment in good faith. But if he makes those enquiries which he*

<sup>190</sup> [2012] 1 Lloyd's Rep. 151.

<sup>191</sup> Clause 20(b) Baltime Form.

<sup>192</sup> Ibid, para.54.

<sup>193</sup> Ibid, para.55.

*considers sufficient but fails to make all necessary enquiries before reaching his judgment I do not consider that his judgment will on that account be judged unreasonable if in fact it was an objectively reasonable judgment and would have been shown to be so had all necessary enquiries been made.*"<sup>194</sup>

Arguably, one of the necessary enquiries that a master must do is to carry out the 'can test', pursuant to section 8.4 of the IMSBC Code. If moisture appears on the top as to indicate a high moisture limit, this must alert that the occurrence of liquefaction is 'seriously possible' and thus putting the ship in danger. This will certainly be a difficult burden for charterers to challenge, whereby they must show that the master has acted unreasonably in refusing the cargo, which is indeed a high bar to clear. Whereby, the court is likely to be sympathetic with the master in such circumstances, as it was held in *The Ferdinand Retzlaff* that '*where the safety of lives and property at sea are concerned, the Court should be very slow to find that a Shipowner... who faced with a responsible decision, errs on the side of caution, is thereby acting unreasonable.*'<sup>195</sup>

Moreover, sub-clause (d) is an indemnity clause holding charterers liable to indemnify the owners for any and all claims arising out from complying with charterers' instructions. This indeed mirrors the common law position in that if compliance with charterers' instructions, albeit being legitimate orders under the charter, causes damage to the owners, then an implied right of indemnity should apply in favour of owners who must be indemnified for following such orders.<sup>196</sup> This indemnity is also enshrined in the Hague-Visby Rules, whereby Article IV Rule 6 entitles owners to destroy dangerous cargoes discovered onboard the ship without being liable to indemnify shippers, and indeed charterers.<sup>197</sup> In addition, when owners order the ship to deviate for justifiable reasons, they are not liable to indemnify charterers for any losses incurred by reason of such deviation.<sup>198</sup>

Finally, sub-clause (e) enforces that charterers' obligation to provide safe cargo under the relevant charter shall not be affected by the provisions of this BIMCO clause. This sub-clause, in fact, could cover the incidence of Group C cargo liquefaction, whereby the other sub-clauses are strictly confined with the IMSBC Code provisions but, for instance, moisture content certificates are only required for Group A cargoes, so the master may be entitled, under this sub-clause, to go beyond the IMSBC Code and request such certificates for Group C cargoes as well. However,

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<sup>194</sup> Ibid, page 160, col.1.

<sup>195</sup> [1972] 2 Lloyd's Rep. 120, 123 (Brandon J.).

<sup>196</sup> See Mustill J in *the George C. Lemos* [1991] 2 Lloyd's Law Rep. 107. However, it was suggested that the implied term would not apply if Owners have agreed to follow such orders at their own risk, see Coghlin, T et al. (2014). *Time Charters*. (para.19.15).

<sup>197</sup> Discussed above in 4.2 Duty not to ship dangerous goods.

<sup>198</sup> Article IV Rule 4.

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owners will need to fall back to other contractual, or argue for implied, provisions and indeed make all necessary enquiries to support the master's suspicion of the cargo's safety to ensure that his request for such further documents is legitimately and reasonably justified. Further, sub-clause (e) provides that owners or the master's compliance with the BIMCO clause shall not amount to a waiver of their rights.<sup>199</sup> This is aimed at circumventing charterers' attempt to argue that if owners had previously accepted the cargo, then such acceptance amounted as to waive their right to reject it at a later date.

(b) NYPE 2015

In respect of clause 29 of the recently formed NYPE 2015, it remains unknown whether the new refit of the NYPE form is proving popular in the shipping industry but, as far as the solid bulk clause is concerned, it is broadly speaking intends to achieve the same merits of the BIMCO clause, discussed above. Sub-clause (a) requires the charterer to provide all necessary information in advance of loading. Although it does not limit the production of such information to Group A cargoes only, as in the aforementioned BIMCO clause, it does states that such information shall be produced in accordance with the IMSBC Code. This entails that moisture content certificates will only be requested for Group A cargoes only, as opposed to this thesis's recommendation to request the same for Group C cargoes as well. However, the last sentence of clause 29(a) states that:

*"The information shall be accompanied by a cargo declaration summarising the main details and stating that the cargo is fully and accurately described and that, where applicable, the test results and other specifications can be considered as representative for the cargo to be loaded."*

This could amount to a representation, or indeed an undertaking, from the charterers, or shippers, as to the accuracy of these documents. As reported, forgery of the shipping documents is one of the main contribution to the occurrence of liquefaction incidents, where the moisture content test results, or even the description of the cargoes to be loaded in these documents, were not true representative of the cargo presented for shipment. Therefore, presenting cargo which does not correspond with the shipping documents presented would find charterers in breach of their 'absolute' undertaking not to ship cargo excluded under the contract.<sup>200</sup>

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<sup>199</sup> Charterers often argue that since the master has accepted loading the cargo, he has therefore waived the owners' rights to refuse it at a later stage, see below 4.5.6 the waiver argument: consent to load dangerous cargo.

<sup>200</sup> See, for instance, *the Greek Fighter* [2006] 1 Lloyd's Rep. Plus.

#### 4.5.6 The waiver argument: consent to load dangerous cargo

The waiver argument is often raised by charterers in an attempt to discharge their liability, or alternatively bind owners to perform an action that otherwise they are not contractually required to. In *Chandris v. Isbrandtsen-Moller*,<sup>201</sup> charterers argued that since the master had consented to load an excluded cargo, he waived the owners' right in respect of this shipment to reject it afterward. Devlin J., however, rejected this argument in that the master by consenting to load a cargo that was expressly prohibited in the charter could not amount to waiver. When it comes to dangerous cargo, Article IV Rule 6 of the Hague-Visby Rules provides that dangerous cargoes can '*be landed at any place*' prior to discharge, which could therefore be the place of loading. Assuming the Rules apply to the charter, by means of a paramount clause, this entitles the master to refuse such goods, or alternatively discharge them after being loaded onboard the ship and their dangerous character was discovered, notwithstanding his earlier consent to load it. Further, under the same rule, even in cases where owners have consented to load the cargo, they remain entitled to land these goods without indemnifying the charterers, save for general average, and therefore the waiver argument could still be rebutted after the carrier's acceptance to load.

#### 4.6 Proper carriage of dangerous cargoes

Generally, and from a commercial sense, carriers are expected to be aware of current practices in relation to appropriate methods of carriage for various goods, simply by consulting cargo-handling manuals, relevant IMO publications and other relevant resources. Carriers have certain obligations to provide a seaworthy vessel, which is fit to receive any given cargo, and also to properly load and look after the goods. Such duties were considered in Chapter 3, but it is worth-mentioning here that if the carrier is found to have improperly carried the cargo, such a breach may have dramatic consequences as to break the chain of causation, discussed below, so that shippers may escape from liability even if they ship dangerous goods without giving any notice. In *The Kapitan Sakharov*<sup>202</sup> and *The Fiona*,<sup>203</sup> it was found that the carrier's failure to properly carry dangerous goods made unseaworthiness the dominant cause of the incident, irrespective of the dangerous character of the cargoes which the shippers had failed to warn the carrier about.<sup>204</sup>

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<sup>201</sup> [1951] 1 K.B. 240.

<sup>202</sup> [2000] 2 Lloyd's Rep. 255.

<sup>203</sup> [1994] 2 Lloyd's Rep. 257.

<sup>204</sup> Discussed further below; 3.7 Causation of the loss.

#### 4.7 Causation of the loss

In order for carriers to succeed in their claim against shippers who fail to notify the dangerous nature of their goods, unless such nature was not discoverable by reasonable examination, carriers must prove that their loss was caused by the dangerous cargo loaded.<sup>205</sup> However, in some cases the loss may be attributable to several factors in which both the carrier and the shipper have been in breach of their obligations, and that such breaches have collectively contributed to the casualty. This was the case in *The Fiona*,<sup>206</sup> where a cargo of 'fuel oil with highly inflammable vapours', which the carrier could not have been expected to know their heightened danger, had exploded due to gasses that were emitted from residues of a previous cargo, which the carrier failed to wash away before he loaded the named cargo. The Commercial Court found that the flammable vapours and the emitted gasses from the residue were both contributory causes to the explosion, and therefore held that by reason of the carrier's failure to discharge his obligation under Article III Rule 1, to provide a seaworthy ship, he would be precluded from recovering an indemnity under Article IV Rule 6 from the shippers.<sup>207</sup> Judge Diamond Q.C. found it wholly wrong and inconsistent with commercial common sense to allow a carrier in breach of their 'overriding obligation' under Article III Rule 1, which caused the dangerous cargo to explode, to be entitled to such an indemnity.<sup>208</sup> The decision was upheld by the Court of Appeal,<sup>209</sup> in which Lord Hirst J. also concluded that Article III Rule 1 '*is the overriding article ... seeing that the shipowners were in breach of their obligations under [Article III Rule 1] to exercise due diligence to make the ship seaworthy, they are not entitled to invoke the indemnity under [Article IV Rule 6].*'<sup>210</sup>

Furthermore, the issue of unseaworthiness contributing to damages was also considered in *The Kapitan Sakharov*.<sup>211</sup> This case involved two types of dangerous cargoes for two different shippers. One shipper shipped eight containers of highly flammable isopentane which were stowed under-deck with no ventilation. The other shipper put onboard a sealed container with undeclared dangerous cargo that was stowed upper-deck. During the voyage, the on deck container exploded and caused a fire which resulted in damages to part of the vessel and her cargo. The fire then spread

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<sup>205</sup> See p.5 above in relation to the three elements that must be proven. This is relevant to both the common law obligation (see Mustill J. in the *Athanasia Comminos* [1990] 1 Lloyd's Rep. 277. p.281.), and the Hague-Visby Rules indemnity under Article IV Rule 6 (see Judge Diamond Q.C. in *The Fiona* [1993] 1 Lloyd's Rep. 257. p.268. – this point was discussed in fn.42 above).

<sup>206</sup> [1994] 2 Lloyd's Rep. 506.

<sup>207</sup> [1993] 1 Lloyd's Rep. 257.

<sup>208</sup> *Ibid*, p.286.

<sup>209</sup> [1994] 2 Lloyd's Rep. 506.

<sup>210</sup> *Ibid*, p.519.

<sup>211</sup> [2000] 2 Lloyd's Rep. 255.

under-deck intensifying the isopentane containers which later exploded and eventually caused the sinking of the vessel. The stowage of the isopentane containers under-deck made the vessel unseaworthy and, therefore, the carrier failed to exercise due diligence because the said cargo should have been stowed on deck in accordance with SOLAS and the IMDG Code.<sup>212</sup> As a result, the Court made a distinction between the damages which were caused by the upper-deck fire, of which the shipowner's fault did not contribute, and the loss of the vessel which was caused by the under-deck explosion, which the carrier's breach contributed to its occurrence.<sup>213</sup> Clarke J. held that the initial on deck explosion was caused by the undeclared dangerous cargo alone, but the consequent under-deck fire would not have caused the sinking of the vessel, had owners not stowed the isopentane under-deck. Therefore, he held that owners can recover an indemnity from the first shipper in respect to the on deck damages, but not in respect to the subsequent under-deck damage and loss of the vessel that were caused by his own breach of Article III Rule 1.<sup>214</sup> His decision was upheld in the Court of Appeal, where Lord Auld J. stated that:

*"The essential question was whether [the owner's] lack of due diligence in the stowage of the isopentane – breach of contract – causing unseaworthiness in the vessel was an effective cause of the fire ... and her loss. [...] It is immaterial that there was another cause or as to which of them was the dominant cause or their respective timings."*<sup>215</sup>

Here, the carrier's breach was indeed an effective cause because if he did not stow the flammable cargo under-deck, it would not have been exploded in the first place. Therefore, the carrier could not invoke the indemnity under Article IV Rule 6, insofar as the second shipper was concerned, notwithstanding the existence of other co-operating causes.<sup>216</sup> Christopher Clarke J. further stated in *The Aconcagua*, that 'it is not necessary to determine whether the carrier's breach was the dominant or merely an effective cause. It is sufficient that it was a cause'.<sup>217</sup> As a result, the carrier will lose his entitlement to Article IV Rule 6 indemnity if his loss is resulted from two causes: (i) the shipment of dangerous cargo, which he did not consent to, and (ii) the breach of his overriding seaworthiness obligation. It matters not that the shipper has failed to warn him about the dangerous character of the goods, nor does it matter which of the two factors was more dominate to cause the loss. If unseaworthiness caused the cargo to liquefy, the shipper would not be liable to indemnify the carrier.

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<sup>212</sup> Ibid, p.264. (per Lord Auld J.).

<sup>213</sup> Coghlin, T et al. (2014). *Time Charters*. para.9.23.

<sup>214</sup> Ibid, p.255.

<sup>215</sup> Ibid, p269.

<sup>216</sup> Lord Wright in *Monarch Steamship Co v Karlshamns Oljefabriker* [1949] A.C. 196, pp.226-227, held that where unseaworthiness is a co-operating cause of loss, it would in most cases precede other co-operating causes, since it must exist at the commencement of the voyage.

<sup>217</sup> [2010] 1 Lloyd's Rep. 1. para.333.

Furthermore, with respect to the carrier's breach of his cargo care obligations,<sup>218</sup> it was held in *Galoo Ltd. v Bright Grahame Murray*<sup>219</sup> that the general rule on causation and whether a particular breach has caused the loss, or has broken the chain of causation, would be a question of fact and common sense. Accordingly, the burden of proof rests upon the shipper to establish that the carrier's breach to care for the goods was the 'effective cause' resulting in the liquefaction of the cargo.<sup>220</sup> It was held in *The Crudesky* that the question of whether there has been a break in the chain of causation is 'fact sensitive',<sup>221</sup> which would involve an enquiry into the circumstances of the breach and the losses that could naturally and directly flow therefrom.<sup>222</sup>

Nevertheless, following the reasoning in *The Fiona* and *The Kapitan Sakharov*,<sup>223</sup> it was ruled that the carrier would lose his entitlement to Article IV Rule 6 indemnity if his failure to discharge Article III Rule 2 cargo care obligation was also causative of the loss,<sup>224</sup> similar to the position for concurrent causes concerning a breach of the seaworthiness obligation. However, it has been suggested, in *The Fiona* and *The Aconcagua*,<sup>225</sup> that the carrier would not lose his Article IV Rule 6 indemnity if the casualty was caused by a combination of a dangerous cargo and an exempted peril, such as Article IV Rule 2 exemptions. This suggests that if a casualty is caused by shipment of dangerous cargo and a default by the carrier, for which his liability has been excluded in the contract, then the carrier could still be covered by the indemnity under Article IV Rule 6. This is crucially important in the carriage of solid bulk trade. Damage caused by inherent vice is often excluded under charterparties and bills of lading, either by an express term or incorporation of the Hague-Visby Rules. If the claimant, being a charterer, shipper and/or receiver, establishes that the cargo had liquefied, or was lost, while their goods were in the carrier's possession,<sup>226</sup> the burden shifts to the carrier to prove, on the balance of probabilities, that the particulars of the goods contained a high moisture content which caused the cargo to liquefy, thus bringing himself within Article IV Rule 2(m) exemption.<sup>227</sup> Following the *Volcafe* decision,<sup>228</sup> the claimant could only disentitle the carrier

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<sup>218</sup> These were discussed in Chapter 3.

<sup>219</sup> [1994] 1 W.L.R. 1360.

<sup>220</sup> However, see the argument below in relation to the carrier's right to an indemnity under Article IV Rule 6 of the Hague-Visby Rules, where the carrier's breach was an excluded peril.

<sup>221</sup> *The Crudesky* [2014] 1 Lloyd's Rep. 1.

<sup>222</sup> See Gross L.J. in *The Toisa Pisces* [2013] 1 Lloyd's Rep. 108, where he summarized the applicable principles to determine whether the chain of causation has been broken. Also, see Cooke, J. et al. (2014). *Voyage Charters* para.21.42.

<sup>223</sup> Discussed above.

<sup>224</sup> See *The Aconcagua* [2010] 1 Lloyd's Rep. 1. Also, see Cooke, J. et al. (2014). *Voyage Charters* para.9.24.

<sup>225</sup> By Judge Diamond Q.C. in *The Fiona* [1993] 1 Lloyd's Rep. 257, 288, and by Christopher Clarke J. in *The Aconcagua* [2010] 1 Lloyd's Rep. 1. para.373 (obiter – this point was not discussed in the Court of Appeal).

<sup>226</sup> This may simply be shown where 'clean on board' bills were issued but the cargo was later found to be damaged.

<sup>227</sup> The burden of proof was discussed in Chapter 3, see 3.4.1(b) and 3.4.1(d).

from relying on the inherent vice exception if they could establish that the carrier was negligent in carrying out his Article III Rule 2 obligations, for instance: failure to carefully ventilate the cargo or properly seal the hatch covers. Based on the concurrent causes principle suggested in *The Fiona* and *The Aconcagua* above, if the claimant was successful the carrier would not only lose his entitlement to the exemption, but could also lose his right to the indemnity under Article IV Rule 6. Otherwise, if the claimant fails to establish the carrier's negligence, the carrier would be covered by the inherent vice exemption and be indemnified in accordance with Article IV Rule 6. This appears logical, whereby when the carrier is negligent in failing to implement a safe system to preserve the quantity of the moisture content present in the cargo, or prevent it from being increased, it is his negligence that caused the cargo to liquefy, and thus he should not be entitled to recover from his own breach. In contrast, if the cargo liquefied while at the possession of the carrier, but his negligence could not be established, it is most likely that the liquefaction had occurred due to the abnormal characteristics of the solid bulk loaded,<sup>229</sup> which may ultimately cause the loss of the ship. In these circumstances, it would appear unjust to prevent the carrier from relying on the exclusion clause, or not compensate him for the losses that resulted from such liquefaction.

However, one may question whether this interplay, which is based on the finding of negligence, between concurrent causes involving shipment of dangerous cargo and the inherent vice exemption could equally apply to other exempted perils under Article IV Rule 2. *The Volcafe* established that the burden of proof applies to all Article IV Rule 2 exemptions, except Rule 2(q) which requires the carrier to show that the casualty occurred without his negligence.<sup>230</sup> *The Aconcagua* established that there was no need to show that the carrier's breach was 'an effective cause', but it suffices that it was 'a cause'.<sup>231</sup> Of particular interest is exemption Rule 2(a) default of the master in the management of the ship. One could envisage a scenario where errors in the ballast management of the ships' tanks, which fall under Rule 2(a) exemption,<sup>232</sup> could cause significant list to the ship, and thus inevitably cause severe cargo shifting within the holds. Such shifting could

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<sup>228</sup> *Volcafe Ltd v Compania Sud Americana de Vapores SA* [2016] EWCA Civ 1103, discussed in Chapter 3, see 3.4.1(d).

<sup>229</sup> Unless there are contrary evidence which may suggest other probabilities (discussed further below). In such circumstances, as discussed earlier, the general rule on causation, and whether the chain of causation has been broken, will apply. The burden rests with the shipper to establish the effective cause. See *Galoo Ltd. v Bright Grahame Murray* [1994] 1 W.L.R. 1360, *The Crudesky* [2014] 1 Lloyd's Rep. 1 and *The Toisa Pisces* [2013] 1 Lloyd's Rep. 108, discussed above.

<sup>230</sup> For a commentary on burden of proof following *The Volcafe* decision, see Todd, P., 'Hague Rules and Burden Of Proof - *Volcafe v Compania Sud Americana de Vapores*'. (2017), *Lloyd's Maritime and Commercial Law Quarterly* 169-175.

<sup>231</sup> Although this decision was concerned with a breach of the seaworthiness obligation, there is nothing to indicate that the same will not apply to a breach of duty of care towards the cargo.

<sup>232</sup> *The Glenochil* [1896] P 10 and *The Rodney* [1900] P 112, which were mentioned in *The Aconcagua*, para.372.

cause the inherently-liquefiable cargo to liquefy. In this instance, should the ‘effective cause’ test or the aforesaid suggested principle apply? The answer seems, again, to be based on the finding of the carrier’s negligence. If the carrier was not negligent, in that he employed a skilful master, then Rule 2(a) will apply in his favour, as well as he would remain entitled for the indemnity. On the other hand, if the master lacked the necessary skills, Rule 2(a) will not operate and the carrier loses his Article IV Rule 6 indemnity. This might unfairly prejudices the shipper, charterer or cargo claimants who might find themselves bearing the risk for intervening actions that could possibly break the chain of causation.<sup>233</sup> Although the suggested principle was not decided on this basis,<sup>234</sup> it appears to follow the notion of concurrent causes applicable in the marine insurance context. In *The Miss Jay Jay*,<sup>235</sup> it was decided that if the loss was caused by a combination of insured and excluded perils, the excluded one prevails. Whereas, if the loss was caused by a combination of an insured peril and something else, the insured peril prevails. In the context of carriage of goods, the test appears to be as follow; if the loss was caused by a combination of shipment of dangerous cargo and an excluded peril, the exclusion applies. Whereas, if the loss was caused by shipment of dangerous cargo and negligence of the carrier, then the carrier remains liable.

#### 4.8 Conclusion

This chapter was aimed at identifying the definition of ‘dangerous cargo’, and at finding whether solid bulk materials could fit within this description. Although the IMSBC Code does not expressly state that solid bulk materials, including those liable to liquefy, are dangerous, English courts do not depend upon applicable IMO Codes to find whether a cargo is dangerous or not. Therefore, it matters not whether a Group A or Group C cargo is presented for shipment, as its classification may not necessarily held it to be ‘dangerous’ under common law principles. Arguably, any cargo that is capable of causing damage to the ship, owing to its own character and without interference by any other factors, should be construed as dangerous, regardless the fact whether the particular danger materialises and causes damage or not. This is common sense and it is perhaps in line with the English courts’ approach, but the outcome for liability under English law is made subject to three important concepts: First, the element of knowledge, and in particular the carrier’s knowledge, second, the carrier’s acceptance of the risk, and third, the chain of causation. Where the solid bulk cargo presented for shipment, with a perceived safe moisture content limit, later liquefies and

<sup>233</sup> Ibid, fn. 222. The applicable principles to determine whether an intervening event could break the chain of causation were set out by Gross L.J. in *The Toisa Pisces* [2013] 1 Lloyd’s Rep. 108, which were helpfully summarized in para.21.42 of Cooke, J. et al. (2014). *Voyage Charters*.

<sup>234</sup> Ibid, *The Aconcagua* para.373.

<sup>235</sup> [1987] 1 Lloyd’s Rep 32.

damages the ship, this consignment will be regarded as 'dangerous'. However, the shipper will only be held liable for shipping such a dangerous cargo, provided (i) that the carrier did not have any knowledge that this particular cargo could in fact liquefy, (ii) that if the carrier had foreseen the likelihood of this cargo liquefying, he would not have consented to its shipment, and (iii) that the carrier did not interfere with the cargo during sea passage as to cause it to liquefy. While (i) and (ii) are matters for the carrier to prove, it falls upon the shipper to establish that the carrier's negligence in caring for the cargo, or in providing an unseaworthy vessel, were causative of the loss.

Furthermore, this chapter also tested the application of common contractual clauses on solid bulk liquefaction scenarios to identify those which operate to protect the carrier's interests. Some common clauses could entitle the carrier to refuse loading solid bulk materials when the master questions their safety, yet it is recommended that well-drafted clauses that specifically deal with the liquefaction issue better address the liabilities amongst the parties. However, this chapter identified certain flaws in some of the specific clauses that have been circulated within the market, in that (i) they are restricted to the liquefaction of Group A cargoes only, and (ii) they only require compliance with the IMSBC Code test methods, which reliability has often been criticised, as outlined in Chapter 2. Therefore, it is recommended that the extent of such clauses should be broadened to cover the possibility of Group C cargoes liquefaction and, perhaps, address the eventuality of a loss occurring in spite of compliance with the IMSBC Code and identify the party which should bear such unpredicted liability. While this thesis outlined how English legal principles would apply to liquefaction scenarios, it remains open for judicial interpretation to see how the courts would (i) deal with the deficiencies discovered in the IMSBC Code, (ii) and how such regulatory- incompetency would affect the parties' liabilities, and rights, given its mandatory approach and the fact that the parties must comply with its provisions. It is possible that the English court may, alike the Canadian Court's approach in *the Erwin Schroder*, find the IMSBC Code inadequate and determine the parties' liabilities irrespective of their compliance with the Code. Further, it also remains open to see how the court may construe the master's knowledge or define his reasonable judgment, in light of the wide publicity that has focused on the issue of liquefaction. However, it is expected that a court would have sympathy with a master who is faced with a serious decision to make, concerning the safety of his crew and ship, even if he errs in his judgment.

Finally, it appears difficult to strike a balance between the interests of the parties. Shippers are strictly liable not to load dangerous solid bulk cargoes, notwithstanding the IMSBC Code's mischief which may cause them, unknowingly, to be in breach of their duty not to ship dangerous

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goods. Carriers bear the risk for accepting a cargo which they, based on the IMSBC Code, did not know that it could liquefy, but ‘ought to know’ that it might liquefy due to the widespread news on the subject. Carriers also bear the risk that the abnormality of the cargo may be triggered due to trivial events, such as predictable weather conditions, of which they are not entitled to rely upon to exclude their liability.<sup>236</sup> Equally, shippers may be denied the opportunity to rely on causative intervening events which are beyond their control to recover for their loss. Due to this uncertainty, solid bulk trade’s stockholders, involved in the carriage of this type of cargo, should permit a test case to go before trial, rather than settle behind closed doors. Unless a solid bulk liquefaction casualty is fully pleaded before an English court, such uncertainties may never be clarified.

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<sup>236</sup> Discussed in Chapter 3, see 3.4.1(e).

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## Conclusion

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## CONCLUSION

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This thesis reviewed the laws and regulations concerning the carriage of cargoes that may liquefy. Several conclusions concerning the suitability of the current legal framework have been identified and discussed below.

This thesis has identified certain deficiencies found in the IMSBC Code that undermine its objective in ensuring safe shipment of solid bulk materials. The IMSBC Code's deficiencies could be summarised as follow:

1. The IMO's reliance on (i) the occurrence of causalities and (ii) politically- and economically-driven research reports submitted by Member States, in categorising solid bulk materials into the given groups has proved to be ineffective.<sup>1</sup> Such miscategorisation would fail to alert, or misinform, the parties about the need for taking certain precautionary measures when loading solid bulk cargo. Consequently, this could lead to diverse outcomes when determining the question of liability amongst the parties, whereby English law may find a shipper strictly liable for loading a cargo that later liquefies, regardless of the Code's classification, but other jurisdictions may pardon a shipper who was misinformed by the Code as to the measures must be followed.
2. The accuracy of the test methods set out in the Code, which should assist the parties to determine the Transportable Moisture Limit (TML) for liquefiable solid bulk cargoes, has proved to be unreliable. Using the three different tests on the same sample has reportedly delivered different TML results each time tested. It is believed,<sup>2</sup> that the lack of transparency of previous studies on cargo shift and, the discrete and unrelated works being carried out in different Member States, have resulted in repeated efforts which may leave other aspects of the liquefaction issue unexplored. Allowing such access to a range of consolidated information could contribute to an improved understanding of all the historical studies that have been performed on cargo shift, and thus allow researchers to avoid the pitfalls of such past studies and deliver better understanding of solid bulk materials' inherent vice. If the test methods are not developed to deliver precise, reliable and accurate results of the characteristics of the cargo, the parties will have no

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<sup>1</sup> Whereby a State, being either an importer or exporter of a given cargo, may prefer to list such a cargo as non-labile to liquefy to ensure ease sale and transportation of such goods with no extreme regulatory hurdles that could discourage the trade in question.

<sup>2</sup> Rose, T. (2013). *The Liquefaction of Solid Bulk Cargoes During Seaborne Transportation*. Thesis submitted to the University of Oxford. pp.153-156.

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confidence in the shipping documents and will be vulnerable to the use of unsolicited and ambiguous test methods that may not necessarily be accurate.

3. The incompetence of some terminal authorities in handling crucial cargo operations at the load port is contributing to enhance the chances of liquefaction onboard ships.<sup>3</sup> Failure of terminal authorities to verify the safety of the cargo prior to shipment, oversee compliance with the IMSBC Code provisions and ensure availability of adequate facilities within the port that are necessary to preserve the safety of the cargo, i.e. test facilities, could lead to catastrophic liquefaction casualties. Such lax implementation of the Code has resulted in unscrupulous shippers exercising extreme pressure on the master to load solid bulk cargoes with little or no regard to its safety, save alone for forging shipping documents and misrepresenting the moisture content of the cargo. Member States must ensure strict regulations are in place to prevent unscrupulous behaviour from miners or individual companies versed in the solid bulk trade from using unreliable laboratories or ship cargoes which are knowingly dangerous. A ban on transportation of unprocessed ore, which pose higher risk of liquefaction, may be an effective, albeit indirect, measure to contribute to the safe shipment of solid bulk materials.
4. The inefficiency of regulation is also reflected in the number of human lives lost.<sup>4</sup> 44 lives were lost from the date the IMSBC Code was adopted in 2008 to the date it became mandatory in 2011. Over relatively the same period, 56 lives appear to have been lost following the Code's mandatory application from 2011 to 2015. As a result of this increased number of losses, it cannot be concluded that the IMSBC Code has achieved a successful result, irrespective of the reason that is causing this number to climb, due to being either an ineffective code, an improper implementation by the parties, lack of proper enforcement by port authorities, or a combination of all of these reasons.

The aforesaid deficiencies have resulted in the vulnerability of the parties to the shipment of solid bulk materials. The carrier may fall foul of the port authorities' ineffective enforcement of the Code, while the charterer or shipper may be found liable for shipping dangerous cargo irrespective of their compliance with the Code due to miscategorisation of a Group C cargo. Falling back to English law principle on shipment of dangerous goods may result in an additional uncertainty amongst the parties, because the outcome for shipment of a cargo which later liquefies is unpredictable. The state

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<sup>3</sup> Discussed in Chapter 2 (2.7.3).

<sup>4</sup> Considering the speculative figures as provided in the Liquefaction-related incidents table (Annex 1).

of knowledge is one of crucial importance in the question of liability for shipment of dangerous goods. Although the shipper is strictly liable regardless of his knowledge, the carrier's, or his master's, knowledge as to the 'liquefy-ability' of the cargo to be shipped is relevant and may evade the shipper's from liability, provided the master was not misinformed about the characteristics of the cargo by the shipper. However, the parties would be involved in an extensive evidential exercise in order to discharge their burdens for establishing the liability of one another. The carrier may lose his ship and collecting evidence to prove the cargo onboard had liquefied may be restricted, if not impossible. Similarly, the shipper's ability to establish that his cargo did not cause the damage to the ship, or that the master was aware of the possibility of liquefaction of the particular consignment, may also prove to be burdensome. Therefore, the parties should be strongly advised to take sufficient sealed samples of the cargo at the time of loading, and preserve them until completion of discharge at the destination port. This sort of disputes generally attracts great expenditure on expert and legal costs, save alone the quantum of losses involved. When the relevant regulation also fails to provide certain answers, at least as to the character of the cargo, such expenses may reach unprecedented levels. This may be the main reason why the recent liquefaction incidents have never made it to court, in particular where neither of the parties is at fault, and they tend to apply commercial sense trying to arbitrate and, eventually, reach a settlement. In the absence of an express provision, the current legal regime is likely to deliver unpredictable outcomes in terms of liability. It is currently unknown how the court may interpret the IMSBC Code's provisions, whereby IMO Codes were used to help determine good seamanship and safe practice when these codes were described as 'guidelines only'. In light of the deficiencies outlined and the 'mandatory' effect given to IMO Codes, it is unclear whether the court may interpret such codes any differently.

As a result, this thesis has recommended in various parts that parties' interests are better protected if the question of liability is fully addressed in well-drafted clauses. However, most of the standard clauses that have been circulated in the market solely focus on Group A cargoes only, and consequently such clauses would not apply when liquefaction of a Group C cargo occurs. Therefore, it is recommended that the scope of such clauses should be broadened to cover the liquefaction of a group C cargo. In addition, these clauses often identify one party, mostly the charterer, to be responsible for compliance with the provisions of the IMSBC Code, but, as outlined earlier, the reliability of the test methods prescribed within the Code are presently questionable. As a result, the risk of liquefaction may nonetheless occur notwithstanding compliance with the IMSBC Code provisions, and/or applying the prescribed test methods. It is therefore recommended to ensure the use of reliable laboratories which are fully aware of the controversial test methods provided for in the

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Code, whereby such labs may well adopt better technologies or expertise to deliver accurate results that truly represent the actual characteristics of the cargo to be loaded. In this regard, the contractual clause must identify the party responsible for all the expenses for testing the cargo at such reliable laboratories, including the costs for sending samples to overseas destinations. Moreover, the clause must grant the master the sole discretion to determine the safety of the cargo presented for shipment. Any commercial pressure exercised on the master's authority for accepting shipment of cargoes must be prevented, and thus the clause must make it clear that acceptance or refusal of the cargo shall be in the master's sole decision. In addition, the clause must expressly provide that any time lost for verifying the safety of the cargo should be for one party's account, and that the vessel shall remain on hire or laytime not to be interrupted throughout such period, until the master is fully satisfied that the cargo can be safely shipped.

In relation to the development of the IMSBC Code, with particular reference to the miscategorisation issue, the IMO could adopt a legal approach, in addition to the narrowly-focused technical analysis of solid bulk vice, in order to expedite identification of another Group C liquefaction possibility. For instance: this thesis suggests amending the IMSBC Code, or SOLAS, to effect a rule requiring the master to report unusual cargo behaviour during transit to the relevant authorities. This may play a significant role in contributing to safe shipment of solid bulk materials, whereby such a requirement may facilitate prompt efforts in identifying potential miscategorisation of a cargo in the IMSBC Code. A requirement upon the master to report danger messages to navigation already exists,<sup>5</sup> and therefore it appears doable to extend such requirement to reporting variable cargo conditions that may pose a danger onboard the ship during carriage. This way could deter the occurrence of a causality resulting from the liquefaction of a cargo that is currently believed to be non-labile to liquefy.

With all the uncertainties surrounding shipment of solid bulk materials, a well-drafted clause that deals with all the aforesaid pitfalls of the Code and current trade practice may well be the only solution to the issue of solid bulk liquefaction at the present time. A test case is needed to answer the following questions:

- i. How should English courts interpret an inadequate, mandatorily-applicable, regulation?

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<sup>5</sup> Under SOLAR Chapter V – Safety of Navigation.

- ii. Who bears the risk for losses or damages resulted from compliance with IMO regulations, in circumstances where a party was bound under national law and/or a contractual term to comply with the regulation in question?
- iii. Whether predictable weather conditions, which were found to be the effective cause resulting in the liquefaction of the cargo loaded, could discharge the carrier's liability?
- iv. Whether, in all the circumstances, the suggestion made by Christopher Clarke J. in *The Aconcagua*<sup>6</sup> – *obiter* – concerning the carrier's right to an indemnity under Article IV Rule 6, where the casualty resulted from shipment of dangerous goods and an exempted peril in relation to the carrier's cargo care obligation, should be upheld?

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<sup>6</sup> [2010] 1 Lloyd's Rep. 1. para.373.

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## Supplementary Documents

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## THE ANNEXES

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**[1] Liquefaction-related incidents table\*:**

Year	Vessel	Deaths	Cargo
1987	Testarosa	30	Iron Ore
1988	Mega Taurus	20	Nickel Ore
1990	Finn-Baltic	7	Iron Ore Concentrate
1991	Melete	25	Iron Ore Fines
1998	Sea Prospect	10	Nickel Ore
2005	Hui Long		Fluorspar
2007	Wen Qiao	1	Iron Ore Fines
2007	Heng Tai	2	Iron Ore
2009	Hodasco 15		Iron Ore
2009	Black Rose	1	Iron Ore
2009	Asian Forest	0	Iron Ore Fines
2010	Fian Fu Star	13	Nickel Ore
2010	Nasco Diamond	21	Nickel Ore
2010	Hong Wei	10	Nickel Ore
2011	Bright Ruby		Iron Ore
2011	Vinalines Queen	22	Nickel Ore
2013	Harita Bauxite	15	Nickel Ore
2013	Anna Bo	0	Nickel Ore
2014	Trans Summer	0	Nickel Ore
2015	Bulk Jupiter	18	Bauxite
2015	Alma Manis	1	Nickel Ore

\* The number of fatalities is speculative as there are discrepancies amongst media reports as to the numbers of the crew accounted for. Sources: Rose, T. (2013). The Liquefaction of Solid Bulk Cargoes During Seaborne Transportation. Thesis submitted to the University of Oxford; and other media reports.

[2] Abstract of the *Asian Forest* causality investigation report

Incident Summary

Ship(s) involved

Name	Flag Administration	Ship type	Gross tonnage
ASIAN FOREST (IMO 9369112)	Hong Kong, China	GENERAL CARGO	9881
Asian Forest (IMO 9369112)	Hong Kong, China	General Cargo Ship	9881

Event details

Time of incident (local onboard):

Date: 2009-07-17

Time: 17:45

Location:

Place/area name: New-Mangalore Port

Latitude: 12° 44.80' N

Longitude: 74° 44.89' E

Coastal Administration(s):

India

Type of casualty:

Very Serious Casualties

Initial event:

Capsizing / listing

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### Summary of events;

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1. At 0918 on 17 July 2009, the HK registered general cargo ship Asian Forest departed New-Mangalore Port for China after loading 13,600 tons "iron ore fines" in bulk. It was rainy monsoon season in India at that time of the year.
2. After sailing, the vessel experienced rough weather and heavy seas, and developed a list to starboard at about 1120. As the list continued, the master ordered to take ballast water simultaneously into No.2 to No.5 port side DB tanks. Upon ballasting, the ship listed further to starboard at about 28° by noon. However, it slowly reduced to almost upright, about 5° to starboard at 1310. The Master then ordered to stop ballasting, directed the vessel back to the port and subsequently dropped anchor in position Lat 12° 44.8' N Long 074° 44.89' E, about 5.5 nm off New-Mangalore port at 1430 on 17 July 2009.
3. At about 1450, the vessel started listing to the port side. The master requested the port authority for berthing the vessel but was declined. He also instructed the C/O to de-ballast the DB tanks simultaneously. However, upon de-ballasting, the vessel listed further to port. The master then ordered the crew to prepare the lifeboat and muster at the boat station except the C/E, 4/E and the duty oiler who were on duty in the E/R.
4. At about 1610, when the vessel listed 27° to port, the master ordered the duty personnel to vacate from the E/R but leaving the M/E running at dead-slow ahead. At 1647, 13 of the total 18 crewmembers boarded the port lifeboat as per master's order but the 2/O, 3/O, 1/E and an oiler insisted to accompany the master on the bridge. At 1725, the master ordered the C/O to launch the lifeboat. At about 1730, the master and the remaining 4 crewmembers launched the port liferaft. At 1745, they boarded the liferaft and abandoned the vessel. Subsequently, they were picked up by the Indian Coast Guard and conveyed ashore. Later, the lifeboat also beached ashore and all the crewmembers of Asian Forest landed ashore safely.
5. After abandonment, Asian Forest listed, submerged and subsequently foundered at about 1300 on 18 July 2009. Afterwards, some pontoons (hatch covers) were reported floating in the proximity of the wreck position and some washed ashore.

### Record Status

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Reporting Administration:	Hong Kong, China	Created:	2010-03-10 (hkg:ss_mai)
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Last updated:	24/08/2011 10:19:31 (ss_mai)
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Status:	<input checked="" type="checkbox"/> Validated	<input checked="" type="checkbox"/> Member States only	<input type="checkbox"/> Public/All
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Reporting:	<input checked="" type="checkbox"/> Include in reports
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### [3] Abstract of the *Vinalines Queen* causality investigation report

#### Incident Summary

##### Ship(s) involved

Name	Flag Administration	Ship type	Gross tonnage
VINALINES QUEEN (IMO 9290907)	Viet Nam	BULK CARRIER	31247

##### Event details

Time of incident (local onboard):

Date: 2011-12-25

Time: 00:07

Location:

Place/area name: North east of Luzon Island, Philippines

Latitude:

Longitude:

Coastal Administration(s):

Type of casualty:

Very Serious Casualties

Initial event:

Missing: assumed lost

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### Summary of events:

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On 25th December 2011, the Vietnamese bulk carrier VINALINES QUEEN went missing with 23 crewmen aboard. She was carrying 54,400 tons of Nickel ore from Indonesia's Morowali port to Ningde port in China. Search and rescue forces from Japan and the Philippines utilized airplanes and other modern rescue equipment to search for the missing cargo ship.

On 30th December 2011, the British-flagged ship London Courage rescued a sole survivor found adrift on a life raft at 20°degrees.17 North, 120°.22 East, about 350 kilometres west from the area where the ship made its last contact with the shipping company.

The remaining 22 sailors are feared dead, after unsuccessful search attempts by air forces from Japan, Taiwan, China and the Philippines.

### Record Status

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Reporting Administration:	IMO Secretariat	Created:	2012-01-05 (imosec:bivan)
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Last updated:	26/09/2012 16:08:36 (bivan)
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Status:	<input checked="" type="checkbox"/> Validated	<input type="checkbox"/> Member States only	<input checked="" type="checkbox"/> Public/All
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Reporting:	<input checked="" type="checkbox"/> Include in reports
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Administrative Notes (internal use only):	
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**[4] BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties:**

(a) The Charterers shall ensure that all solid bulk cargoes to be carried under this Charter Party are presented for carriage and loaded always in compliance with applicable international regulations, including the International Maritime Solid Bulk Cargoes (IMSBC) Code 2009 (as may be amended from time to time and including any recommendations approved and agreed by the IMO).

(b) If the cargo is a solid bulk cargo that may liquefy, the Charterers shall prior to the commencement of loading provide the ship's Master, or his representative, with all information and documentation in accordance with the IMSBC Code, including but not limited to a certificate of the Transportable Moisture Limit (TML), and a certificate or declaration of the moisture content, both signed by the shipper.

(c) The Owners shall have the right to take samples of cargo prior to loading and, at Charterers' request, samples to be taken jointly, testing of such cargo samples shall be conducted jointly between Charterers and Owners by an independent laboratory that is to be nominated by Owners. Sampling and testing shall be at the Charterers' risk, cost, expense and time. The Master or Owners' representative shall at all times be permitted unrestricted and unimpeded access to cargo for sampling and testing purposes.

If the Master, in his sole discretion using reasonable judgement, considers there is a risk arising out of or in connection with the cargo (including but not limited to the risk of liquefaction) which could jeopardise the safety of the crew, the Vessel or the cargo on the voyage, he shall have the right to refuse to accept the cargo or, if already loaded, refuse to sail from the loading port or place. The Master shall have the right to require the Charterers to make safe the cargo prior to loading or, if already loaded, to offload the cargo and replace it with a cargo acceptable to the Master, all at the Charterers' risk, cost, expense and time. The exercise by the Master of the aforesaid rights shall not be a breach of this Charter Party.

(d) Notwithstanding anything else contained in this Charter Party, all loss, damage, delay, expenses, costs and liabilities whatsoever arising out of or related to complying with, or resulting from failure to comply with, such regulations or with Charterers' obligations hereunder shall be for the Charterers' account. The Charterers shall indemnify the Owners against any and all claims whatsoever against the Owners arising out of the Owners complying with the Charterers' instructions to load the agreed cargo.

(e) This Clause shall be without prejudice to the Charterers' obligations under this Charter Party to provide a safe cargo. In relation to loading, anything done or not done by the Master or the Owners in compliance with this Clause shall not amount to a waiver of any rights of the Owners.

**[5] NYPE 2015 – Clause 29 Solid Bulk Cargoes/Dangerous Goods**

(a) The Charterers shall provide appropriate information on the cargo in advance of loading in accordance with the requirements of the IMO International Maritime Solid Bulk Cargoes (IMSBC) Code to enable the precautions which may be necessary for proper stowage and safe carriage to be put into effect. The information shall be accompanied by a cargo declaration summarising the main details and stating that the cargo is fully and accurately described and that, where applicable, the test results and other specifications can be considered as representative for the cargo to be loaded.

(b) If a cargo listed in the IMO International Maritime Dangerous Goods (IMDG) Code (website: [www.imo.org](http://www.imo.org)) is agreed to be carried, the Charterers shall provide a dangerous goods transport document and, where applicable, a container/vehicle packing certificate in accordance with the IMDG Code requirements. The dangerous goods transport document shall include a certificate or declaration that the goods are fully and accurately described by the Proper Shipping Name, are classified, packaged, marked and labelled/placarded correctly and are in all respects in proper condition for transport according to applicable international and national government regulations.

(c) The Master shall be entitled to refuse cargoes or, if already loaded, to unload them at the Charterers' risk and expense if the Charterers fail to fulfil their IMSBC Code or IMDG Code obligations as applicable.

[6] Extract of Bauxite Schedule in the IMSBC Code

Appendix 1

**BAUXITE**

**Description**

A brownish-yellow clay-like and earthy mineral. Moisture content: 0% to 10%. Insoluble in water.

**Characteristics**

Angle of repose	Bulk density (kg/m <sup>3</sup> )	Stowage factor (m <sup>3</sup> /t)
Not applicable	1,190 to 1,389	0.72 to 0.84
Size	Class	Group
70% to 90% lumps: 2.5 mm to 500 mm 10% to 30% powder	Not applicable	C

**Hazard**

No special hazards.

This cargo is non-combustible or has a low fire-risk.

**Stowage and segregation**

No special requirements.

**Hold cleanliness**

No special requirements.

**Weather precautions**

No special requirements.

**Loading**

Trim in accordance with the relevant provisions required under sections 4 and 5 of the Code.

**Precautions**

Bilge wells shall be clean, dry and covered as appropriate, to prevent ingress of the cargo.

**Ventilation**

No special requirements.

**Carriage**

No special requirements.

**Discharge**

No special requirements.

**Clean-up**

No special requirements.

[7] Declaration Form for Cargo Information for Solid Bulk Cargoes

BCSN	
Shipper	Transport document Number
Consignee	Carrier
Name/means of transport Port/place of departure	Instructions or other matters
Port/place of destination	
General description of the cargo (Type of material/particle size)	Gross mass (kg/tonnes)
Specifications of bulk cargo, if applicable: Stowage factor: Angle of repose, if applicable: Trimming procedures: Chemical properties if potential hazard:*	
*e.g., Class & UN No. or "MHB"	
Group A & B* Group A* Group B Group C	Transportable Moisture Limit  Moisture content at shipment
*For cargoes which may liquefy (Group A and Group A and B cargoes)	
Relevant special properties of the cargo (e.g., highly soluble in water)	Additional certificate(s)* Certificate of moisture content and transportable moisture limit Weathering certificate Exemption certificate Other (specify)  * If required
DECLARATION I hereby declare that the consignment is fully and accurately described and that the given test results and other specifications are correct to the best of my knowledge and belief and can be considered as representative for the cargo to be loaded.	Name/status, company/organization of Signatory  Place and date  Signature on behalf of shipper

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[8] Author's articles on liquefaction

- Fkhir, M. A., 'On solid bulk liquefaction' (2016). Vol. 16. *Shipping & Trade Law* 1-3.
- Fkhir, M. A., 'Liquefaction: shipping industry response' (2017). Vol. 17. *Shipping & Trade Law* 4-5.

Both articles are fully reproduced below.

## On solid bulk liquefaction

**Solid bulk cargoes, such as nickel ore and iron ore, have a tendency to liquefy. Such goods can transform from hard to liquid state very rapidly leaving no time for the master or crew to do anything but face their imminent fate. The liquefaction of solid bulk cargoes has claimed many seafarers' lives and dozens of ships. The moisture content present in these cargoes can be dramatically increased to unsafe limits by the mere reason of the vessel's rolling on waves. In response to the alarming number of liquefaction casualties – 13 incidents within seven years, with a death toll exceeding 100 – the IMO introduced the now mandatorily applicable International Maritime Solid Bulk Cargoes (IMSBC) Code.**

The aim of the Code is to provide information on the dangers associated with the shipment of solid bulk cargoes and procedures to be adopted by the relevant parties in order to facilitate the safe carriage of such goods. It sets out the obligations of shippers to provide all the necessary documents to the master prior to shipment, and loading and carriage precautions to be followed by the master when handling and stowing the cargo.

In addition, the Code includes test procedures to determine the moisture content of the cargoes to be followed by laboratories and surveyors, and it also provides a wide list of individual schedules for various solid bulk cargoes that detail specific precautions to be followed in the carriage of such goods. Therefore, strict adherence to the IMSBC Code is required in order to harmonise best practices for the safe carriage of such goods. However, the Code has not brought an end to the occurrence of liquefaction incidents. Five serious liquefaction casualties have been reported since it was made mandatory in 2011.

### IMSBC Code obligations

The Code obligations are aimed at identifying the properties of the cargo to be within safe limits, and best practices during cargo operations to minimise the risk of liquefaction. Therefore, it sets out certain obligations upon shippers, masters and terminal representatives to ensure compliance with the Code and achieve its goals. The obvious obligation upon shippers is to provide all information on the cargo, including signed certificates of the moisture content level, sufficiently in advance of loading operations, which must then be approved by the competent authority. In addition, the master is required to follow SOLAS obligations that are reintroduced in the IMSBC Code, such as full cooperation with terminal representatives during loading operations. Masters, or any party responsible for cargo operations, must follow the procedures laid down in the IMSBC Code in connection with loading, stowing and trimming the cargo, and follow the measures provided in the individual schedules of solid bulk cargoes listed in the Code. The master can suspend cargo operations if any of the safe limits within the Code are exceeded.

What may cause parties not to meet their obligations under the IMSBC Code? Many practical issues involved in the carriage of solid bulk cargoes hinder compliance with the Code. Laboratories and other facilities in the countries of shipment where the tests to determine the moisture content are carried out may be unreliable or inadequate. High demand behind these goods means loading operations may be carried out during monsoon season. Piles of cargoes are exposed to heavy rain at the terminal, increasing moisture content and enhancing the risk of liquefaction. Shippers may be unwilling to admit independent surveyors, grant access to stockpiles, accurately describe the cargo in the shipping documents or provide reliable test results of the cargo's moisture content.

Meanwhile, port authorities also play a part in stopping liquefaction-related incidents. Their role is not to turn a blind eye to the implementation by shippers, charterers and carriers of the IMSBC Code. While it is the shipper's responsibility to carry out procedures for sampling, testing and controlling the moisture content of the cargo to ensure it is within safe limits, such procedures must be approved, and their implementation checked, by the port authority which should then certify the safety of the cargo to the master. Although forged certificates and inaccurate declarations are at the heart of the liquefaction problem, such documents must in principle have been approved and investigated by the terminal authorities who in reality may be compounding the problem by exerting pressure upon the parties to load as quickly as possible, leaving the cargo untrimmed before sailing. For example, shipments from Sierra Leone were reported to have poor infrastructure at load ports with lack of facilities to discharge cargo once loaded if found in a wet condition. It has been reported that tests to determine the moisture content in solid bulk cargoes shipped from Indonesia and the Philippines are usually conducted by the mine owners themselves. They may not necessarily have appropriate facilities and may use their own testing methodology rather than IMSBC Code procedures, aside from having underlying commercial interests in selling the cargo regardless of its safety.

Such practices may result in shippers and authorities falling short of complying with their legal obligations under the IMSBC Code. Pressure must be exercised upon states to ensure rigid enforcement of safety regulations. The IMO lacks such powers, but it is hoped that the IMO Member State Audit Scheme, which was made mandatory in January 2016, could enhance the performance of nations with poor enforcement records, as it entitles the IMO to assess the effectiveness of its member states with the implementation of mandatory maritime instruments. The IMO will set up internationally recognised standards for all member states to follow, to ensure proper implementation of mandatory instruments. If a state falls short of such standards, the IMO may carry out an audit on that state to enhance its ability to meet the established standards and fulfil its obligations. However, while promising, solely auditing and reporting remains something less than effective enforcement.

### The mischief in the IMSBC Code

The IMSBC Code is a new measure but not a magic wand to stop liquefaction. Its effectiveness has rightly been questioned, pointing to certain flaws found in the Code, but being a living document, subject to amendments biennially, it will continue to advance standards in response to emerging issues.

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The Code categorises solid bulk cargoes into three groups; A cargoes which may liquefy, B cargoes which possess a chemical hazard, and C cargoes which are neither liable to liquefy nor possess chemical hazards. Despite this classification, some cargoes in Group C have liquefied, causing severe casualties. In late 2010, three ships capsized due to liquefaction of nickel ore; then listed as a Group C cargo, but subsequently moved to Group A following these incidents and extensive research. Similarly, in 2015, ships carrying bauxite, a Group C cargo, have experienced liquefaction and extensive research is now being carried out to better understand the properties of this cargo with a view to amendment if appropriate. Masters should therefore not assume when Group C cargoes are presented for shipment that they are free of risk, and should take additional safety measures, not provided in the Code, in order to avoid loss.

The IMSBC Code Appendix 2 details several test procedures to determine the moisture content of solid bulk cargoes to be followed by laboratories and surveyors: the Flow Table test, Penetration test and Proctor/Fagerberg test. The method of testing is determined by local practices or by the appropriate authorities. A recent study has highlighted some controversy about these tests, whereby the accuracy and precision of the results is doubted. Research has established that the Flow Table test and the Proctor/Fagerberg test, applied to the same sample of solid bulk material, gave different results.<sup>1</sup> Other research questions the reliability of the Flow Table test because it relies heavily on the person conducting the test. The Penetration and Proctor/Fagerberg tests are more complex and require special expertise, not believed to be currently available in the main countries of shipment.<sup>2</sup> This adds to the uncertainty surrounding solid bulk trades where a party relies on test results that are later found to be inaccurate. Masters are also entitled to carry out the “can test” during loading operations to determine the possibility of liquefaction. This is an on-site examination to check whether any liquid appears on a sample of the cargo by sharply banging it against a hard surface, that in turn would indicate higher moisture content. However, it is not intended to be conclusive in determining the safety of the cargo but can only be an indicative measure of moisture content during loading operations.

Finally, it is also unclear what the legal outcome might be for failing to comply with the IMSBC Code provisions. The Code does not provide penalties or offences for breach, and recourse will be had to national implementing laws in order to find an answer. We only know that the Code is mandatorily applicable, but cannot be sure whether the parties are strictly liable to comply with the rules, or may be pardoned by the exercise of “due diligence” when things go wrong. Failing to have a coherent system of liability in place may result in conflicting interpretation of the Code between jurisdictions.

In conclusion, there remain major areas of development required from the IMO to further improve the IMSBC Code. Test methods need to be developed in order to accurately deliver precise and reliable results for the moisture content present in the cargo. This will enhance the parties’ confidence that the results are truly representative of the cargo and may contribute immensely to the safe shipment of solid bulk goods.

#### Apportioning blame

So, who is to be blamed for the liquefaction incidents? All those involved in the solid bulk trade have played a part in contributing to the occurrence of casualties. Shippers want their cargoes loaded and transported as quickly as possible; shipowners are placed under extreme pressure to accept the cargo and may be willing to slightly relax the rules to make any profits during harsh market conditions; port authorities are not effectively ensuring compliance with mandatory instruments; and there is a lack of confidence in the IMSBC Code due to its flaws. In order to ensure the safety of all those put at risk from solid bulk trades, we should not point the finger of liability at one party but rather collectively work towards establishing a safer environment for shipping such goods.

The IMSBC Code has undoubtedly raised awareness about the issue of solid bulk liquefaction, but its provisions and test procedures need to be developed in order to determine the precise breaking point for such goods to change from hard to fluid state. All those involved in the shipping of solid bulk cargoes must be made fully aware of the risks involved. Commercial pressure exercised by any party must be curtailed, in order to save lives at risk from such trades. In addition, contractual terms agreed between the parties must not contravene the master’s rights to suspend/refuse loading operations of any cargo deemed unsafe. In the meantime, parties should be advised to employ contractual terms addressing practical issues with the carriage of solid bulk cargoes, such as: who bears the costs for sampling and testing the cargo, and the right to appoint an independent surveyor. The parties must be vigilant in the carriage of solid bulk cargoes and closely follow the IMSBC Code, also seeking the support of their P&I Clubs and consulting relevant port authorities to fully engage them in supervising the compliance with the IMSBC Code.

Moustafa Fkhir, LL.M, PhD candidate, University of Southampton

<sup>1</sup> Rose, “The Liquefaction of Solid Bulk Cargoes During Seaborne Transportation”, 2013, thesis submitted to the University of Oxford.

<sup>2</sup> The Standard Club, “Liquefaction of Mineral Ores and Minerals Concentrates”, (Loss Prevention issue, April 2015), [www.standard-club.com/media/1756819/loss-prevention-liquefaction-of-mineral-ores-and-mineral-concentrates.pdf](http://www.standard-club.com/media/1756819/loss-prevention-liquefaction-of-mineral-ores-and-mineral-concentrates.pdf), accessed 5 October 2016.

## Liquefaction: shipping industry response

**The dangers associated with the carriage of solid bulk cargoes are undoubtedly one of the decade's hot issues in the shipping industry. Some of the titles that circulated over this decade convey the alarming threats that have shaken the dry cargo-shipping sector, such as: "Cargo liquefaction still a problem", "Club move to stop liquefaction losses", "Crew safety should come first", "Dealing with the unusual", "Drive to cut liquefaction losses", "Handle with care" and "Preventing liquefaction tops concerns", to name a few.**

No P&I Club has failed to warn their members about the dangers of loading unsafe solid bulk cargoes, and some have even gone so far as to put their policies' cover on hold if such cargoes are loaded without consultation.

No doubt, the aforesaid concerns are legitimate owing to the high numbers of losses reported in the last eight years alone. In January 2012 the nickel ore trade amounted to only six per cent of the bulk trade but accounted for 80 per cent of the fatalities.<sup>1</sup> This article considers how the shipping industry has responded to the issue of solid bulk liquefaction to date, and whether there remains room for further improvements.

### Regulation

The IMO introduced the mandatory International Maritime Solid Bulk Cargoes (IMSBC) Code in January 2011. It provides information about the dangers associated with the shipment of solid bulk cargoes and procedures to be adopted by the relevant parties in order to facilitate the safe carriage of such goods. The Code outlines the obligations on shippers to provide all the necessary documents, including test certificates, to the master prior to shipment (section 4). It also sets out loading and carriage precautions to be followed by the master when handling and stowing the cargo (section 2). Further, the Code details several test procedures for laboratories and surveyors to determine the safe moisture content limits of any given solid bulk cargo to be loaded (appendix 2). Finally, the Code provides a non-exhaustive list of schedules for various solid bulk cargoes that detail specific precautions to be put in place to ensure safe carriage of such goods.

*Shipping & Trade Law*, in its October 2016 issue, touched upon certain flaws found in the IMSBC Code.<sup>2</sup> Briefly, the reported issues were concerned with mis-categorisation of cargoes, questionable test procedures giving unreliable results and, most importantly, lack of an effective enforcement plan leaving the interpretation of its provisions open to diverse national laws. Therefore, subject to further improvements and research, the Code alone does not provide reassurance that the liquefaction nightmare will soon be over.

### Insurance market response

P&I Clubs are perhaps unsurprisingly at the forefront tackling the issues of solid bulk liquefaction. Numerous warnings have been circulated to members putting them on notice of all dangers connected with the carriage of solid bulk cargoes. Requiring their members to strictly adhere to the provisions of the IMSBC Code, and instructing qualified surveyors to conduct investigations into the safety of the cargo in question, are essential conditions if their members want to remain covered under the policy. Undoubtedly, the insurers are the most significant players in tackling the said issue as they have contributed immensely to raise the industry's awareness of the potential damage from liquefaction incidents.

### Classification societies' contribution

Section 7 of the IMSBC Code allows shipment of any solid bulk cargo regardless of its moisture content level, even those that are liable to liquefy, if such shipments are carried aboard specially constructed or fitted cargo ships. Such vessels must have "permanent structural boundaries, so arranged as to confine any shift of cargo to an acceptable limit", and ClassNK is reported to have registered the world's first such specialised vessel.<sup>3</sup>

Similarly, RINA has introduced rigorous structural design modifications to meet the standards specified in section 7 of the Code. Such can be achieved by retrofitting longitudinal bulkheads in the holds, so that any liquefaction will be confined within these boundaries without compromising the stability of the vessel. Unfortunately, this option is not as commercially attractive to shipowners as it may at first sight appear – the addition of these bulkheads may cost in the region of US\$3 million and may also have the effect of limiting the vessel to the solid bulk trade alone.

### BIMCO's answer

BIMCO, being the representative of shipowners' interests, could not remain silent on the issue of solid bulk liquefaction and, to date, has proposed two clauses for incorporation in charterparties. The first is the rather lengthily-titled BIMCO Solid Bulk Cargoes that Can Liquefy Clause for Charter Parties, and the second is found in the recent revamp made to the NYPE 2015 form. Both versions are strictly in owners' interests, conferring all the risks arising out of carrying solid bulk cargoes and the expenses in complying with the IMSBC Code's provisions upon charterers.

Due to many uncertainties, addressing the liabilities in well-drafted clauses in the charter is without a doubt paramount, but owing to the current market conditions it is not a given that charterers would readily accept such clauses in the first place. Certainly charterers will be reluctant to shoulder such risks, bearing in mind the deficiencies of the IMSBC Code itself.<sup>4</sup> It is true that forged documents, produced by shippers or charterers, are mostly blamed for liquefaction casualties, but in some cases these parties have strictly followed the Code; yet incidents followed. In other cases, where charterers may have taken proper steps to establish the safety of the cargo (having samples analysed in other countries in order to establish accurate and reliable test results), there nevertheless remains a risk that the master may unreasonably suspend cargo operations and cause unnecessary delay at charterers' expense. Therefore,

charterers may be justified in refusing to insert the said BIMCO clauses in their charters, as they are not the only party whose actions may be causative of loss.

#### Port authorities' actions

Unfortunately, many port authorities, mainly in the countries of shipment, are adding insult to injury by, as reported in some cases, exercising pressure upon the parties to load as quickly as possible to evacuate the berth. Such practice gives the master no time to verify the safety of the cargo nor to follow the necessary precautions in trimming the cargo or loading it properly in accordance with the Code. In addition, port authorities are, in principle, obliged to verify the safety of the cargo and be the IMO's watchdog to ensure effective enforcement of its conventions.<sup>5</sup> But sadly, this cannot always be the case, jeopardising safety in the global shipping trade.

#### Conclusion

Having analysed how the concerned parties have responded to the liquefaction issue, one must assess the strength, weakness and overall effectiveness of the actions taken.

Marine liability insurers are playing a major part in stopping liquefaction incidents, and their contribution is noted. The IMO is biennially amending the IMSBC Code to meet its ultimate goal of preventing further losses, and research is consistently underway to better understand the properties of solid bulk cargoes. With regards to Class proposals, they are a valid option, provided owners are willing and able to meet the costs involved in the proposed retrofitting standards. As for BIMCO's clauses, making compliance with the regulation a "condition" may in fact clarify the position as opposed to the current uncertain effect of breaching the IMSBC Code provisions, and it will be interesting to see, first, whether such clauses could make their way into the charter and, secondly, how they would be interpreted in a court of law.

*Moustafa Fkhir, Trainee Solicitor, Elias Law Ltd.*

*LLM, PhD Candidate, Southampton University*

1 Vittone, M, "Bulk Trade-Off: Blood for Money in Indonesia", <http://gcaptain.com/bulk-trade-off-indonesia/> (accessed February 2017).

2 Fkhir, *Shipping & Trade Law*, October 2016, (2016) 16 STL 8 1 (volume 16, issue 8, page 1).

3 "ClassNK Welcomes World's First Specialized Nickel Ore Carrier to Register", [www.allaboutshipping.co.uk/2012/10/23/classnk-welcomes-worlds-first-specialized-nickel-ore-carrier-to-register/](http://www.allaboutshipping.co.uk/2012/10/23/classnk-welcomes-worlds-first-specialized-nickel-ore-carrier-to-register/) (accessed February 2017).

4 For which see *Shipping & Trade Law*, October 2016, (2016) 16 STL 8 1 and (2016) 16 STL 8 3.

5 See footnote 2.

[9] Commentary on the operation of off-hire/laytime clauses in solid bulk liquefaction scenarios

It was outlined in Chapter 1 that delay issues often arise at the load port when owners dispute the safety of the cargo and suspend cargo operations. Disputes will follow alleging that the ship is placed off-hire until the master resumes loading operations under time charterers, or that laytime will not count during such suspension of operations under voyage charterers. The outcome of such disputes will largely depend upon the construction of the relevant clauses, and the operation of some standard clauses on liquefaction scenarios is briefly addressed in this commentary.<sup>i</sup>

Under standard off-hire clauses,<sup>ii</sup> charterers are likely to argue ‘default of men’, or ‘default of Master, Officers and crew’, with reference to the master’s conduct in suspending cargo operations,<sup>iii</sup> or the more broader cover provided in ‘any other cause preventing the full working of the vessel’. Most importantly, however, is that the burden of proof is on the charterer to trigger the off-hire clause and bring himself within the exception/event relied upon.<sup>iv</sup> It was held in *Royal Greek Government v. Minister of Transport* that:

*“The cardinal rule ... in interpreting such a charter-party ... is that the charterer will pay hire for the use of the ship unless he can bring himself within the exceptions. I think he must bring himself clearly within the exceptions. If there is a doubt as to what the words mean, then I think those words must be read in favour of the owners because the charterer is attempting to cut down the owners’ right to hire.”<sup>v</sup>*

In order to succeed with the ‘default’ argument, *The Saldanha*<sup>vi</sup> restricted its interpretation to the event where the crew deliberately refuse to perform their services, as it was held that the term ‘default’ should be construed restrictively and renders irrelevant the crew’s negligence or errors in

<sup>i</sup> This analysis was prepared by the author of this thesis.

<sup>ii</sup> See for example clause 15, NYPE 1946 which states that: “In the event of loss of time from deficiency of men or stores, fire, breakdown or damages to hull, machinery or equipment, grounding, detention by average accidents to ship or cargo.... or by any other cause preventing the full working of the vessel, the payment of hire shall cease for the time thereby lost.” In *The Mareva A.S.* [1977] 1 Lloyd’s Rep. 368, Kerr J. stated that: “The object is clear. The owners provide the ship and the crew to work her. So long as these are fully efficient and able to render to the charterers the service then required, hire is payable continuously. But if the ship is for any reason not in full working order to render the service then required from her, and the charterers suffer loss of time in consequence, then hire is not payable for the time so lost.” (page 381).

<sup>iii</sup> Note the latter term ‘default of master’ was adopted because historically ‘default of men’ only referred to officers and crew, see *Royal Greek Government v. Minister of Transport* (1948) 82 Ll.L.Rep. 196.

<sup>iv</sup> *The Doric Pride* [2006] 2 Lloyd’s Rep. 175. Rix Lord Justice held that “Under a time charter the risk of delay is fundamentally on a time charterer, who remains liable to pay hire in all circumstances unless the charterer can bring himself within the plain words of an off-hire provision”. (p.179).

<sup>v</sup> (1948) 82 Ll.L.Rep. 196. p.199.

<sup>vi</sup> *The Saldanha* [2011] 1 Lloyd’s Rep. 187.

performing their duties.<sup>vii</sup> Therefore, it is hardly arguable that a master acting in the course of caution for the safety of his vessel and crew, in suspending cargo operations or refusing unsafe cargo, could fall within the 'default' context.<sup>viii</sup> Nevertheless, arguably, if the master was acting unreasonably in alleging the unsafety of the cargo, such unreasonable conduct could perhaps amount to 'default'. Although there is no authority which defines whether the master's unreasonable action could amount to 'default', it could be a strong argument that if the master's refusal of the cargo was capricious or arbitrary, this could justify that he was refusing to perform his duty for the detriment of charterers, and thus such behaviour may amount to default and entitle the charterer to place the ship off-hire.<sup>ix</sup>

With reference to 'any other cause preventing the full working of the vessel', *The Laconian Confidence* held that 'any other cause' should be construed in accordance with the *ejusdem generis* rule, in that such other causes should reflect, or consideration be given to, the general context of the clause and charterparty, and therefore the event in question should be akin to the ones named prior to it in the clause.<sup>x</sup> The significance of this interpretation is that 'any other cause' will not cover extraneous events, i.e. condition of the cargo or intervention by the authorities, and thus if the preceding named events are only concerned with the physical condition of the vessel, then any other causes that may occur must also be connected with the vessel's condition in order to trigger the off-hire clause.<sup>xi</sup> The clause further entails that the event in question must also prevent the full working of the vessel, and thus the courts would only put the vessel off-hire if the event in question has had

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<sup>vii</sup> By Gross J. at p.191. In this case, the ship was seized by pirates and charterers claimed off-hire due to 'detention by average accidents to ship' or 'default of men'. However, charterer's claim failed because it was held that 'average accident' only applies when it causes damage to the ship, and that 'default of men' cannot be construed broadly because 'it would follow that almost in every occasion when officers or the crew negligently perform, or fail to perform, their duties causing some loss of time, it would cause the vessel to become off-hire. It was held that this would alter *'the bargain typically struck in time charterparties as to the risk of delay'*.

<sup>viii</sup> Brandon J. in *The Ferdinand Retzlaff* [1972] 2 Lloyd's Rep. 120 held that *'where the safety of lives and property at sea are concerned, the Court should be very slow to find that a shipowner ... who faced with a responsible decision, errs on the side of caution, is thereby acting unreasonable'*. (p.123). Although this decision was ruled in connection with a shipowner's decision to withdraw his ship from service to carry out essential maintenance work, it should equally apply in all other circumstances where the safety of lives and property at sea are jeopardised.

<sup>ix</sup> See *The Triton Lark* [2012] 1 Lloyd's Rep. 151. which sets out the nature of a 'reasonable judgment', discussed in Chapter 4 (4.5.5(a)).

<sup>x</sup> [1997] 1 Lloyd's Rep. 139. 150 (by Rix J.)

<sup>xi</sup> *Ibid*, Rix J. in *The Laconian Confidence* [1997] 1 Lloyd's Rep. 139. 150 held that *"In such circumstances it is to my mind natural to conclude that the unamended words 'any other cause' do not cover an entirely extraneous cause, like the boom in Court Line, or the interference of authorities unjustified by the condition (or reasonably suspected condition) of ship or cargo."* In *Court Line v Dant* (1939) 44 Com Cas 345, the vessel was trapped in a river during the China/Japan war by a boom placed by the Chinese forces across the river. It was held that the vessel was not off-hire as she remained fully efficient in herself to perform the required service and the cause of the delay, namely the boom, was wholly extraneous to the vessel.

an impact on the full working of the vessel.<sup>xii</sup> As a result, it is also unlikely that the master's cautious attitude toward loading an unsafe liquefiable cargo would fall foul of such wordings. However, some judges have suggested that amending the phrase 'any other cause' to include the word 'whatsoever' could have the effect of covering external circumstances that may prevent the full working of the vessel.<sup>xiii</sup> Although the word 'whatsoever' may leave the door open for charterers to place the ship off-hire when the master refuses to load a cargo, it would be hard to imagine a court entertaining such an argument when the safety of the crew and vessel is put at risk. Masters are empowered under SOLAS, as discussed in Chapter 2, with sole discretion to make decisions concerning the safety of his vessel and crew. This must entail that any delay, which is caused while the master is examining the safety of the cargo, ought not to be 'a cause' which is preventing the full working of the vessel, hence the vessel should remain on-hire throughout such examination.<sup>xiv</sup>

With regards to laytime and demurrage calculations, whether time runs uninterrupted or not is usually prescribed within the charterparty, but it is uncommon for such clauses to address any period for examining the safety of the cargo. In the absence of express provisions, laytime, and similarly demurrage, generally run continuously unless a delay was resulted from the fault of the owners or those employed by them, i.e. stevedores.<sup>xv</sup> This conclusion was later confirmed in *The Stolt Spur* which established that in cases of laytime and time on demurrage, time will not run for the delay

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<sup>xii</sup> For instance: in *The Mareva AS* [1977] 1 Lloyd's Rep. 368, discharging operations were 15 days delayed because the cargo was found damaged and thus it was more difficult to discharge the cargo. However, it was held that the vessel was not off-hire because the ship herself remained perfectly efficient in the performance of the discharge function, and therefore the damaged cargo had not prevented the full working of the vessel.

<sup>xiii</sup> Rix J. in *The Laconian Confidence* [1997] 1 Lloyd's Rep. 139. 151 held that: "Where, however, the clause is amended to include the word 'whatsoever', I do not see why the interference of authorities which prevents the vessel performing its intended service should not be regarded as falling within the clause, and I would be inclined to say that that remains so whether or not that interference can be related to some underlying cause internal to the ship, or is merely capricious. That last thought may be controversial, but it seems to me that if an owner wishes to limit the scope of causes of off-hire under a clause which is deliberately amended to include the word 'whatsoever', then he should be cautious to do so." The word 'whatsoever' was effective in the following cases to place the ship off-hire; in *The Apollo* [1978] 1 Lloyd's Rep. 200, (Mr. Justice Mocatta) where intervention by health authorities suspending cargo operations placed the vessel off-hire, and Lloyd J. in *The Mastro Giorgis* [1983] 2 Lloyd's Rep 66, where cargo interests arrested the vessel, and the time lost due was considered off-hire.

<sup>xiv</sup> Para.19.2 of Coghlin, T. et al. (2014). *Time Charters* (7th ed.). London: Informa, suggests that "The right of the owners or the master to delay for a reasonable time before complying with an order is not confined to specific categories of cases and the question to be determined in each case is how a person of reasonable prudence would have acted in the circumstances: see the judgments of the Court of Appeal in *The Houda* [1994] 2 Lloyd's Rep. 541 ... Delay may, for instance, be justified in the face of orders which could expose the ship or the cargo to potential peril ... there may be circumstances where there is both a right and a duty to delay in order to seek further information about the source and validity of orders received, even though there may be no immediate physical threat to the cargo or to the ship."

<sup>xv</sup> In *The Union Amsterdam* [1982] 2 Lloyd's Rep. 432. the delay ensued following the vessel's grounding by negligent navigation when she was shifting to berth was held not to count even though owners were not liable for negligent navigation. It has been suggested that the rule is based on the principle that one should not be entitled to take advantage of his own fault, see para.15.8 of Cooke, J. et al. (2014). *Voyage Charters* (4<sup>th</sup> ed.). London: Informa.

caused by the shipowner's fault which deprives the charterer from the use of the ship.<sup>xvi</sup> Accordingly, a charterer may argue, in the absence of express provisions, that the master's fault in suspending cargo operations at the load port has resulted in loss of time, and the consequent delay should not count neither for laytime nor demurrage, as applicable. However, and as argued above, when the safety of the crew and vessel is concerned, the court is likely to be hesitant to find a master acting reasonably in suspecting the safety of the cargo to be at default, unless perhaps charterers could prove that the master was acting unreasonably. In *Chandris v Isbrandtsen-Moller Co Inc.*,<sup>xvii</sup> Devlin J. awarded demurrage for 16 days delay at discharge where the vessel was moved out of the port's limits to complete discharge of the dangerous turpentine loaded onto barges, which charterers had loaded in breach of the contract.<sup>xviii</sup> This could entail that any time spent for dealing with dangerous cargo may well be covered by the demurrage clause, or laytime will continue to run uninterrupted throughout.

Furthermore, there are two more arguments that could support owners at the load port when the master disputes the safety of the cargo. First, in *Inverkip Steamship Co Ltd v Bunge & Co.*,<sup>xix</sup> it was held that time for detention of the ship by reason of the charterer's failure to provide cargo at the load port is covered by the demurrage clause. If the dangerous character of the solid bulk materials presented for shipment is clearly established prior to loading, and the charter expressly prohibits loading of dangerous materials, then arguably charterers have failed to provide permissible cargo under the charter and therefore the ship is detained. Therefore, laytime will continue to run, or the vessel remains on demurrage, and the defaulting charterers will be required to present an alternative safe solid bulk cargo for shipment. Alternatively, owners may rely on Bucknill L.J. statement in *The Argobec*,<sup>xx</sup> where he was determining the actual time at which loading operations were completed, either when charterers' cargo operations duties were discharged, or when owners' responsibility to comply with local rules, were completed, and thus when the laytime clock stops to run. He established that when '*the task of loading is a joint operation, that each party must do what is reasonable to enable the other to do his part, and that loading is not complete until the cargo is so placed in the ship that the ship can proceed on her voyage in safety.*'<sup>xxi</sup> In this case, charterers were

<sup>xvi</sup> *The Stolt Spur* [2002] 1 Lloyd's Rep. 786.

<sup>xvii</sup> (1950) 83 Li.L.Rep. 385.

<sup>xviii</sup> However, although Devlin J. agreed that the fact charterers loaded a dangerous cargo in breach of the charterparty, and thus it entitled owners to repudiate the contract, he accepted that owners' claim was only sound in damages since the vessel had accepted the cargo and arrived at destination. See para.6.48 Schofield, MA. J. (2016). *Laytime and Demurrage*. (7<sup>th</sup> ed.). Informa Law from Routledge.

<sup>xix</sup> (1917) 22 CC 200.

<sup>xx</sup> (1948) 82 Ll. L. Rep. 223, p.229.

<sup>xxi</sup> *ibid*, p.229.

responsible for loading a cargo of grain in bulk, but owners were responsible to comply with local rules for which they were required to bag the grain in the tween decks. Loading of bulk grain was completed at 8.45am but loading of bagged grain was not completed until 15.00pm. Nonetheless, it was held that discharge was not completed until 15.00pm, as it was stated that:

*"[B]agging was a part of loading. It was necessary for the safety of the ship. It was necessary in order to comply with the rules of the Port Warden, rules which charterers agreed to comply with"*<sup>xxii</sup>

As a result, this decision further supports the contention that when the delay is caused to ensure the cargo is loaded safely onboard the vessel, then such time should not interrupt the running of laytime, nor disturb Owners' entitlement to demurrage. As a result, provided the master was acting reasonably, time should continue to run until the solid bulk cargo can be safely loaded onboard.

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<sup>xxii</sup> *ibid*, p.230.

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