

## SHIPMENT OF DANGEROUS CARGO BY SEA

This article examines the US law that governs the shipment of dangerous goods. The early cases imposed the risk of loss or damage caused by dangerous goods on the shipper, the underlying rationale being that a shipper is in the best position to know the characteristics of the cargo that it ships and should either warn the carrier of the nature of the goods or take steps to eliminate the danger. Some doubt was cast on this view when some courts seemed to adopt a fault-based liability approach. An overview of cases, nevertheless, shows that a majority impose strict liability. This view is supported by the US adoption of the Hague Rules in the Carriage of Goods by Sea Act. More recently the adoption of international standards such as in the International Maritime Dangerous Goods Code identifies dangerous goods and provides instructions that specify requirements for packaging, labelling, stowage, *etc.* This Code is supplemented by national legislation in some countries, such as the US. The article concludes with a discussion of the impact of the Code and national legislation on the allocation of risk between shipper and carrier.

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### I. Introduction

1 At first glance, the subject of liability for damage caused by dangerous goods shipped aboard vessels might appear to be rather straightforward. A review of relevant legislation, government regulations, judicial decisions and international safety standards reveals that the subject is not so simple.<sup>1</sup> For example, consider the word “dangerous”. What does that word mean in the context of sea transport? If one

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1 English law relating to dangerous cargo is discussed in FD Rose, “Cargo Risks: ‘Dangerous’ Goods” [1996] CLJ 601; S D Girvin, “Shipper’s Liability for the Carriage of Dangerous Cargoes by Sea” [1996] LMCLQ 487. Various aspects of US law are discussed in L C Bulow, “‘Dangerous’ Cargoes: The Responsibilities and Liabilities of the Various Parties” [1989] LMCLQ 342.

examines the word in a post-casualty context, then anything brought aboard a ship that results in physical damage or injury, in retrospect, has been demonstrated to have been “dangerous”. After all it caused damage or injury. Under this approach, even the most innocuous substance or thing such as paper may become dangerous if improper stowage places it next to an open flame that ignites the paper resulting not only in the destruction of the paper but also damage to other cargo, the vessel itself and, perhaps, injury to members of the crew.

2 Neither statutes nor US case law provides a comprehensive definition of the term “dangerous cargo”. It is submitted that the term cannot be defined in a vacuum, but rather it should be examined in the context of “risk”. Whether or not cargo is “dangerous” must be ascertainable before a risk of danger has had an opportunity to manifest itself because rights and duties, between shipper and carrier, come into play even before the goods are loaded on board a ship. For example, a shipper may have a statutory or “common law” duty to notify a carrier that its goods are “dangerous” and to take proper steps in preparing that cargo for transport so as to eliminate or reduce the risk of danger. The carrier in devising a proper stowage plan has to factor in the “dangerousness” of cargo it intends to carry.

3 It is submitted that dangerous goods are risk specific. For example, goods may be dangerous because they are toxic or subject to emit toxic fumes under certain circumstances, but they may not be flammable or explosive. Other goods may be flammable but not toxic. Still other goods may present multiple risks in that they are, for example, both explosive and flammable.

4 Also goods may present a risk to a particular interest. For example, goods may present a risk only to themselves (inherent vice) or they may present risks only to other cargo on board, or to the ship, or to seamen or longshoremen who handle the cargo. Goods, such as explosives, may present risks to all of the aforementioned.

5 Goods may present risks only if they are not properly labelled, packaged, handled or stowed. Thus, goods may present risks only if proper precautions are not taken. The failure to take proper precautions may be the result of negligence or simply scientific ignorance. The latter occurs when scientific knowledge has not identified a particular risk such as an inherent characteristic of certain goods to spontaneously explode or become inflamed. There are important cases, important in the sense of the enormity of loss, where science identified the risk of exposing certain goods to flame or spark or other heat source, but, at the time of the

incident, science had not identified the goods as being subject to spontaneous combustion.<sup>2</sup> Such goods may cause damage even though precautions are taken against “known risks”.

6 Creation of risk alone does not automatically result in liability such as in situations where the risk does not cause damage. For example, a shipper’s improper stowage of tin ingots within a container did not render it liable to other cargo or the vessel, unless such negligence was the proximate cause of the collapse of the stowage of 50 containers on the container ship’s deck. In this case, the court concluded that the carrier’s failure to exercise due diligence in allowing an eight-year-old structurally damaged, unseaworthy container to be loaded on the ship was the cause of the collapse.<sup>3</sup>

7 Finally “risk” cannot be viewed in absolute terms. The degree of risk must be factored in. Risks can run the gamut from remote, to possible, to likely and to a virtual certainty.

8 Today, in contrast with early US cases, statutes and international conventions play a major role in regulating the carriage of dangerous goods by sea. Although these regulations were promulgated as safety measures, their existence has ramifications on the imposition of liability where dangerous goods cause damage or injury. As will be seen later in this paper, the regulations are not mere platitudes to “be careful”. They designate thousands of products as dangerous, categorise the danger and provide highly detailed instructions on how specific goods should be packaged, labelled, placarded, stowed, *etc.* In most cases, courts no longer have to struggle with determining whether or not goods are dangerous. If they are on the list, they are. Likewise, in most instances, courts no longer have to determine what constitutes proper notice, packaging, labelling and stowage. If a shipper or carrier disregards a duty imposed under a national or international regime and the breach of that duty proximately causes damage, the party in breach inevitably will be held liable. Although ultimately liability will be imposed pursuant to the rules applicable to carriage of dangerous goods, the regulations make it easier to sort out whether or not the loss was caused by the failure of a party to carry out a duty imposed by law. Today shippers and carriers are legally obligated to be familiar with the regulations, and this requirement, to some extent,

2 *Senator Linie GmbH & Co KG v Sunway Line, Inc* 291 F 3d 145 (2d Cir, 2002) (“*Senator Linie*”).

3 *Houlden & Co, Ltd v SS Red Jacket* 1977 AMC 1382 (SDNY, 1977), affirmed on the opinion below, 582 F 2d 1271 (2d Cir, 1978).

equalises the knowledge of all parties involved in the transportation of dangerous cargo.

9 Yet, just as under the common law, a question remains as to which party bears the loss for an unknown risk. In fact, the regulations may complicate matters because parties tend to rely on them. Should a party be faulted for following the regulations? Should a party be exonerated for doing precisely what the regulations demand under circumstances where a regulation is based on imperfect information? This problem can occur where no one knows that goods are dangerous. The problem can also occur when it is known that a product poses a risk of a particular danger but, unknown to the world, it poses a risk of another danger as well. These and other issues will be discussed in this paper.

## II. Dangerousness<sup>4</sup>

10 In one sense, all goods shipped by sea should be safe, that is, not present a risk of damage to themselves, other cargo, the ship or cause injury to persons aboard. Thus, if all of the risks associated with particular goods are known, and armed with that knowledge the goods are properly labelled so that all who come in contact with them know what precautions to take, and further if the goods are properly prepared for shipment and properly stowed, the risks presented by the cargo will have been effectively eliminated. In that sense, those goods are not “dangerous”. Reality proves otherwise. With respect to some goods, it is not possible, at the time they are shipped, to know of all the risks presented. Science simply has not identified all risks for all goods that are shipped by sea. But even where risks are known, some goods are so inherently risky that while it is possible to guard against them, it may not be possible to completely eliminate them. Likewise when goods have been properly prepared and stowed, an intervention of some outside force may compromise the precautions that had been taken, such as where a collision occurs not due to the fault of the carrying vessel. More importantly, there is the human element. Goods are not always properly prepared for shipment or properly stowed. In such cases, the dangerousness of the goods – whether inherent or arising under the circumstances of their carriage – results from the negligence of the shipper, carrier or some other person.

4 “Dangerousness” under national legislation and the IMDG Code will be discussed subsequently.

11 Determining whether cargo is dangerous sometimes must be made by the master of a vessel in deciding whether to load cargo or whether to load all of the cargo proffered. For example, in *A & D Properties, Inc v M/V Volta River*,<sup>5</sup> the court upheld the decision of the master of a vessel who refused to load part of a shipment of coal. The court found that the coal in several barges from which it was to be loaded on the vessel had become wet from rainfall and presented risks of explosion and fire through spontaneous combustion thereby endangering the vessel, her crew and other cargo and also of producing an acid that could damage the vessel's hull plates. The court acknowledged that a carrier is obligated to carry cargo that it has agreed to carry pursuant to its contract of carriage but relied on an exception to the rule recognised by the Supreme Court<sup>6</sup> where cargo:<sup>7</sup>

... through no fault of the carrier [or the master], cannot be carried without danger to the vessel, her crew, and her other cargo". ... The determination of whether cargo can be carried safely is committed to the sound discretion of the master, upon whom the responsibility for safe carriage rests. ... [W]hen the master rejects cargo based on a well founded concern for the safety of the vessel, after due consideration of all of the circumstances, his decision will not be judged with hindsight.

In this case, the master had consulted with two marine surveyors and acted with the approval of the charterers. The master did not act "capriciously" or "unreasonably".<sup>8</sup>

12 In *Boyd v Moses*,<sup>9</sup> the case relied on in the previous case, the master did not want to carry a cargo of lard that was leaking from casks. The charterer agreed to hold the ship harmless for any damage that might occur from the carriage of the lard. The leaking lard damaged a cargo of wheat, and the carrier paid for the damage. The court held that the carrier was entitled to recover from the charterer. The court stated: "Safety to the cargo received on board, though not so high a

5 1983 WL 637; 1984 AMC 464 (ED La, 1983).

6 *Boyd v Moses* 74 US 316 (1868) ("*Boyd*"). See also *The Ensley City* 71 F Supp 444 (D Md, 1947), affirmed sub nom *Isthmian SS Co v Martin* 170 F 2d 25 (4th Cir, 1948).

7 *Supra* n 5, at \*5.

8 *Ibid*. See *Harloff v Barber* 150 F 185 (SDNY, 1907) for a case where the court determined that the master acted unreasonably in refusing to load cargo, unless extraordinary precautions were taken, despite the fact that numerous knowledgeable persons assured him that such measures were unnecessary.

9 *Boyd, supra* n 6.

consideration as safety to the ship, is one which should constantly govern the action of the master.”<sup>10</sup>

13 Some goods are inherently dangerous. For example, it is well known that certain goods are subject to spontaneous combustion and that known risk undeniably puts those goods within the category of dangerous goods. As one court has stated: “Coal is a spontaneously combustible substance whose nature and properties may present a danger to coal carrying vessels.”<sup>11</sup> The carriage of jute<sup>12</sup> and copra<sup>13</sup> have been found to present a similar danger.

14 Some goods present danger only under particular circumstances. For example, goods may be flammable or explosive but only if certain conditions are present on the ship. These goods, although not inherently dangerous, may become so. These include iron turnings, borings and filings in large bulk when wet and containing large amounts of waste material;<sup>14</sup> goods that ignite or explode when exposed to open fire, sparks, or other sources of heat, such as the sun including crude naphthalene;<sup>15</sup> and scrap motion picture film.<sup>16</sup> Others may present risks to the stability of a ship, such as wheat in bulk<sup>17</sup> and water-damaged raw bulk sugar.<sup>18</sup> Goods may be dangerous if their packaging is unable to contain them, such as where sulphur dichloride is improperly packed by the shipper,<sup>19</sup> or

10 *Id.*, at 320.

11 *A & D Properties, Inc v M/V Volta River*, *supra* n 5. See also *Aktieselskabet Fido v Lloyd Brasileiro* 267 F 733 (SDNY, 1919), *infra* [34] of this article, affirmed in 283 F 62 (2d Cir, 1922).

12 *Bank Line, Ltd v Porter* 25 F 2d 843 (4th Cir, 1928).

13 *Old Colony Ins Co v The SS Southern Star* 280 F Supp 189 (D Or, 1967).

14 *Westchester Fire Ins Co v Buffalo Housewrecking & Salvage Co* 129 F 2d 319 (2d Cir, 1942). Here, the trial court found that the turnings could be dangerous under certain conditions but were “not dangerous” in this case because they were free of excessive water and waste.

15 250 F 2d 777 (2d Cir, 1957), on appeal after remand, 269 F 2d 68 (2d Cir, 1959), petition for rehearing granted in part, 273 F 2d 61 (2d Cir, 1959).

16 *Remington Rand, Inc v American Export Lines, Inc* 132 F Supp 129 (SDNY, 1955).

17 *The Vesta* 6 F 532 at 533 (D Mass, 1881). The court stated: “Wheat in bulk is one of the most dangerous kinds of cargo a vessel can carry, owing to its liability to shift in heavy weather and choke the pumps.”

18 *Sucrest Corp v M/V Jennifer* 455 F Supp 371 (D Me, 1978). In *Narcissus Shipping Corp v Armada Reefers, Ltd* 950 F Supp 1129 (MD Fla, 1997), the shipper abandoned its former method of packaging its goods by substituting plastic drums for steel drums. Despite the fact that the plastic drums were unsecured and tended to roll around causing carrying vessels to list dangerously, the shipper refused to authorise measures that would eliminate or minimise the problem. In *The Santa Clara* 281 F 725 (2d Cir, 1922), the shipper misrepresented the character of the goods shipped, which required special precautions in loading to avoid endangering the ship.

19 *Poliskie Line Oceaniczne v Hooker Chem Corp* 499 F Supp 94 (SDNY, 1980).

where precautions are not taken, such as where explosive corks are packaged in bulk.<sup>20</sup> Goods may become dangerous when they are not protected from the elements, such as uncovered caustic acid that had become wet from rain,<sup>21</sup> or where they are allowed to accumulate in an area where seamen are present, such as where caustic soda spilled on deck.<sup>22</sup> Goods may be dangerous if allowed to interact with certain types of other goods, such as where sulphuric acid leaked from drums onto chlorate of potash resulting in a fire.<sup>23</sup> Yet some goods are dangerous only because they tend to damage other goods, such as where wet sugar drained into bales of wool,<sup>24</sup> bleaching powders stowed near empty grain bags,<sup>25</sup> tea stowed near camphor,<sup>26</sup> leaking glycerine stowed on top of furs and skins<sup>27</sup> and leaking grease or lard damaging tobacco<sup>28</sup> or wheat.<sup>29</sup> Goods may be dangerous only if they come in contact with human beings, such as cashew nut shell oil, which can cause dermatitis.<sup>30</sup>

### III. Allocation of risk in the shipment of dangerous goods

#### A. Allocation of loss under the general maritime law

15 Assuming that goods qualify as dangerous, how is the risk of that danger or dangers allocated among various parties? Consider the following possibilities. A risk eventuates and results in damage or destruction of the dangerous goods themselves, or it damages the ship, other innocent cargo, or it injures seamen aboard the vessel or longshoremen during the loading or unloading of the vessel. A shipper of dangerous goods owes various duties to the shipowner whose vessel will carry its cargo and is under a duty to exercise due care not only to the vessel, but to other cargo and personnel aboard the vessel and to those who load and unload the cargo. A shipowner owes various duties to the cargo it carries, to its seamen and to longshoremen who load and unload the cargo. Where a shipowner is held liable for damage caused by dangerous cargo to innocent cargo or for injuries to maritime personnel,

20 *Hamburg-American Line v Atlantic Transport Co* 236 F 505 (3d Cir, 1916).

21 *Schoonmaker Conners Co v Lambert Transp Co* 268 F 102 (2d Cir, 1920).

22 *Ferguson v Erie RR Co* 235 F Supp 72 (SDNY, 1964).

23 *Petition of Isbrandtsen Co, Inc* 201 F 2d 281 (2d Cir, 1953).

24 *Knott v Botany Worsted Mills* 179 US 69 (1900).

25 *Mainwaring v Bark Carrie Delap* 1 F 874 (SDNY, 1880).

26 *The TA Goddard* 12 F 174 (SDNY, 1882).

27 *The Mississippi* 113 F 985 (SDNY, 1902), affirmed in 120 F 1020 (2d Cir, 1903).

28 *The Newark* 18 F Cas 34 (SDNY, 1846) (No 10,141).

29 *Supra* n 6.

30 *Valerio v American President Lines, Ltd* 112 F Supp 202 (SDNY, 1952).

is it entitled to indemnification from the shipper of the dangerous cargo? In other words, which party ultimately is liable when dangerous cargo causes damage or injury? What role does “knowledge of the risk” play in determining liability? The nature and extent of these duties will be discussed later in this paper. As will be seen, there are cases that have held a carrier and/or a shipper liable where dangerous cargo has damaged other cargo or injured a seaman or longshoreman.

16 Some of these questions relating to liability have straightforward answers. It is clear from the cases and statutes that, although a shipper may not be prohibited from shipping dangerous cargo, it may be required to give the carrier notice of the dangerous character of the goods, and it also must exercise due care in labelling the goods, packaging, *etc.* If a shipper ships goods knowing of the risk they present and does not disclose that fact to the carrier who has no knowledge of the nature of the goods, the shipper is either initially or ultimately liable for damage or injury caused by the shipment of its dangerous goods. If a shipper is negligent by giving inadequate notice of the nature of the goods or in packaging them and that negligence is the proximate cause of damage, the shipper will likewise be liable. Furthermore, in these situations, the carrier would not be liable to the shipper for damage to the shipper’s property. However, if the shipper makes proper disclosure to the carrier as to the nature of the goods and properly packages them and the carrier improperly stows the goods or fails to take proper steps to see that the risk presented does not eventuate, then the carrier will be liable for damage or injury resulting therefrom.<sup>31</sup>

17 Some of the earliest cases in the US involved situations where a carrier negligently stowed cargo in a manner that created a risk to other cargo. The risk was either known or in the exercise of due care should have been known to the carrier. Thus, in *The Newark*,<sup>32</sup> the carrier stowed casks of lard in such a manner that leakage from the casks damaged a cargo of tobacco. The casks were leaking when they were delivered and were stowed in such a manner that during the voyage the leakage was

31 Although unnecessary to its decision, the court in *Olsen v United States Shipping Co* 213 F 18 (2d Cir, 1914) stated that where a charterer loads cargo in an improper manner and the master protests on the ground of danger, the charterer has assumed the risk of damage to its cargo and to other cargo.

32 *Supra* n 28. See also *The Mississippi* 113 F 985 (SDNY, 1902) involving negligent stowage of a cargo of glycerine, which the court (at 986) characterised as “a dangerous cargo, especially liable to leakage from the frailty of the packages”. The court found improper stowage because instead of stowing the glycerine in the bottom of the vessel, it was stowed above dry cargo.

bound to taint the tobacco. In fact, some witnesses testified “that lard is a dangerous cargo to ship with other goods like tobacco, and that, without the greatest caution, damage will ensue”.<sup>33</sup> The court rejected the contention that the damage was the result of perils of the sea. Essentially the damage was the result of negligent stowage.

18 Likewise, in *Mainwaring v Bark Carrie Delap*,<sup>34</sup> bleach damaged bales of empty grain bags. The bleach did not come in contact with the bags, but rather fumes from the bleach damaged the bags. The court found that the damage could have been avoided by the exercise of reasonable care by the carrier. The court stated:<sup>35</sup>

Where the carrier is innocently ignorant of the dangerous qualities of the article shipped—as, for instance, where the article is new in commerce, and its properties not known within commercial experience in the particular trade, and in fact unknown to those charged with its carriage, or where there is nothing to indicate or create a suspicion of its being dangerous—it is not negligence in the carrier to omit such precautions as the exercise of reasonable prudence would require, if the dangerous qualities of the article were known.

The court found that bleach had been used in commerce for many years:<sup>36</sup>

... and that the dangerous and corrosive qualities of their fumes are well known, a matter of common knowledge in the trade, and so also of the effect of the breaking of the casks in liberating the fumes, and the liability of the casks to come apart from the action of the powders. The reasonable care that must be exercised to exonerate the carrier must, therefore, be measured by the known danger and his means of guarding against it.

19 Another case involving a cargo of bleach is *The Rangoon Maru*.<sup>37</sup> There a cargo of bleach was shipped in drums. The bleach emitted fumes of gas that required the cargo to be discharged before reaching its final destination. During the process of discharge, 83 drums collapsed because they had been corroded by the bleach and fell into the water. The drums were not retrieved, and suit was brought by the shipper to recover for the lost cargo. The vessel counterclaimed for the cost of transshipment of the

33 *The Newark*, *supra* n 28, at 35.

34 *Supra* n 25.

35 *Id.*, at 878, citing *Pierce v Winsor* 19 F Cas 646 (CCD Mass, 1861) (No 11,150), 2 Cliff 18; *Braise v Braitland* [*sic*] [*Brass v Maitland*] (1856) 6 E & B 470 at 485.

36 *Id.*, at 878. See also *Hamilton v Bark Kate Irving* 5 F 630 (D Md, 1881) (which concerned the transportation of bleach).

37 27 F 2d 722 (2d Cir, 1928).

drums from Bombay to Calcutta and for the cost of discharging the cargo before transshipment. A clause in the bill of lading imposed on the shipper liability for any loss, damage or expense incurred by shipping dangerous goods “without full disclosure of their nature”.<sup>38</sup> The Court of Appeals affirmed the holding of the trial court that the goods had been properly stowed and that their loss was attributed to inherent vice. The Court of Appeals also affirmed the dismissal of the carrier’s claim. The court stated:<sup>39</sup>

The nature of the cargo was certainly disclosed ... Bleaching powder was notoriously dangerous and perishable cargo ... In such circumstances it is unreasonable to suppose that “full disclosure” meant a detailed description of all the attributes of the chemical and an account of everything that might develop in it.

20 Negligent stowage was held to trump an exculpatory clause in *The C Lopez y Lopez*,<sup>40</sup> where a cargo of olive oil damaged a cargo of cork. The bill of lading provided that the carrier was “[n]ot responsible ... for damage caused by other goods”.<sup>41</sup> The court found that the leaky containers of olive oil were stowed too close to the cork. This was bad stowage, which the court equated with negligence. The court concluded that the exculpatory provision did not absolve the carrier of liability for its negligence.

21 Carriage of incompatible cargoes occurred in *The T A Goddard*,<sup>42</sup> where a cargo of camphor damaged a cargo of tea by importing the odour of camphor into the tea. The court summarised the law applied in such cases:<sup>43</sup>

A general ship may carry such goods as are usually carried in the same cargo without liability, if due care is exercised in properly separating and stowing articles which might naturally injure each other. But where articles are received on board known to be dangerous to goods previously shipped, and not usually carried in the same cargo, the ship must be held to take them at her peril ...

22 All the foregoing cases involve cargo that presented a known risk to other cargo if proper precautions were not taken to prevent it from coming in contact with or otherwise degrading other cargo. In other

38 *Id.*, at 726.

39 *Ibid.*

40 297 F 457 (2d Cir, 1924).

41 *Ibid.*

42 *Supra* n 26.

43 *Id.*, at 177.

words, they were cases where the carrier knew of the risk and in the exercise of due care was bound to stow the cargo in such a way as to prevent the dangerous cargo from damaging other cargo. In the one case where the dangerous cargo resulted in damage or loss to the cargo itself, the shipper, knowing of the danger, had to assume the risk of shipment. The cargo was destroyed while it was being off-loaded before reaching its destination to avoid physical damage to the ship.

23 The case of *Pierce v Winsor*<sup>44</sup> is an important case and represents one of two conflicting views on the “common law” liability of shippers. It is pertinent to observe that the case is an admiralty case and, thus, the rule applied by the court is a rule of the general maritime law. The case involved the shipment of a relatively new product that damaged itself and the vessel. Unlike the decisions discussed above where a carrier had notice of the nature of the cargo and was bound to exercise care in its stowage, this case involved a situation where neither the shipper nor the carrier knew of the dangerous properties of the cargo and could not reasonably have been expected to have known of the risk. The opinion on appeal was written by Supreme Court Justice Clifford sitting as a circuit justice. The court followed the approach of the English court in *Brass v Maitland*,<sup>45</sup> which it understood to hold:<sup>46</sup>

... that the shippers undertake that they will not deliver to be carried on the voyage packages of goods of a dangerous nature, which those employed on behalf of the ship-owner may not on inspection be reasonably expected to know to be of a dangerous nature, without expressly giving notice that they are of a dangerous nature.

Part of the reasoning in *Brass* is based on the assumption that a shipper of goods is in a better position to ascertain the dangerous characteristics of the goods than the carrier. The court in *Pierce* stated:<sup>47</sup>

Where damage is sustained in a case not falling within the category of an inevitable accident, and neither party is in actual fault, the loss shall fall on him who, from the relation he bears to the transaction, is supposed to be possessed of the necessary knowledge to have avoided the difficulty.

24 It is clear from this opinion that knowledge of the risk by the carrier is crucial in determining liability. In the earlier cases, knowledge

44 19 F Cas 646 (CCD Mass, 1861) (No 11,150) (“*Pierce*”).

45 (1856) 6 E & B 470 at 481 (“*Brass*”).

46 *Supra* n 44, at 647.

47 *Id.*, at 651.

by a carrier was the critical factor in imposing liability on the carrier. If a carrier knows of the risk and has the option of declining to carry the goods, its acceptance of the goods for carriage imposes a duty to exercise due care to assure that the cargo does not cause damage. Where it fails to do so, this amounts to negligent stowage. The *Pierce* case involved a more unusual situation where neither the shipper nor the carrier was aware of the risk. Therefore, neither party was at fault. In these situations, the *Pierce* court imposes liability on the party it considers to be in the best position to inform itself of any danger to the cargo itself, the ship or other cargo. Under this approach where the loss is due to the carrier's negligence, it is responsible for its own damages and those of innocent cargo. Where the loss is due to the shipper's negligence, or where neither the shipper nor the carrier is at fault, the shipper is responsible if its cargo damages the vessel or innocent cargo.

25 Forty-nine years later, the Court of Appeals for the Second Circuit in *The Wm J Quillan*,<sup>48</sup> a court that was not bound by precedent to follow *Pierce*, took a different view.<sup>49</sup> There the lower court had followed the *Pierce* decision.<sup>50</sup> The issue in that case was whether a shipper who was unaware of the risk presented by its cargo should be precluded from making a claim against the vessel in general average. Because the incident arose out of an unknown risk presented by the cargo, the district court denied the shipper's claim. The Court of Appeals for the Second Circuit held that the district court's reliance on the *Pierce* case was error. In fact, the Court of Appeals regarded the *Pierce* case to have been erroneously decided. It relied, instead, on the English case of *Greenshields v Stephens*,<sup>51</sup> which it understood as denying a shipper's right to a general average contribution "only when he has been guilty of actionable fault or negligence".<sup>52</sup>

26 It is submitted that the appellate court in the *Quillan* case was incorrect in its understanding of both the *Pierce* case and the *Greenshields* case on which it chose to rely. The appellate court in *Quillan* quotes the following extract from *Greenshields*:<sup>53</sup>

48 180 F 681 (2d Cir, 1910) ("*Quillan*").

49 The *Pierce* court was in a different circuit and circuit courts are not bound to follow decisions from other circuits although they are permitted to do so if persuaded by the correctness of a decision.

50 175 F 207 (SDNY, 1910).

51 [1908] 1 KB 51; [1908] AC 431 ("*Greenshields*").

52 *Supra* n 48, at 682.

53 *Id.*, at 683.

There is no absolute warranty by the shipper of safety of carriage in cases where the goods shipped may be openly seen and are known by the shipowners to be by their nature possibly productive of danger. See *Brass v. Maitland* ... As between themselves [shippers] and the shipowner, they have merely shipped that which the shipowner knew he was taking on board with its liability to spontaneous combustion.

The thrust of the court's opinion in *Greenshields* is that where a carrier accepts cargo knowing of the risk, it is bound to accept the consequences of that risk. In *Pierce*, the court found that the carrier did not have knowledge of the risk as the basis for ultimately imposing liability on the shipper. The court in the *Quillan* intended to disagree with the rule announced in *Pierce* because the court stated:<sup>54</sup>

The question to be determined is whether by the maritime law the shipper is deprived of the benefit of contribution in general average when the peril is caused by a concealed defect in his shipment equally unknown to him and to the shipowner.

27 Twelve years later, the same Court of Appeals for the Second Circuit in *The Santa Clara*<sup>55</sup> cited both *Pierce* and *Brass* approvingly in its support of its decision against the shipper. It did not mention *Quillan*.

28 *Quillan* was followed, however, in *Sucrest Corp v M/V Jennifer*,<sup>56</sup> where a shipper sued the carrier for damage to cargo and other expenses, and the carrier counterclaimed against the shipper for hull damage and other expenses. The vessel developed a list because the cargo of "salt water damaged sugar"<sup>57</sup> had shifted, and the vessel was intentionally stranded for the safety of both vessel and cargo. Ultimately, the vessel was towed to safety, and her cargo unloaded. The court made three important findings, to wit, the carrier exercised due diligence to make the vessel seaworthy, and the carrier did not improperly or negligently stow the cargo. It also found that the shipper had no knowledge of the inherently dangerous nature of the cargo nor had it any reason to know. In holding that the shipper was not liable because it neither knew nor in the exercise of due care should it have known of the danger, the court relied on *Quillan* to absolve the shipper from liability. In truth, the case came down to a situation where neither the carrier nor the shipper knew that this

54 *Id.*, at 682; *supra* n 51, at 61–62.

55 281 F 725 (2d Cir, 1922).

56 455 F Supp 371 (D Me, 1978) ("*Sucrest*").

57 *Id.*, at 373.

particular cargo would present problems different than carrying ordinary sugar. Thus, the court left the parties where it found them.

29 In a suit by the owner of a vessel that had been damaged and by beneficiaries of longshoremen who been killed, the court held that the shipper of the goods, even though it was the manufacturer of the goods, was not liable when the goods exploded and caused a fire. The court stated that a shipper must warn the carrier if, as an ordinary prudent man, it ought to have knowledge of the goods' inherently dangerous character, unless the carrier in the exercise of due care knew or should have known of the risk. In this case, the shipper furnished a sample of the cargo to the stevedore as a condition for agreeing to carry and load the ship. No one was aware of the risk, and the court found that no one was negligent. Therefore, it refused to award damages.<sup>58</sup> Although the court used the same approach as the court in *Quillan*, it did not refer to that case.

30 Under the *Pierce* rule, if a shipper is liable for the consequences of its dangerous cargo of which both it and the carrier are unaware, it follows that a shipper will be liable where it knows of the risk and the carrier does not. The same result is reached in the application of the *Quillan* approach. In *The Santa Clara*,<sup>59</sup> the shipper misled the carrier as to the true nature of the cargo. After beginning its voyage, the vessel had to return to port because its cargo had shifted and needed to be restowed properly. Initially the shipper had represented the cargo as being copper ore and that it was stowed properly. However, in truth, the cargo was copper concentrates, which had not been safely stowed. Though acknowledging that a cargo of copper concentrates was not an inherently dangerous cargo, the court concluded that the improper stowage of the copper concentrates created a danger to the vessel. The court cited the *Pierce* case and held that the damages for improper loading should fall on the shipper. Obviously, the shipper knew that the characteristics of its cargo were not as it had represented, and its representation that the method of stowage was in the usual manner for this cargo was false.

31 The result in that case would have been the same under the rule applied in *Quillan* because under that rule, a court will impose liability on a shipper where the shipper is at fault, which it surely was because of its misrepresentations. *Pierce* and *Quillan* use different rules only where

58 *The Richelieu* 27 F 2d 960 (D Md, 1928).

59 *Supra* n 55.

neither party is aware of the risk. In *Narcissus Shipping Corp v Armada Reefers, Ltd*,<sup>60</sup> the shipper had full knowledge that its new method of shipping its product in plastic drums resulted in shifting of the cargo during a voyage causing a vessel to list and thereby endangering the vessel, crew and cargo. The shipper did not advise the bareboat charterer of this danger and also refused to authorise precautions to prevent shifting because of the expense involved. The court stated that the shipper was liable to the charterer because:<sup>61</sup>

Under the general maritime law, cargo owners and shippers each have a duty to warn other interested parties in the maritime venture of any inherent dangers in the cargo of which they know or should know and which the others could not reasonably be expected to know.

The court relied on the *Sucrest* case,<sup>62</sup> which in turn applied the rule of *Quillan*.<sup>63</sup> The same rule was cited by another court relying on the same authorities. This court also stated:<sup>64</sup>

Conversely, a shipper has no duty to warn the carrier of the hazards of which the carrier was aware or could reasonably have been expected to have been aware.

The court explained:<sup>65</sup>

Thus, a carrier does have some obligation ... The obligation does not extend so far, however, as to charge the carrier with knowledge of which it could not reasonably have been aware.

32 That knowledge by the shipowner is a crucial factor in allocating the responsibility for risks caused by carrying dangerous cargo is illustrated by *International Mercantile Marine Co v Fels*.<sup>66</sup> There the shipowner brought suit to recover for damage to its vessel that resulted from an explosion of vapours from 1,000 boxes of soap. The soap contained naphtha. The court found that naphtha was commonly known as being a dangerous substance and was specifically named in US statutes that addressed the subject of dangerous goods. The bill of lading contained a provision that purported to impose liability on shippers for

60 950 F Supp 1129 (MD Fla, 1997).

61 *Id*, at 1143.

62 *Supra* n 56.

63 *Supra* n 48.

64 *Borgships, Inc v Olin Chemical Group* 1997 WL 124127 at \*3 (SDNY, 1997) ("*Borgships*"), overruled by *Senator Linie*, *supra* n 2, and see para 54 of this article below.

65 *Borgships*, *id*, at \*10, n 2.

66 170 F 275 (2d Cir, 1909).

any loss or damage to the ship caused by “dangerous goods shipped without full disclosure of their nature”.<sup>67</sup> The court concluded that the carrier had knowledge that it was carrying a cargo that contained naphtha. The shipper had brought that fact to the carrier’s attention, the packages stated that the soap contained naphtha, and the shipper had informed the carrier that there was some danger from carrying the goods and of the necessity for proper ventilation. The court rejected the carrier’s claim, concluding that the proximate cause of the explosion was improper ventilation.

33 Similarly in *The Zulia*,<sup>68</sup> cargo had been damaged when another item of cargo, an iron shaft weighing 3,500lbs, slipped out of the box in which it was packaged while being loaded on the vessel. The shaft tore a hole in the bottom of the vessel causing it to sink resulting in damage to cargo previously loaded on board. The owners of the damaged cargo sued the carrier. The shipowner’s defence was that the damage was caused by dangerous goods for which there had not been full disclosure. The court rejected this defence concluding that the shipowner and the stevedore were fully aware that the cargo was a heavy shaft and of the method of its packaging.

34 In *Aktieselskabet Fido v Lloyd Brasileiro*,<sup>69</sup> a dispute over demurrage, a district court in the Second Circuit applied the *Quillan* rule and found no fault on either the shipper or the shipowner. But fault and knowledge of risk is not necessarily the same thing. It was unnecessary to rely on *Quillan* because unlike that case where neither the shipper nor carrier was aware of the risk, in this case the dangerous cargo was coal which both parties knew had a propensity for spontaneous combustion. In other words the carrier accepted a cargo knowing of the risks it presented. Interestingly, the Court of Appeals affirmed in a lengthy opinion that did not cite *Quillan* or even rely on the rule postulated in that case.<sup>70</sup> Likewise, it has been held that a carrier is not entitled to be indemnified for loss sustained by the consignee of cargo that was never delivered. The cargo of coal dangerously overheated, and the voyage was terminated. The consignee sued the carrier, who in turn asserted a claim against the shippers of the coal. The claim was based on a failure to warn. The court held that the failure to warn was not a proximate cause of the

67 *Id.*, at 276.

68 235 F 433 (EDNY, 1916).

69 267 F 733 (SDNY, 1919).

70 283 F 62 (2d Cir, 1922).

loss. The carrier was well aware of the risks of overheating when carrying cargoes of coal. A further warning would have had no effect.<sup>71</sup>

35 Liability may generally be imposed on a party whose negligence with respect to dangerous goods causes damage or injury to another. Where a claim is based on negligence, demonstrating that the party alleged to have been negligent was aware of the risk or in the exercise of due care, should have been aware of the risk is crucial. For example, in *Hamburg-American Line v Atlantic Transport Co*,<sup>72</sup> a shipowner sued a stevedore when a wooden box that was being unloaded by the stevedore exploded causing damage to the ship. The box contained explosive corks to be used with toy pistols. The explosion of a single cork posed no danger to the vessel or other cargo, but because many corks were contained in the box, the explosion had great force. No one was aware that such an explosion could take place, and the goods had been loaded in conformity with the requirements of the German authorities. The court held that without knowledge of the potential risk, the stevedore could not be found to have been negligent.

36 In contrast, where a vessel was chartered, and the charterer stowed caustic soda on the vessel without protecting it from the rain, the charterer was liable for the damage caused to the deck of the vessel by the wet caustic soda. The shipowner had chartered the vessel, and the charterer subchartered it. Neither the shipowner nor the charterer was aware, at first, that the subcharterer had loaded caustic soda on the vessel or that it had provided the caustic soda with no protection from the rain. When they advised the subcharterer of the danger to the vessel, it was less than diligent in protecting the vessel. The court found that the subcharterer was aware of the risk and was negligent in not taking precautions to protect the vessel.

37 A shipper who negligently prepares dangerous cargo for shipment will be liable if this results in damage or injury. Thus, where the shipper negligently placed a cargo of drums of sulphur dichloride into a container, it was liable for damages incurred by the vessel.<sup>73</sup> In this case, the court found that the shipper stowed the cargo in the container in violation of federal regulations. In fact, the person who was responsible for loading the container was not even aware of the existence of the

71 *Ente Nazionale Per L'Energia Electtrica v Baliwag Navigation, Inc* 774 F 2d 648 (4th Cir, 1985).

72 *Supra* n 20.

73 *Supra* n 19.

regulations. However, even without invoking negligence *per se*, packing the drums in a manner that enabled them to move around and become damaged constituted a failure to exercise reasonable care. The court gave no countenance to shipper's evidence that it had used this method of stowage in the past without incident. Although it has been said that carriage according to custom is permissible unless it is shown to be unreasonable,<sup>74</sup> an unsafe custom or practice is nevertheless negligence.<sup>75</sup>

38 Sometimes negligence is based on the failure of a party in the exercise of due care to obtain the requisite knowledge. In *Hansen v El Du Pont De Nemours & Co, Inc*,<sup>76</sup> the respondent demise chartered a vessel from the Sand Company. Previously, a vessel engaged by the respondent had sunk, and its cargo of "smokeless powder" and cordite was removed from it and put aboard the chartered vessel. The cargo caught fire, and the chartered vessel was destroyed. The shipowner brought a suit to recover damages from the respondent, predicated its claim in part on the respondent's failure to give any warning as to the flammability of the cargo. The court rejected this contention because the cases that contained the smokeless powder and cordite were labelled as such. The court concluded that the flammability "was discoverable by the exercise of ordinary care and attention".<sup>77</sup> The court further stated: "The presumption is warranted that the Sand Company was reasonably apprised of the dangerous character of the cargo."<sup>78</sup> Nevertheless, the court found that the respondent improperly loaded the cargo and failed to properly care for the cargo, and it was for this negligence that the court imposed liability on the respondent. The appellate court reversed, holding that the actions of the Sand Company personnel both before and at the time of the explosion were the cause of the casualty and superseded the negligence of the respondent.<sup>79</sup>

39 Two cases involving dangerous cargo are of considerable interest. The cases involve virtually identical facts, the same dangerous fertiliser cargo and occurred within months of each other. The US, in its production of munitions for World War II, produced a substance known as ammonium nitrate, which had explosive properties. It was thought, however, that a detonating mechanism of some type was necessary to

74 *O'Connell Machinery Co Inc v MV Americana* 797 F 2d 1130 (2d Cir, 1986).

75 *Supra* n 73.

76 8 F 2d 552 (WDNY, 1925).

77 *Id.*, at 555.

78 *Ibid.*

79 *Hansen v El Du Pont De Nemours & Co* 33 F 2d 94 (2d Cir, 1929).

cause the ammonium nitrate to explode and, in the absence of such a detonator, the substance was harmless. A variety of this ammonium nitrate was found to be an effective fertiliser.

40 To promote agriculture in countries devastated by the War, the US undertook a program of providing the fertiliser to European governments. Fertilizer Grade Ammonium Nitrate (“FGAN”), had been shipped to Europe without incident for several years. In April 1947, an explosion occurred in a cargo of FGAN, which resulted in the deaths of more than 500 people, 3,000 personal injuries and the destruction of a vast amount of property. This incident is known as the “Texas City Disaster”.

41 As might be expected, numerous lawsuits were filed. One suit was brought against the US as manufacturer and shipper of the cargo. Amongst the various theories for recovery, it was asserted that the US had not sufficiently tested the FGAN with respect to its explosiveness in the absence of detonation. This case was eventually resolved in the US Supreme Court. In *Dalehite v United States*,<sup>80</sup> the Supreme Court held that the US was not liable. Suit had been brought against the US under the Federal Tort Claims Act,<sup>81</sup> in which the US waives sovereign immunity for torts committed by its officers, agents and employees. The court held that there is an exception in the Federal Tort Claims Act, known as the discretionary function exception, and that this exception shielded the US from liability in this case. In the course of its opinion, the majority stated:<sup>82</sup>

“There must be knowledge of a danger, not merely possible, but probable” [citation omitted]. Here, nothing so startling was adduced. The entirety of the evidence compels the view that FGAN was a material that former experience showed could be handled safely in the manner it was handled here. Even now no one has suggested that the ignition of FGAN was anything but a complex result of interacting factors of mass, heat, pressure and composition.

42 In *Dalehite*, plaintiffs sought to impose liability on the shipper of dangerous goods under the Federal Tort Claims Act. Therefore, the issues before the court all revolved around the meaning of various provisions, such as “negligence”, under the Act. In this context, neither *Pierce* nor

80 346 US 15 (1953) (“*Dalehite*”).

81 28 USC §§2671ff (2000).

82 *Supra* n 80, at 42.

*Quillan* was relevant, and those cases were not cited in any of the opinions.<sup>83</sup>

43 In the Texas City Disaster, another suit was brought against the carrier, which moved to limit its liability under the US Limitation of Liability Act.<sup>84</sup> Under this statute, limitation is denied where the casualty is the result of the personal negligence of the carrier. The district court in *Petition of Republic of France*,<sup>85</sup> held that the carrier had been negligent in several respects in its failure to protect the cargo against fire and explosion. On appeal, the US Court of Appeals for the Fifth Circuit reversed the decision.<sup>86</sup> The appellate court relied on Finding of Fact number 18 made by the district court:<sup>87</sup>

18. Despite its use as a principal ingredient of high explosives, at the time of the disaster ammonium nitrate was not, and is not now, classified as an 'explosive' for transportation purposes by the Interstate Commerce Commission or the Coast Guard. This is true because it was considered that the [*sic*] [to] cause the detonation of ammonium nitrate, an initial shock or 'booster' of considerable magnitude was required. The chances of such an initial or booster detonation being encountered in normal conditions of transportation has always been considered so remote as to be negligible.

The appellate court found that the evidence established that the explosion "could not reasonably have been foreseen".<sup>88</sup> The Court of Appeals never dealt with the district court's Findings of Fact number 19, which stated:<sup>89</sup>

19. However, ammonium nitrate—together with other nitrates—has long been known and recognized, not alone by scientists and chemists, but by all informed persons in the transportation industry, as

83 In an earlier case not involving the US, the Supreme Court did not seem to base its decision on negligence. Detonators on board a ship were packed according to German safety rules and had never been known to explode under these circumstances. The detonators exploded, nevertheless, causing a hole in the ship, which enabled water to enter the ship and damage a cargo of sugar. Despite the fact that there was no negligence on the part of the ship, the Supreme Court held that the ship was liable for the damage to the sugar. The damage was not caused by an "accident of navigation" as the vessel was in port when the incident occurred (*The G R Booth* 171 US 450 (1898)), and the carrier had no defence. Obviously, the carrier knew it carried dangerous cargo in a general sense. It was aware that the cargo could be dangerous. However, it was not aware of the specific risk that the detonators could explode under the circumstances present there.

84 46 USC app §§181ff (2000).

85 171 F Supp 497 (SD Tex, 1959).

86 290 F 2d 395 (5th Cir, 1961).

87 *Id.*, at 401.

88 *Ibid.*

89 *Supra* n 85, at 503–504.

an 'oxidizing agent' and a fire hazard. It is now, and was long prior to 1947, classified by the Coast Guard as a 'dangerous article' (46 C.F.R., 146.22-100 . . .), and within the sub-class of 'flammable solids and oxidizing materials'. An 'oxidizing material' or 'oxidizing agent' is one which, while not necessarily flammable itself, decomposes when brought in contact with burning organic matter, and releases oxygen in quantity, thus supporting and encouraging the fire, and causing a more rapid rate of combustion, and an increase in temperature (46 C.F.R., 146.22-3) . . . Regulations for its handling and stowage are prescribed by Coast Guard Regulations (46 C.F.R., 146.01-1 *et seq.*).

The appellate court also ignored the district court's conclusion that the master allowed longshoremen to smoke in the presence of the FGAN and that smoking caused the fire.

44 The second case involved an explosion of FGAN that was loaded on a vessel in late June and early July 1947. A fire was discovered in the hold of the ship that contained the FGAN, resulting in an explosion that destroyed the ship and the cargo on board. Suit was brought by the shippers of other cargo that had been destroyed against the carrier, which moved to limit its liability under the US Limitation of Liability Act. The issue was whether the carrier had been negligent in stowing and caring for the cargo. As in the previous case, the district court in *Accinanto, Ltd v Cosmopolitan Shipping Co*<sup>90</sup> found that the carrier had been negligent. The Fourth Circuit, like the Fifth Circuit in the case discussed previously, reversed this decision on the basis that the "knowledge" in existence at the time of the incident did not establish negligence or lack of care. The loading of the FGAN was carried out according to the regulations and the directions of the US Coast Guard, the Baltimore City Fire Department and the Board of Underwriters of New York and under their supervision. The court speculated that if the carrier had asked chemical experts at the time of loading for advice in stowing and handling the FGAN, they would not have received any different directions.<sup>91</sup>

45 Neither of these cases discusses the *Pierce* or the *Quillan* case because the issue was whether or not the carrier was negligent and thereby denied the right to limit its liability under the US statute.

46 Can the consignee of cargo be held liable for damage to a vessel because of allegedly improper packaging? In *Atkins, Kroll & Co v Nedlloyd*

90 99 F Supp 261 (D Md, 1951).

91 *A/S J Ludwig Mowinckels Rederi v Accinanto* 199 F 2d 134 (4th Cir, 1952).

*Line*,<sup>92</sup> the court answered the question in the negative. It distinguished *Luckenbach SS Co v Coast Manufacturing & Supply Co*,<sup>93</sup> because the court in that case discussed Coast's liability as a shipper not as a consignee. It also distinguished *Pierce* as that case dealt with the liability of a shipper. The court, however, did not consider the fact that the consignee had made a cargo claim against the carrier based on the bill of lading and that one who claims the benefit under a contract assumes the obligations. Regardless, the decision is probably correct. The shipper's duty to warn a carrier of the dangers in its cargo may have been breached before the consignee ever came into the picture. The consignee did not enter into the contract of carriage. It played no role in filling out shipping documents or preparing the cargo for shipment.

47 Where a chemical that is known to be dangerous to human beings is allowed to accumulate on the deck of a vessel while the cargo is being discharged, the vessel owner is liable under the Jones Act and for unseaworthiness for injury to its seaman employee whose eye was damaged by the substance. The court found that the vessel owner did not exercise due care for the safety of its employees.<sup>94</sup> Likewise, the seller of a product in having it transported has a duty to warn those who are likely to come in contact with it of reasonably foreseeable dangers of which those persons cannot reasonably be expected to be aware. The warnings must inform those persons involved in the transportation process of the dangerous propensities of the product. In *Harrison v Flota Mercante Grancolombiana, BA*,<sup>95</sup> the beneficiaries of a longshoreman who died from inhaling fumes from the manufacturer-shipper's chemical were allowed to recover damages because the warning given by the shipper was inadequate in seriously understating the risk of inhalation of fumes. This case should be contrasted with those situations where an employee is aware of the dangerous propensities of a substance and the care that should be taken.<sup>96</sup>

48 Knowledge of risk appears to be an important factor in cases involving injury to longshoremen. Several cases have held that regardless of the fact that a stevedore has the primary duty to warn and protect its longshoremen, a carrier knows the risks presented by "dangerous cargo"

92 210 F Supp 315 (ND Cal, 1962).

93 185 F Supp 910 (EDNY 1960) ("*Luckenbach*").

94 *Supra* n 22.

95 577 F 2d 968 (5th Cir, 1978).

96 *Martinez v Dixie Carriers, Inc* 529 F 2d 457 (5th Cir, 1976).

and has a similar duty.<sup>97</sup> In the personal injury context, a vessel may be liable for injury to an employee caused by the insufficiency in the packing of cargo that renders the vessel unseaworthy. A shipper is liable, however, to the employee only if it was negligent in packaging the cargo.<sup>98</sup> The imposition of this duty on shipowners may be called into question after the 1972 amendments to the Longshore and Harbor Workers' Compensation Act,<sup>99</sup> which abolished the action of unseaworthiness for employees covered by the Act, and the Supreme Court's decisions in *Scindia Steam Nav Co, Ltd v De Los Santos*<sup>100</sup> and *Howlett v Birkdale Shipping Co SA*.<sup>101</sup> A freight forwarder is not liable to injured longshoremen who were injured while discharging highly toxic cargo where there was no allegation that it had knowledge that the cargo was toxic and could cause harm.<sup>102</sup>

49 Agreements between the carrier and a shipper may affect the determination as to the ultimate liability for damage or injury. Thus, where a shipowner was sued by a seaman for injuries caused by the escape of fumes from a chlorine gas container that was loaded with scrap on a vessel, the shipowner was entitled to seek indemnity from the shipper. Under the provisions of the time charter, the shipper had the sole responsibility for loading the cargo and agreed to indemnify and hold harmless the shipowner for any liability that might arise out of the cargo loading operations.<sup>103</sup>

50 Regardless of any implied duty or warranty imposed on the shipper to notify a carrier that its cargo is dangerous, a shipper may expressly agree to provide such notice. In *Luckenbach*,<sup>104</sup> a case primarily concerned with the scope of admiralty jurisdiction because the explosion occurred on a pier and damaged goods on the pier and structures on land, and caused personal injuries, the shipper of the cargo of cartons of Cordeau Detonant Fuse sued the carrier for loss of cargo which exploded while in the carrier's custody. The carrier counterclaimed seeking to

97 *Supra* n 30; *Anderson v Lorentzen* 160 F 2d 173 (2d Cir, 1947).

98 *Williamson v Compania Anonima Venezolana de Navigacion* 446 F 2d 1339 (2d Cir, 1971); *DiGregorio v N V Stoomvaart Maatschappij "Nederland"* 411 F Supp 331 (SDNY, 1975), affirmed sub nom *N V Stoomvaart Maatschappij "Nederland" v GTE Intern, Inc* 531 F 2d 1143 (2d Cir, 1976).

99 33 USC §905(b) (2000).

100 451 US 156 (1981) ("*Scindia*").

101 512 US 92 (1994) ("*Howlett*").

102 *Ward v Baltimore Stevedoring Co* 437 F Supp 941 (ED Pa, 1977).

103 *Hidick v Orion Shipping and Trading Co* 157 F Supp 477 (SDNY, 1957).

104 *Supra* n 93.

recover essentially an indemnity against liability for suits that were brought against it by other cargo owners whose cargo had been damaged or destroyed by the explosion and suits by various personal injury plaintiffs. The bill of lading provided “that the shipper shall be liable for loss or damage to the ship or cargo caused by inflammable and explosive goods shipped without a written disclosure of the nature of the goods”. The court held that the carrier stated a claim under the express undertaking by the shipper to notify the carrier as to the explosive nature of the goods.<sup>105</sup> The court also discussed the application of implied warranties, concluding that the express undertaking in the bill of lading was controlling.

51 In carriage not subject to a statutory regime, the parties are free to negotiate the terms of their contract. In the absence of agreement, the rules applied by the courts in such cases are as follows. If a party is negligent with respect to dangerous goods, that party will be liable for damage or injury proximately caused by its negligence. Furthermore, a shipper has a duty to warn a carrier of the dangerous nature of its cargo of which it has knowledge or of which in the exercise of reasonable care it should have knowledge, and of which the carrier does not have knowledge or through the exercise of reasonable care would not be expected to have knowledge. Where neither the shipper nor the carrier is aware of the dangerous nature of the goods and neither by the exercise of due diligence should have had knowledge, there are two views in the US. Under one view, the shipper is strictly liable and, under the other, the shipper is only liable if it is negligent.

52 The parties presumably could change these rules by agreement, making the shipper, for example, an insurer of the safety of its cargo by requiring the shipper to indemnify a carrier for damage to its vessel and for any third-party liabilities imposed on the carrier. An agreement to warn is enforceable. An agreement permitting a carrier to recover an indemnity for losses caused by its own negligence may not be. Such an agreement however probably would not impose any direct liability on the shipper to third parties in the absence of shipper negligence.

105 *Id.*, at 919.

**B. Allocation of loss under the US Carriage of Goods by Sea Act<sup>106</sup>**

53 The US has implemented the Hague Rules<sup>107</sup> by enacting the Carriage of Goods by Sea Act (“COGSA”). COGSA applies to shipments by sea to and from the US in foreign trade. The parties to a domestic shipment may, by agreement, make COGSA applicable to their contract of affreightment.<sup>108</sup> Likewise, parties to a charter party may incorporate the terms of COGSA in their contract of affreightment.<sup>109</sup> COGSA includes specific provisions that deal with dangerous goods and with shippers’ liability generally.

54 Probably the most significant recent case involving dangerous goods to be decided in the US in the context of COGSA is the decision of the US Court of Appeals for the Second Circuit in *Senator Linie GmbH & Co KG v Sunway Line, Inc.*<sup>110</sup> The court stated the question before it as follows:<sup>111</sup>

This appeal poses the question of whether, under § 4(6) of the U.S. Carriage of Goods by Sea Act (“COGSA”), 46 U.S.C. app. § 1304(6), a shipper may be held strictly liable for damages and expenses resulting directly or indirectly from shipments of inherently dangerous goods when neither the shipper nor the carrier had actual or constructive preshipment knowledge of the goods’ dangerous nature.

The cargo that turned out to be dangerous was 300 drums of thiourea dioxide (“TDO”). A fire broke out in the container that contained the TDO. At the time the TDO was shipped it was not listed as a hazardous or dangerous cargo in the International Maritime Dangerous Goods Code (“IMDG Code”) nor was it specifically listed as hazardous in the US Code of Federal Regulations. Following this event, it was listed as a hazardous cargo in both codes. The scientific literature did not reveal that a chemical reaction could occur that would result in fire. In fact the carrier’s own literature characterised TDO as not hazardous for sea transport. As has been described previously, there are two views under the general maritime law as to the proper rule to be applied in determining liability when goods prove to be dangerous causing damage to a vessel or

106 46 USC app §§1300ff (2000).

107 International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading (25 August 1924).

108 46 USC app §1312 (2000).

109 See, eg *Commonwealth Petrochemicals, Inc v S/S Puerto Rico* 607 F 2d 322 (4th Cir, 1969).

110 *Supra* n 2.

111 *Id.*, at 147–148.

to other cargo and neither the shippers nor carrier was aware of the danger. One view is based on fault and the other imposes strict liability on the shipper.

55 In the case at bar, the lower court utilised the former approach and exculpated the shipper.<sup>112</sup> The Court of Appeals reversed, holding that neither COGSA nor the general maritime law supplied the rule applied by the district court. With respect to dangerous goods, the shipper's duty is to warn, and the shipper will be liable for a failure to warn irrespective of its knowledge or its negligence. The court looked first at the language and structure of COGSA. There are two provisions in COGSA that are relevant. Section 1304(6) deals specifically with dangerous goods. It states in part:

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.

The section continues:

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.

56 The court stated that a shipper who ships dangerous goods without the consent and knowledge of the shipowner is liable for damages and expenses resulting therefrom. The word "knowledge" refers to the carrier's knowledge not that of the shipper. The court contrasted this provision with §1304(3), which states that a shipper will not be liable for damage caused by its cargo, unless it was negligent. Clearly, the specific provision with respect to dangerous goods trumps the more general provision. In interpreting the provisions of the US COGSA, the court was persuaded by the analysis of the House of Lords in *Effort Shipping Co v Linden Mgmt SA*.<sup>113</sup> The Court of Appeals paid considerable deference to this decision, observing that COGSA is part of an international effort to achieve uniformity with regard to the carriage of

112 *Insurance Co of North America v M/V Tokyo Senator* 2001 WL 238293 (SDNY, 2001).

113 [1998] AC 605 (HL).

goods under bills of lading. Furthermore, it found that there was nothing in the legislative history of the Hague Rules or the legislative history of COGSA to the contrary. The court examined numerous US cases, most of which are referred to in this paper, and concluded that prior to COGSA there was not a settled rule and that some courts followed the *Pierce* approach and some followed the *Quillan* approach. The court ultimately held that the *Quillan* decision, which previously applied in the Second Circuit, had been overruled by COGSA.

57 The opinion of the Court of Appeals for the Second Circuit raises several interesting questions, such as whether or not this decision by a court much respected for its expertise in cases involving COGSA will be followed by other courts of appeals. Another question is whether or not the rule in COGSA will become the rule applied in cases in which COGSA does not apply such as carriage pursuant to charter parties. Will this decision lend credibility to the *Pierce* rule, which would reach the same result in a non-COGSA case decided under the general maritime law? In other words, will the COGSA rule become a rule of the general maritime law with respect to dangerous cargo? In the absence of the deletion or qualification of §1304(6), it would seem that the rule of *Senator Linie*<sup>114</sup> would apply where the parties not otherwise bound by COGSA have agreed to incorporate it into a charter party or other contract of affreightment, unless they have expressly agreed to eliminate the shipper's strict liability.

58 It may be argued that it is desirable to have a uniform rule in all situations. On the other hand, it may be argued that the rule of freedom of contract should continue to apply to carriage not subject to COGSA because in those situations a carrier has the right to exempt itself by contract from liability in situations where it would be unable to do so if COGSA applied. The Court of Appeals sent out conflicting signals on this point. It stated: "Our holding does not effect [*sic*] the potential applicability of *Quillan, Borgships*<sup>115</sup> and related cases to facts not falling within the scope of COGSA."<sup>116</sup> This statement would suggest that in the absence of agreement to the contrary, negligence is the measure of a shipper's liability in that Circuit. However, in another part of the court's opinion, it stated:<sup>117</sup>

114 *Supra* n 2.

115 It should be observed that *Borgships* was decided under COGSA.

116 *Supra* n 2, at 168, fn 37.

117 *Id.*, at 166.

To sum up, we conclude that the nature of a shipper's dangerous-goods liability under the general maritime law in the United States was not firmly settled in 1936 [the year COGSA was enacted]. The rule of *The Wm. J. Quillan* diverged diametrically from that of *Pierce v. Winsor*; and whereas this Court in *Quillan* disagreed with *Pierce's* holding and interpreted *Brass v. Maitland* to require shipper *scienter* in the dangerous-goods context, the Court twelve years later in *The Santa Clara* cited *Pierce* and *Brass* approvingly for the policy behind their strict-liability holdings.

59 A district court in *Scholastic Inc v M/V Kitano*,<sup>118</sup> discussed the role of a Non-Vessel Operating Common Carrier ("NVOCC") and freight forwarders in facilitating the shipment of dangerous cargo. There, "Shipper" engaged the services of Navtrans at the request of its customer, the consignee, to arrange for the shipment of two containers of activated carbon. Shipper represented to Navtrans that the cargo was not dangerous and furnished Navtrans with a material data safety sheet that did not indicate that the cargo was hazardous for purposes of transport. The bill of lading contained an indemnification provision where dangerous or hazardous goods were shipped without full disclosure to the carrier. Shipper believed that its cargo was not hazardous and did not believe that it had any potential to self combust. Shipper gave Navtrans no specific instructions in regard to the shipment, and Navtrans, in turn, gave no instructions to the actual carrier. In any event, one of the containers caught fire resulting not only in damage to that cargo but to other cargo located in nearby containers. The cargo was found by the court to be "flammable, ... unstable or dangerous nature"<sup>119</sup> within the terms of the bill of lading. It does not appear that the cargo was classified as dangerous material under the IMDG Code or Department of Transportation regulations.

60 Eventually, suits brought against the vessel, Shipper and others were settled leaving only a Shipper's impleader suit against Navtrans for indemnification or contribution. Shipper asserted that Navtrans was liable either as an NVOCC or a freight forwarder. It was conceded that under Second Circuit precedent, the *Senator Linie* case discussed above, a "shipper" is strictly liable for damages caused by a fire resulting from its shipment of dangerous goods regardless of whether or not the shipper was aware or should have been aware of the danger. The court found that the activated carbon was dangerous cargo. In the *Senator Linie* case the

118 362 F Supp 2d 449 (SDNY, 2005).

119 *Id.*, at 454.

Second Circuit also imposed strict liability on an NVOCC, which it held to be a “shipper” under COGSA. The application of this rule would make Navtrans a shipper of dangerous cargo *vis-à-vis* the actual carrier. Shipper, however, would not be able to recover for contribution and indemnification because under its contract with Navtrans, Navtrans would be entitled to indemnity from Shipper. A paragraph in the bill of lading specifically so provided. Thus, while between the ship and other cargo on the vessel Navtrans was a shipper, as between Shipper and Navtrans, Shipper was the “shipper” and Navtrans the carrier. The court held that:<sup>120</sup>

A shipping intermediary cannot be held to have either actual or constructive knowledge of the danger of combustion merely because it was given a product information sheet mentioning the “heat of adsorption.”

In regard to its role as a possible freight forwarder, the court stated that a freight forwarder is not liable to a shipper unless it is negligent. In this case, Navtrans selected a competent actual carrier and was not negligent.

61 In *Serrano v United States Lines Co*,<sup>121</sup> a marine carpenter was injured by the explosion of a tire on a vehicle aboard the vessel. The court held that the defect in the tire made the vessel unseaworthy, and the seaman was entitled to recover from the vessel owner. The carrier was denied the right to recover from the cargo owner, however, because the carrier failed to prove negligence. It held that to the extent that *Pierce* imposed strict liability on the owner of cargo, it had been modified by §1304(3) of COGSA, which imposes liability on the cargo based only on fault. Apparently, the court did not consider the defective cargo to be “dangerous”.

62 In another case,<sup>122</sup> tires were improperly stowed in a container. They became loose and moved around. This allegedly caused damage to plaintiff’s cargo and to the vessel. The court did not treat this as a dangerous cargo case either. For a carrier to recover damages, COGSA requires it to prove actual fault or neglect of the shipper. This statutory provision contained in 46 USC app §1304(3) negates any common law warranty and invalidates hold-harmless clauses. The bill of lading had

120 *Id.*, at 458.

121 238 F Supp 383 (SDNY, 1965).

122 *Excel Shipping Corp v Seatrain International SA* 584 F Supp 734 (EDNY, 1984).

provided that the shipper was liable to indemnify the carrier for damages caused by the cargo.

63 The application of COGSA may enable a carrier to invoke a variety of defences. For example, cargo claims were brought against a carrier whose vessel sank as a result of an explosion in a cargo of detonators.<sup>123</sup> The court refused to impose strict liability.<sup>124</sup> It held that there is no rule under the general maritime law that imposes strict liability on carriers who transport dangerous goods in relation to third-party owners of cargo. The court concluded that the explosion “was caused by the spontaneous heating of the cushioning material used in packaging the detonators” and that the carrier had made out its defence under 46 USC app §1304(2)(q) in that it provided a seaworthy vessel, was free from fault and presented a reasonable and likely explanation of what caused the explosion.

64 An interesting situation occurred in *The Milwaukee Bridge*.<sup>125</sup> There the vessel was carrying, among other cargo, drums of sulphuric acid. While the vessel was under way, the crew discovered that some of the drums were leaking, and they were jettisoned. Subsequently, other drums were found to be leaking. Because of the sea conditions and the heavy weight of the drums, it was difficult to throw them overboard. One of the drums broke and leaked sulphuric acid on the deck. Another broke open and it too leaked sulphuric acid on the deck. Thereafter, while these operations were taking place, the crew constantly washed down the drums to protect them from the acid or from getting on the deck. It was discovered, however, that the deck had been damaged and some corroded rivets had to be replaced. The deck was washed down, and repairs were made. In all likelihood, during this process, some of the acid apparently damaged a cargo of flour in hold number two. It is possible that the act of washing down the deck and the corrosion caused by the acid damaged the flour. This was not held to be a case of negligent stowage. The acid had not been stowed near the flour. The court held that the actions taken with respect to the leaking drums of acid and the washing down of the barrels and the deck were for the purpose of protecting the vessel. Therefore, the carrier was able to rely successfully on the “errors of management” defence provided in the Harter Act.<sup>126</sup>

123 *EAC Timberlane v Pisces, Ltd* 580 F Supp 99 (DPR, 1983), affirmed in 745 F 2d 715 (1st Cir, 1984).

124 *Id.*, at 122.

125 26 F 2d 327 (2d Cir, 1928).

126 46 USC app §192 (2000).

### C. *Damage caused by fire*

65 Sometimes the risk posed by cargo arises from its flammability. Where a fire does occur and the dangerous goods are destroyed or other cargo is damaged, suit may be brought against the carrier. However, the US has enacted two provisions that deal with a carrier's liability for damage to cargo caused by fire, the Fire Statute<sup>127</sup> and COGSA.<sup>128</sup> Despite the fact that the language of the statutes is not identical, the statutes have been interpreted so that a carrier is not liable for damage to goods caused by a fire, unless the fire was the result of personal negligence of the carrier.

66 In *Bank Line, Ltd v Porter*,<sup>129</sup> the court found that conditions on the vessel that created a danger of fire were known by the owner who permitted them to exist. The owner knew that the cargo was subject to spontaneous combustion and had been on the vessel for a prolonged period of time, and the owner failed to take steps such as unloading or ventilating the cargo that would have prevented the fire. Thus, the defence was rejected.

67 In *Remington Rand Inc v American Export Lines*,<sup>130</sup> scrap film was shipped in drums. The drums were labelled in conformity with Coast Guard regulations. The regulations applicable to these goods specified "stow well away from all sources of heat. Protect from temperatures exceeding 100 degrees F".<sup>131</sup> The warning label stated: "Keep away from fire, heat and open flame lights."<sup>132</sup> The cargo was stowed below deck in an unventilated area and later was stowed on deck with no protection from the open sun for 16 days. This occurred at the port of Bombay, notorious for its heat and humidity. There was an explosion in the drums that resulted in a major fire.

127 46 USC app §182 (2000):

No owner of any vessel shall be liable to answer for or make good to any person any loss or damage, which may happen to any merchandise whatsoever, which shall be shipped, taken in, or put on board any such vessel, by reason or by means of any fire happening to or on board the vessel, unless such fire is caused by the design or neglect of such owner.

128 46 USC app §1304(2)(b) (2000):

Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from—

...  
(b) fire, unless caused by the actual fault or privity of the carrier.

129 *Supra* n 12.

130 *Supra* n 16.

131 *Id.*, at 133.

132 *Ibid.*

68 Suit was brought by the owners of the cargo destroyed in the conflagration against the carrier. The carrier pleaded a defence under the Fire Statute. Coast Guard regulations warned that the film was:<sup>133</sup>

- (a) highly inflammable; (b) that decomposition may start and ignition occur at relatively low temperatures; and (c) that it should be provided cool storage in a compartment having a temperature of not exceeding 100 degrees F., and well away from any source of heat.

The court held that the Coast Guard regulations trumped the Fire Statute because it was unlawful to stow or transport the cargo in violation of the regulations. It held that the carrier, when it accepted the cargo, was charged with knowledge of its dangerous characteristics and even if it had not had actual knowledge it was under a duty to seek the requisite information. Thus, the carrier was negligent in failing to care for the cargo.

69 The court also found that COGSA did not apply as a matter of law because the goods had been discharged onto lighters even though the bill of lading incorporated the provisions of COGSA. The court held that under these circumstances the fire defence provided by COGSA was merely a term of the contract of carriage. By seeking to limit its liability for damage to cargo caused by fire to those instances where actual fault of the carrier had to be proved, the carrier violated the provisions of the Harter Act, which precludes a carrier from contracting out of liability for damage to cargo caused by any negligence.<sup>134</sup>

70 A contrary result was reached in *Automobile Insurance Co v United Fruit Co.*<sup>135</sup> There the Court of Appeals for the Second Circuit assumed that the cargo, drums of bleaching powder, was being transported in violation of both a statute and Coast Guard regulations. The court stated that for over a hundred years the Fire Statute has insulated shipowners from liability for damage caused to cargo by fire on board a ship “unless such fire is caused by the design or neglect of such owner”.<sup>136</sup> The statute contains specific protection from liability for loss caused by fire and “is not conditioned upon compliance with other statutes, or with Coast Guard regulations”.<sup>137</sup> The court refused to apply

133 *Id.*, at 135–136.

134 46 USC app §191 (2000).

135 224 F 2d 72 (2d Cir, 1955).

136 *Id.*, at 75.

137 *Ibid.*

the doctrine of statutory fault and add another exception to the application of the statute.

71 In *Petition of Skibs A/S Jolund (The M/S Black Gull)*,<sup>138</sup> a fire broke out in a cargo of naphthalene that was stowed in bags on the deck of the vessel. This resulted in damage to other cargo and loss of life. Suit was brought to recover for the damage to the cargo and for the loss of life. The district court held that there was no evidence that the failure to cover the cargo on deck was the proximate cause of the fire. The Court of Appeals reversed the district court's decision, holding that there was ample evidence to demonstrate that a tarpaulin could have been effective in preventing the fire. It pointed to the Coast Guard regulations that required that such cargo "be protected by the use of structural erections, awnings or tarpaulins".<sup>139</sup> Another regulation provided that such cargo "shall be protected from the elements by structural erections or from the direct rays of the sun by means of awnings or dunnaging".<sup>140</sup> Moreover, the vessel had sailed from a Dutch port, and there was evidence that, under provisions of Dutch law, the cargo had to be protected as well. The officer who prepared the loading plan for the vessel was familiar with a book that was the standard authority on the carriage of such cargo. The book stated that such cargo if carried on deck should be covered and protected from the rays of the sun.

72 As to the fire defence, the case was remanded to the district court. On remand the district court again concluded that the shipowner was not liable. On appeal the Second Circuit again reversed the trial court, finding negligent stowage and a causal relation between the stowage and the fire. The court also found that the actual fault of the carrier had been demonstrated because the manner in which the cargo was carried was the usual manner of carrying this type of cargo.<sup>141</sup>

73 There is a different standard, however, for determining the "knowledge" of the carrier in personal injury cases. In such cases the knowledge of the master at the beginning of the voyage is attributed to the carrier. Thus, the carrier was held to have knowledge of the method of carrying the cargo on this voyage, and the fire defence did not apply. Because of this distinction, the court granted a petition for rehearing and

138 *Supra* n 15.

139 *Id.*, at 784.

140 *Ibid.*

141 *Verbeeck v Black Diamond Steamship Corp* 269 F 2d 68 (2d Cir, 1959).

remanded to the trial court the issue of whether or not in regard to the cargo claims the personal negligence of the vessel owner had been proved, specifically whether or not two of its employees had the authority to bind the company.

74 A fire due to spontaneous heating of a cargo of steel turnings caused extensive damage to other cargo and personal injury. Numerous suits were brought against various parties. The carrier filed claims against the National Cargo Bureau, which had been hired by the shipper to supervise the loading, the shippers and the US Coast Guard. The suit between the shippers and the carrier was settled. The court found that the master was guilty of negligence in three respects and that his negligence was the cause of the fire. To the extent that the National Cargo Bureau was negligent at the port of loading, that negligence was not a proximate cause of the fire. The Coast Guard was also held to be not negligent.<sup>142</sup>

75 In *Westchester Fire Ins Co v Buffalo Housewrecking & Salvage Co*,<sup>143</sup> the Court of Appeals affirmed the district court's finding that the cargo that caught fire and damaged the vessel was not dangerous. The bill of lading required written disclosure of dangerous cargo. There was no written notice given in this case. The cargo consisted of turnings and borings. The district court concluded they were not explosives or dangerous goods. Evidence was offered at trial of a pamphlet issued by the Bureau of Explosives, to wit:<sup>144</sup>

Iron turnings, borings, filings, when in large bulk, have a fire hazard, as they oxidize spontaneously if wet, and the oxidation may produce enough heat for ignition. This risk is not sufficient to cause material to be classed as inflammable by ICC regulations and material is accepted by steamship companies.

The pamphlet further provided: "If there is no oily cotton or other fabric, the liability to spontaneous heating is extremely slight."<sup>145</sup>

76 The court stated:<sup>146</sup>

There is an implied warranty by the shipper that the goods are fit for carriage in the ordinary way and are not dangerous. This rule however,

142 *Skibs A/S Gylfe v Hyman-Michaels Co* 438 F 2d 803 (6th Cir, 1971).

143 129 F 2d 319 (2d Cir, 1942).

144 40 F Supp 378 at 381 (WDNY, 1941).

145 *Ibid.*

146 *Id.*, at 381–382.

does not apply where the 'shipowner knows, or ought to know, the dangerous character of the goods' and no obligation to give notice rests upon the shipper 'when the shipowner or his agent has full opportunity of observing the dangerous character of such goods,' ...

The court placed the burden on the plaintiff to show that the "cargo was wet and contained an excessive amount of waste material".<sup>147</sup> It is important to note that the character of the cargo was known to the carrier. The court found that the captain of the barge knew of the danger of wet cargo and had a full opportunity to observe the cargo. The evidence that showed the existence of some waste materials and of some moisture was insufficient. The court concluded that the cargo was "well known; free of excessive water and waste it was not dangerous. The evidence discloses that every reasonable effort and care was taken to clear it of excessive water and waste and the carrier had full opportunity to know what it received".<sup>148</sup> Despite the court's finding that the cargo was not dangerous, it, nevertheless, placed considerable emphasis on the fact that the carrier knew the characteristics of the cargo.

77 Cargo owners who assert that improper stowage caused a fire may not establish the actual fault of the carrier by showing that the vessel lacked a dangerous cargo manifest required by Coast Guard regulations where the breach of the regulations had no relationship to the cause of the fire.<sup>149</sup>

78 Proof that a fire resulted from negligent stowage of sulphuric acid over chlorate of potash and sodium peroxide, which enabled the acid to leak from corroded metal drums onto the other chemicals producing a fire, sustains recovery of damages despite the protections afforded by the Fire Statute and COGSA. The carrier's agent was authorised to and did supervise the loading of the cargo. He was aware of the risk that could result from leakage.<sup>150</sup> In another fire case, negligent stowage resulted in or contributed to a fire in a cargo of copra. The cargo was not properly ventilated and was allowed to become wet. The court also found that under the facts of the case officers of the corporation and the port captain were aware of the conditions and the possibility of fire.<sup>151</sup>

147 *Id.*, at 380.

148 *Id.*, at 382.

149 *Supra* n 135.

150 *Petition of Isbrandtsen Co, Inc, supra* n 23.

151 *Supra* n 13.

**D. Allocation of loss in the context of US regulations and the IMDG Code**

79 The determination of whether or not goods are dangerous has been greatly facilitated by two factors, national legislation and the creation of an international code, both of which identify certain goods as dangerous for the purpose of carriage by sea.

80 The US has enacted legislation from time to time regulating the carriage of certain dangerous goods by sea and authorising a designated official to promulgate regulations pertaining to the carriage of dangerous cargo.<sup>152</sup> Currently, the Hazardous Materials Transportation Act, as amended by the Hazardous Materials Transportation Authorization Act of 1994, 49 USC §§5101–5127, applies to the carriage of hazardous goods by water. As with previous legislation, broad authority is delegated to an administrative agency, the US Department of Transportation, to promulgate administrative regulations to govern the transportation of hazardous materials. Title 49 of the Code of Federal Regulations (“CFR”), pts 105–180, deals with the transportation of hazardous substances to and from the US and within the US. Many of the general provisions apply to cargo imported into and exported from the US in foreign trade by vessels, and §176 contains specific provisions relating to transport by vessel.

81 Hazardous materials are defined as “a substance or material the Secretary [of Transportation] designates under section 5103(a) of this title”.<sup>153</sup> The definition of hazardous materials in the regulations expressly

152 See, eg 46 USC §170 that codified RS §4472. These provisions include a broad delegation of authority to the Commandant of the Coast Guard to formulate regulations, *inter alia*, to deal with dangerous cargo. Pursuant to this legislation the Coast Guard promulgated numerous regulations dealing with dangerous cargo formerly published in 46 Code of Federal Regulations. These statutes have been repealed and replaced by 49 USC §§5101ff (2000). The regulations formerly in 46 CFR have been replaced by regulations promulgated by the Department of Transportation which are published in 49 CFR.

153 49 USC §5102(2) (2000). Sections 5103(a) and 5103(b) provide:

(a) Designating material as hazardous.—The Secretary shall designate material (including an explosive, radioactive material, infectious substance, flammable or combustible liquid, solid, or gas, toxic, oxidizing, or corrosive material, and compressed gas) or a group or class of material as hazardous when the Secretary determines that transporting the material in commerce in a particular amount and form may pose an unreasonable risk to health and safety or property.

(b) Regulations for safe transportation.—(1) The Secretary shall prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce. The regulations—

(A) apply to a person who—

includes materials designated in the Hazardous Materials Table (“HMT”).<sup>154</sup> Section 172.101(a) of the CFR explains the significance of the HMT:

The Hazardous Materials Table (Table) in this section designates the materials listed therein as hazardous materials for the purpose of transportation of those materials. For each listed material, the Table identifies the hazard class or specifies that the material is forbidden in transportation, and gives the proper shipping name or directs the user to the preferred proper shipping name. In addition, the Table specifies or references requirements in this subchapter pertaining to labeling, packaging, ... and stowage of hazardous materials aboard vessels.

82 The HMT is complemented and supplemented by other sources. Section 171.7 incorporates by reference the following:

International Convention for the Safety of Life at Sea (SOLAS) Amendments 2000, Chapter II-2/regulation 19, 2001.

International Maritime Dangerous Goods Code (IMDG Code), 2004 Edition, incorporating Amendment 32-04 (English Edition), Volumes 1 and 2.

83 With respect to the IMDG Code, §171.12(b) states:

The IMDG Code ... sets forth the descriptions, classifications, packagings, labeling and vessel stowage requirements. Notwithstanding the provisions of this sub-chapter, a material that is packaged, marked, classed, labeled, placarded, described, stowed and segregated, and certified (including a container packing certification, if applicable) in accordance with the IMDG Code, and otherwise conforms to this section, may be offered and accepted for transportation and transported within the United States.

- (i) transports hazardous material in commerce;
- (ii) causes hazardous material to be transported in commerce;
- (iii) designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce;
- (iv) prepares or accepts hazardous material for transportation in commerce;
- (v) is responsible for the safety of transporting hazardous material in commerce;
- (vi) certifies compliance with any requirement under this chapter; or
- (vii) misrepresents whether such person is engaged in any activity under clause (i) through (vi); and

(B) shall govern safety aspects, including security, of the transportation of hazardous material the Secretary considers appropriate.

154 49 CFR §172.101.

Some materials that are listed in the IMDG Code are not subject to the US regulations, and the regulations do not apply to them. Such materials may be transported in the US when described, marked and labelled according to the IMDG Code. Materials that are designated as hazardous in the regulations but are not subject to the IMDG Code must comply with the regulations.

84 The regulations impose duties to perform certain pre-transportation functions that include determining the hazardous class of the goods to be shipped, selecting hazardous materials packaging, marking, labelling and placarding a package to indicate that it contains hazardous material, preparing a shipping paper to be given to the carrier, certifying that hazardous material is in proper condition for transportation, loading, blocking, and bracing a hazardous materials package in a freight container, segregating a hazardous materials package in a freight container from incompatible cargo, providing and affixing placards for a freight container indicating that it contains hazardous materials, *etc.* The regulations also apply to transportation functions that include movement of hazardous material, loading, unloading and stowage of hazardous material, and storage incidental to movement. Offering for shipment or transporting goods in violation of the regulations is prohibited.<sup>155</sup> Section 176.3 prohibits a vessel carrier from transporting hazardous material that is not in accordance with §§172 and 173. Section 172 provides an extremely detailed list called the Hazardous Materials Table. As discussed above, this table lists thousands of substances, classifies them, assigns an identification number and provides information with respect to labelling, packaging, quantity limitations, vessel stowage information, *etc.* Section 173 provides additional

155 Section 171.2(e) provides:

No person may offer or accept a hazardous material for transportation in commerce unless the hazardous material is properly classed, described, packaged, marked, labeled and in condition for shipment as required or authorized by applicable requirements of this subchapter ...

Subsection (f) provides:

No person may transport a hazardous material in commerce unless the hazardous material is transported in accordance with applicable requirements of this subchapter ... Each carrier who transports a hazardous material in commerce may rely on information provided by the offeror of the hazardous material or a prior carrier, unless the carrier knows or, a reasonable person, acting in these circumstances and exercising reasonable care, would have knowledge that the information provided by the offeror or prior carrier is incorrect.

requirements with respect to various hazardous materials. Still other sections of the regulations impose further requirements, for example:<sup>156</sup>

(a) A carrier may not transport a hazardous material by vessel unless a certificate prepared in accordance with § 172.204 of this subchapter has been received.

(b) In the case of an import or export shipment of a hazardous material that will not be transported by rail, highway, or air, the shipper may certify on the bill of lading or other shipping paper that the hazardous material is properly classed, described, marked, packaged, and labeled according to part 172 of this subchapter or in accordance with the requirements of the IMDG Code (IBR, see § 171.7 of this subchapter). See § 171.12 of this subchapter.

Section 176.30 requires the carrier or its agents to prepare a “dangerous cargo manifest list, or stowage plan”.

85 The second source of information and regulations dealing with dangerous goods emanates from the Safety of Life at Sea (“SOLAS”) Convention 1974. Specifically, ch VII Pt A reg 1 obligates each state to issue “detailed instructions on safe packaging and stowage of dangerous goods”. A footnote provides:

Refer to the International Maritime Dangerous Goods Code (IMDG Code) adopted by the Organization [IMO] by resolution A. 716 (17) and ... to BC Code ...

Regulation 3 deals with packaging and reg 4 requires specific regulations to deal with marking, labelling and placarding dangerous cargoes. Regulation 5 refers to documents necessary when shipping dangerous cargo. Regulation 6 relates to stowage requirements. The provisions of SOLAS are, however, general. The real meat of the international regime is in the provisions of the IMDG Code. The Foreword to the 2004 edition of the IMDG Code states:<sup>157</sup>

The International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended, deals with various aspects of maritime safety and contains in part A of chapter VII the mandatory provisions governing the carriage of dangerous goods in packaged form or in solid form in bulk. Regulation VII/1.3 prohibits the carriage of dangerous goods except in accordance with the provisions of part A of chapter VII which are amplified by the International Maritime Dangerous Goods (IMDG) Code.

156 49 CFR §176.27.

157 IMDG Code (1973) iii.

...

The IMDG Code ... was recommended to Governments for adoption or for use as the basis for national regulations in pursuance of their obligations under regulation VII/1.4 of the 1974 SOLAS Convention, as amended ...

86 The Preamble to the IMDG Code states:<sup>158</sup>

This reformatted IMDG Code lays down basic principles. Detailed recommendations for individual substances, material and articles and for good practice are included in a 'Dangerous Goods List'.

87 Thus, the IMDG Code, like the US regulations discussed above, contains tables classifying thousands of substances into different categories of dangerousness, and provides details for proper packaging, labelling, placarding, stowing, *etc.*

88 The promulgation of specific comprehensive rules regarding the transportation of dangerous goods by sea such as those discussed above has been helpful in determining which party or parties bear the loss for damage or injury caused by dangerous goods. These standards classify thousands of types of goods as being dangerous, identify the types of risk they present and provide detailed requirements regarding notice, packaging, stowing, *etc.* They tell shippers, carriers and their respective agents what they must do in preparing dangerous cargo for shipment and in transporting such cargo.

89 The complicated manner in which goods are often shipped today has made determinations of liability for shipping and transporting dangerous goods equally as complicated. For example, Company *A* wanted to send arsine gas to its English subsidiary.<sup>159</sup> Arsine gas is poisonous and highly toxic to humans. *A* contacted *B* to fill *A*'s cylinders with arsine gas. *B* filled them with gas and installed a Teflon gasket and a valve outlet protection cap. The valve was made by another company. After it filled the cylinder, *B* closed the handwheel of the valve "hand tight" and the valve outlet cap "wrench tight". *B* placed a red "flammable gas" label and a white "class A" poison label on the cylinders. After the cylinders were returned to *A*, it checked the gas and found that it met specifications. This required removal and replacement of the valve outlet cap. After the tests, *A* sent the cylinders to its shipping department where

158 *Id.*, xvi.

159 *Colormaster Printing Ink Co v SS Asiafreighter* 1991 WL 60413 (SDNY, 1991).

the valve outlet caps were tightened using a wrench. Amongst other functions the valve outlet cap acts as a secondary seal by preventing gas from escaping if the handwheel is accidentally opened. The cylinders were then sent to *C*, which was a container service corporation that consolidates various cargoes for shipment in one container. When *A* sent the cylinders to *C*, they were accompanied by a straight bill of lading, which stated: "Class A poison, compressed gas; N.O.I. in steel cylinders (Arsine)." *A* also prepared and attached a dock receipt that basically contained the same information and referenced the "White Poison Label".

90 The cargo receiving and stuffing facility is owned by *D* but is operated by *C*, who is *D*'s agent. The receipt given to *A* by *C* stated that it was acting as agent for *E*, the charterer of the vessel on which the cylinders were to be shipped. A copy of the dock receipt was sent to *C*'s headquarters. *C*'s operation manager reviewed the dock receipts and contacted *D*'s manager of operations to ascertain whether certain hazardous cargo could be shipped. Specifically he inquired about phosphine, phosgene and arsine. Although phosphine and phosgene were on the list of banned substances, arsine was not specifically listed. It is important to note, however, that poisonous gases of all types require proper labelling. The court found that *D*'s manager failed to tell this to *C*'s manager. After this discussion, *D*'s manager of marine operations approved the shipment of the cylinders containing arsine.

91 Ultimately, the cylinders were loaded into a container by another company, *F*, whose personnel physically loaded the cargo into the containers. The cylinders were loaded horizontally onto a wooden pallet. They were not lashed so as to secure them. No labels or placards were attached to the container. The loaded container was sealed and transported from *C*'s facility to *D*'s facility. The transfer receipt did not indicate that dangerous cargo was in the container. *D*'s personnel responsible for loading the containers on the vessel were supposed to be told of the presence of dangerous cargo. In this case they were not.

92 *C* also assembled other containers, and the transfer receipts for these containers indicated that hazardous cargo was within those containers and specified the types of labels that should be on the containers. *D* prepared a hazardous cargo manifest that did not include the two cylinders of arsine gas, which were in the container in question. The reason they were not included was that they were not referenced on the transfer receipts prepared by *C*. Surprisingly, *C* prepared its own hazardous cargo manifest based on the dock receipts that stated that the

cargo contained “liquid arsine (poison label)”. This manifest was delivered to *D*’s billing department the day after the vessel sailed.

93 The vessel encountered bad weather and subsequently some of the crew and officers became ill, a condition clearly attributable to the arsine gas. When the container was opened, it was discovered that the cylinders apparently had rolled around within the container because of the way they had been stowed. One of the cylinders was full. The other cylinder was empty notwithstanding the fact that the valve outlet cap was in position. The release of the gas damaged other cargo, and the owner of the damaged cargo sued everyone, including numerous parties not mentioned in this summary of facts.

94 The court found that *A* was negligent in over-torquing the valve outlet cap. The court also found that *F* was negligent in failing to properly secure the cylinders to the container. It had a duty to load the cargo in a safe and secure manner. *F* also was negligent *per se* in its violation of federal regulations. It failed to comply with 46 CFR §146.07-5(c) (1974),<sup>160</sup> which requires that cargoes of poison such as arsine gas be properly braced and secured. The major culprit however was *C*. Federal regulations provide for the packing, labelling and certification of dangerous substances and because *C* prepared the shipment for *A*, *C* qualified as a “shipper” who was bound to comply with the regulations. Although arsine gas is not specifically listed in the CFR, it does fall within the category of class A poisons. The CFR provides that packages containing class A poisons must be labelled with a “poison gas” label and be stowed “on deck under cover”.<sup>161</sup>

95 *C* also violated 46 CFR §146.05-13(g) (1974) because it failed to provide proper information on the transfer receipt furnished to *D* as required by 46 CFR §146.05-12(g)(5) (1974). It also violated 46 CFR §146.07-25(a) (1974) in that it failed to properly placard or label the container to show that it held hazardous cargo. *C* was the supervisor and operator of the container facility and had the ultimate responsibility for seeing that it was properly labelled before it was delivered to *D*. Because of *C*’s negligence, *D*’s personnel were unaware that the container included dangerous cargo. The trial court characterised *C*’s conduct as bordering on “reckless”. Finally, the court found that *D* was negligent. The

160 The regulations in 46 CFR have been superseded by the regulations contained in 49 CFR as discussed at para 80 and n 153 of this article.

161 46 CFR §146.25-100 (1974).

conversation between *C*'s representative and *D*'s representative should have alerted *D* that *C* was preparing to ship a container that contained arsine, and, in the light of the grave potential harm, the exercise of due care required it to have taken measures that would have safeguarded against *C*'s negligence.

96 *Boykin v China Steel Corp.*<sup>162</sup> involves a wrongful death action, but the analysis and holding of both the district court and the Court of Appeals clearly have broader application. The narrow holding by the appellate court is simply that the district court was correct in imposing liability on the shipper of goods that had caused an explosion resulting in deaths for which the vessel owner, after settling the death claims, sought indemnification. The case also illustrates the utility of government regulations and the International Maritime Organization ("IMO") codes<sup>163</sup> in allocating various responsibilities between shipper and carrier of dangerous goods.

97 The following details are taken from the district court opinion. The cargo in question was coal. Amongst other characteristics, coal emits methane gas, which presents a risk of explosion. But all coal is not the same, and, with respect to the risk of explosion from the emission of methane, coal is divided into Category A coal and Category B coal. The IMO Code defines Category A coal "as having a history of shipment under similar circumstances without problems arising from methane emission or spontaneous heating".<sup>164</sup> Category B coal is defined as having "shown itself liable, or maybe liable, to emit methane in quantities sufficient to create a hazard".<sup>165</sup> There are also Categories C and D coal, which are not relevant.

98 The IMO Code states that it is the duty of the shipper or his agent to designate the category of coal to the ship's master. The master has a duty to apprise himself of this information. With respect to Category A coal, the IMO Code imposes no requirement as to ventilation.

162 73 F 3d 539 (4th Cir, 1996), which affirmed *Boykin v Bergesen DY A/S* 835 F Supp 274 (ED Va, 1993) ("*Bergesen*").

163 *Bergesen* stated (*id.*, at 277):

The parties agree that as of October 27, 1990, such ships operated under the 1989 edition of the Code of Safe Practices for Solid Bulk Cargoes as promulgated by the International Maritime Organization (the "IMO Code").

Although this paper focuses attention on the IMDG Code, IMO has promulgated other codes to promote the safe transportation of various cargoes.

164 *Id.*, at 277.

165 *Ibid.*

It does prohibit “burning, cutting or other sources of ignition”<sup>166</sup> in the area where the coal is stowed. With respect to Category B coal, the IMO Code requires warning notices against smoking and the use of open flames. It also prohibits “smoking, burning, cutting, chipping or other sources of ignition”<sup>167</sup> in the vicinity of the cargo area where the coal is stowed. The coal should not be stowed in hot areas. The carrier should assure that gases emitted from the material do not accumulate in adjacent enclosed spaces. The IMO Code admonishes that there should be surface ventilation but air should not be directed into the body of the coal. The carrier should also make certain that “working spaces” are monitored for the presence of methane. Finally, in situations where it has not been possible to ventilate, care should be taken to vent any accumulated gas before removing hatches, other openings and unloading.

99 The district court stated the rule as follows:<sup>168</sup>

Shippers of coal have a duty to ascertain the nature and characteristics of their cargo and to warn the ship of “foreseeable hazards inherent in the cargo of which the ... [master] could not reasonably be expected to be aware.”

Based upon the evidence, the district court concluded that the characteristics of the coal in question placed it in Category B. Although the master may not have appropriately required information about the categorisation, the shipper agreed that if it had been specifically asked, it would have stated that it was Category A coal. Even though the shipper had not experienced problems with this particular type of coal, its physical characteristics were such that it “may be liable”<sup>169</sup> to emit sufficient quantities of gas as to create a hazard. The “may be liable” language means that a shipper cannot merely rely on the lack of prior incidents. It must examine the characteristics of the coal to determine its propensity to generate dangerous levels of gas. In fact, the court found that the shipper had sufficient information to suggest that this type of coal would create a risk of methane explosion.

100 The failure to properly advise the master that this was Category B coal in turn affected the way in which the master implemented the requirements with respect to ventilation and the restrictions on activities on vessels carrying Category B coal. When the court identified the

166 *Ibid.*

167 *Id.*, at 278.

168 *Ibid.*

169 *Id.*, at 277.

possible causes of ignition resulting in the explosion, it observed that these activities would not constitute unsafe practices under the IMO Code on a vessel carrying Category A coal but should have been prevented on a vessel carrying Category B coal. It is clear from the district court's decision that the IMO Code requires shippers to ascertain the risks in their cargo and present sufficient information to the carrier so that the carrier can take steps to obviate the risks.

101 Regulations are important in resolving liability issues. Disregard of regulations prescribing the preparation of dangerous goods for shipment may result in a finding of negligence *per se*.<sup>170</sup> Violation of regulations may not only lead to a finding of negligence<sup>171</sup> but may also result in the loss of special carrier defences such as the fire defence.<sup>172</sup> Compliance with regulations may support a finding that a party was not at fault. Thus, in two cases involving the exploding containers of calcium hypochlorite, discussed later, one court imposed liability on the shipper based on its conclusion that the carrier complied with the applicable regulations, while another court imposed liability on the carrier because it failed to adhere to some of the regulations regarding stowage.

102 Regulations are not, however, a sure bet to resolve all dangerous cargo liability issues. Several cases previously discussed involved situations where the type of risk presented by goods is simply unknown to the scientific community at the time the goods are shipped.<sup>173</sup> In those situations, the regulations provide no guidance to either shipper or carrier. Regulations may even lull the parties into a false sense of security

170 *Supra* nn 19 and 159.

171 *Supra* n 138.

172 *Supra* n 130 (*contra*, *Automobile Insurance*, *supra* n 135).

173 For example, in *Petition of Republic of France*, *supra* n 86, the Court of Appeals for the Fifth Circuit reversed the district court's finding that the carrier had been negligent in relying on the district court's finding of fact that the substance was not classified as an explosive in Coast Guard and Interstate Commerce Commission regulations and disregarded another finding that Coast Guard regulations classified the substance as "dangerous" and "flammable".

In *A/S J Ludwig Mowinckels Rederi*, *supra* n 91, the court concluded that the "knowledge" in existence at the time of the incident did not establish negligence or lack of care. The loading of the cargo was carried out according to the regulations and the directions of the US Coast Guard, the Baltimore City Fire Department and the Board of Underwriters of New York and under their supervision. The court speculated that if the carrier had asked chemical experts at the time of loading for advice in stowing and handling the cargo, they would not have received any different directions. In *Westchester Fire Ins Co v Buffalo Housewrecking & Salvage Co* 40 F Supp 378 (WDNY 1941), affirmed in 129 F 2d 319 (2d Cir, 1942), the fact that goods were not classified as "dangerous" helped support the court's conclusion that they were not dangerous.

by not listing a particular item in its dangerous or hazardous goods list or by not listing a particular hazard or risk. As has been seen where COGSA applies, the Court of Appeals for the Second Circuit places ultimate liability on the shipper,<sup>174</sup> and where COGSA does not apply, courts that follow the *Pierce* case do likewise. There are other shortcomings in the regulations. Consider the following cases.

103 The carrier and other cargo damaged in a fire sued the shipper of a cargo of HTH, an algaecide and bactericide and the alleged cause of the fire.<sup>175</sup> The product includes calcium hypochlorite and presents a serious fire hazard because it decomposes violently when exposed to heat or comes into contact with organic materials. The shipper of the cargo was Olin, which also manufactured it. To comply with federal regulations, Olin was required to mark the packages in a particular manner. This is the same type of label provided in the IMDG Code. Olin was also required to advise the carrier, in writing, of the name and a description of HTH as an oxidising agent and certain other facts relating to the weight and number of drums involved. The carrier once so informed has to note the information on its hazardous cargo manifest and transmit the information to the stevedore. The regulations also impose on the carrier the responsibility for directing the stevedore's handling and stowage of the HTH.

104 The trial court, however, did not make sufficient findings to enable the Court of Appeals to review the trial court's conclusion that Olin and the stevedore were responsible for the fire. The trial court failed to deal with the contention that the carrier's negligence was responsible for the fire and with Olin's claim that the carrier assumed the risk of fire when it knowingly accepted the dangerous cargo. Clearly, Olin had a duty to warn the stevedore and the carrier "of the foreseeable hazards inherent in the HTH shipment of which the stevedore and the ship's master could not reasonably have been expected to be aware"<sup>176</sup> but not "of hazards of which they were aware or could reasonably have been expected to be aware".<sup>177</sup> Olin did give some warning, but the trial court made no finding as to what knowledge, if any, the carrier had besides that provided by Olin's warning. The trial judge also did not make any findings as to whether the carrier was charged with notice of governmental and industry regulations applicable to the stowage and transportation of

174 *Supra* nn 2 and 118.

175 *Ionmar Compania Naviera, SA v Olin Corp* 666 F 2d 897 (5th Cir, 1982).

176 *Id.*, at 904

177 *Ibid.*

oxidising agents such as HTH. The Court of Appeals concluded that the adequacy of Olin's warning could not be determined without also evaluating the knowledge and expertise of the carrier and the stevedore. The case was remanded for further findings.

105 In an action by a longshoreman who was injured by inhaling Metanil Yellow ("Yellow Acid"), a corrosive powdered coal tar dye, the court held that notwithstanding the stevedore's primary obligation to provide for the safety of its employees, including ascertaining the nature of the cargo, this does not eliminate the shipowner's obligation to exercise due care in turning over the loading or unloading to the stevedore.<sup>178</sup> The carrier argued that Yellow Acid was not included in the HMT in the CFR. It was, however, listed in the Optional Hazardous Materials Table ("Optional Table"). The purpose of the Optional Table:<sup>179</sup>

... is to list materials that "are subject to regulation under widely applied international standards. They are listed ... in the interest of providing consistency with those standards and to alert persons offering or accepting these materials for transportation that the materials may be subject to regulation in international transport.

106 The carrier contended that because the chemical was not listed in the HMT, it did not have a duty to document the chemical on its dangerous cargo manifest or placard the container. It contended it merely had to include it on its general cargo manifest. Federal regulations placed the duty on the stevedore to determine from the shipping documents whether or not there was hazardous cargo and how it should be handled. This case was based on a motion for summary judgment, which the court refused to grant because there were no facts before it that would enable it to determine whether the stevedore knew that the container contained a hazardous substance or would have discovered that fact in the exercise of due care. Thus, it was for a jury to decide whether the carrier breached its duty of due care. This case was decided before the Supreme Court's decisions in *Scindia*<sup>180</sup> and *Howlett*<sup>181</sup> and may have been impliedly overruled.

107 A container into which was placed a product that contained calcium hypochlorite, a powerful oxidant, was stowed on the deck of the

178 *Cariffe v P/R Hoegh Cairn* 830 F Supp 144 (EDNY, 1993).

179 *Id.*, at 145.

180 *Supra* n 100.

181 *Supra* n 101.

vessel on the top tier.<sup>182</sup> During part of the voyage the vessel was exposed to high temperatures and to the sun. The container exploded and was engulfed by flames. The explosion and fire caused substantial property damage to containers and their cargoes that were near to the container that exploded. The court noted that the CFR states that the stowage requirement for calcium hypochlorite (UN No 1748) is that it be kept cool and dry. In resolving the liability issue, the court placed emphasis on the IMDG Code which it explained as follows:<sup>183</sup>

The International Maritime Dangerous Goods Code (“IMDG”) provides in § 4.5 that its provisions are “applicable to all ships to which the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), applies and which are carrying dangerous goods classified under Regulation 2 of Part A of Chapter VII of that Convention.” The United States is a signatory to the SOLAS Convention, 32 UST 47, and its amendments, 32 UST 5577. The IMDG Code is formulated and reviewed from time to time by a committee of experts affiliated with the United Nations Inter-Governmental Maritime Consultative Organization [now IMO], whose Sub-Committee on the Carriage of Dangerous Goods approved the amendments to the IMDG code.

108 The IMDG Code classifies calcium hypochlorite as an oxidising substance, Class 5.1. Specifically, it states: “Critical ambient temperature of decomposition may be as low as 60°C. May cause fire in contact with organic material or ammonium compounds.”<sup>184</sup> Until 1979, the IMDG Code provided a warning for calcium hypochlorite: “[M]ay decompose violently if exposed to heat or direct sunlight.”<sup>185</sup> This warning was deleted in 1982. Similarly, prior to 1982, the stowage requirement provided that calcium hypochlorite should “be protected from direct sunlight.”<sup>186</sup> This warning was deleted as it was thought this danger did not exist when calcium hypochlorite was carried in containers. Likewise, the warning that calcium hypochlorite might decompose violently was also deleted. Thus, at the time of the incident in question the primary concern was that calcium hypochlorite would “greatly accelerate an already existing fire.”<sup>187</sup> With respect to stowage the IMDG Code provided that calcium hypochlorite be stowed “away from sources of heat.”<sup>188</sup>

182 *Standard Commercial Tobacco Co, Inc v The M/V “Recife”* 827 F Supp 990 (SDNY, 1993).

183 *Id.*, at 994.

184 *Ibid.*

185 *Id.*, at 995.

186 *Ibid.*

187 *Ibid.*

188 *Id.*, at 994.

109 The court found that the carrier adhered to the requirement of the IMDG Code. Compliance with the IMDG Code negated any finding of negligence. The court, however, did not stop here. Inasmuch as its determination that the carrier was not negligent because it complied with the IMDG requirements might not be sustained on appeal, the court further found that the stowage in direct sunlight caused the fire. A carrier is not liable for damage caused by fire, unless it was caused “by the actual fault or privity of the carrier”.<sup>189</sup> The court quoted 49 CFR §176.11(a):<sup>190</sup>

A hazardous material may be offered and accepted for transportation by vessel when in conformance with the requirements of the IMDG Code in place of the corresponding requirements of this subchapter pertaining to ... stowage and segregation.

110 The court then re-examined the relevant provisions of the IMDG Code and concluded that those rules that were specific to the carriage of calcium hypochlorite trumped more general rules that might have warned against exposure to the sun. Rules with respect to other substances specified that they were to be protected from the sun. Thus, the court concluded that the stowage of the calcium hypochlorite was permitted on deck as long as it was stowed away from sources of heat. The elimination of prior warnings specific to calcium hypochlorite would lead a responsible carrier to believe that it did not have to protect calcium hypochlorite from direct sunlight. Yet inexplicably, after all this discussion the court stated:<sup>191</sup>

Once the cargo plaintiff has shown that stowage resulted in a dangerous condition, and that a fire occurred, the Cargo Interests have satisfied their burden of proving that the negligent stowage caused the fire. When the facts of dangerous stowage making a fire hazard are coupled with a condition of the very kind which should have been guarded against, [the] plaintiffs have satisfied all reasonable requirements of burden of proof.

111 Contrary to this view, another court has held that compliance with regulatory requirements does not necessarily satisfy a party’s duty to warn. In this case, the carrier sued the shipper based on the shipper’s failure to warn of the hazardous nature of the cargo. The shipper moved to dismiss on grounds that neither the Hazardous Material Transportation Authorization Act, regulations promulgated by the Department of Transportation, nor the IMDG Code listed this particular

189 46 USC app §1304(2)(b) (2000).

190 *Supra* n 182, at 997.

191 *Id.*, at 1003.

cargo as hazardous. The court denied the motion on grounds that compliance with Department of Transportation regulations does not necessarily, as a matter of law, satisfy a shipper's duty to warn.<sup>192</sup>

112 The shipper labelled drums of magnesium phosphide as "poison when wet" and paid the hazardous cargo shipping rate to its freight forwarder. The bills of lading and Chilean custom forms prepared by the freight forwarder and later delivered to the carrier did not designate the cargo as hazardous. During a storm some of the cargo of hazardous materials was lost over the side. The terms of the bill of lading did not make the shipper liable for expenses incurred by the carrier in retrieving the hazardous substances. Such liability would have to be based on negligence, and the negligence in failing to warn would have to be found to be not too remote in order for the carrier to recover.<sup>193</sup>

113 Technical violations of rules and standards relating to preparation, warnings, and stowage of dangerous goods will not be controlling unless they played a role in causing the damage for which a party seeks to recover. Thus, where dangerous goods were stowed on deck and there were no mandatory rules precluding such stowage and where, as a matter of fact, on-deck stowage was permitted under the IMDG Code, which failed to specify any particular location on deck, violations of packaging requirements were irrelevant when a collision caused the containers in which the packages were contained to be lost overboard. In this case, the court concluded that the violations of the packaging requirements "played no substantial causative role in the environmental pollution that occurred".<sup>194</sup> It was implicit in the court's decision that the stowage was not unreasonable.

114 Two recent cases involving the shipment of dangerous goods are remarkably similar with respect to the nature of the cargo and subsequent casualty. In both cases, the cargo was calcium hypochlorite ("Cal Hypo") that had been stowed in a container. In both cases, an explosion was caused by the Cal Hypo, resulting not only in the destruction of the Cal Hypo and its container but also the destruction of other cargo and the ship. In both cases, the damages were huge.

192 *Supra* n 64.

193 *United States v The M/V Santa Clara I* 887 F Supp 825 (DSC, 1995).

194 *State of Louisiana v The M/V Testbank* 564 F Supp 729 at 740 (ED La, 1983), affirmed in 728 F 2d 748 (5th Cir, 1984).

115 In the district courts, different results were reached. In one case, the district court held that the carrier stowed the cargo in an improper place in that the hold was too hot, thus precipitating the chemical reaction that led to the explosion. This decision was affirmed by the US Court of Appeals for the Second Circuit in *Contship Containerlines Ltd v PPG Industries, Inc.*<sup>195</sup> In the second case, *Petition of M/V DG Harmony*,<sup>196</sup> the district court held that the place of stowage did not expose the cargo to excessive heat and the explosion was a result of the inherent nature of the cargo and the manner in which it was packaged.

116 Both cases involved the application of the IMDG Code. Cal Hypo is a Class 5.1 oxidiser and is designated as “UN 2880” in both the IMDG Code and the HMT of the Department of Transportation Regulations.<sup>197</sup> The IMDG Code provides that stowage is permitted on deck or under deck and that such goods should be kept away from sources of heat where temperatures in excess of 55°C for a period of 24 hours or more will be encountered. The reference to the specific temperature is the air temperature in the area where the cargo is stowed not the temperature of the source of any heat. The IMDG Code also indicates that Cal Hypo should be separated from certain specified substances. The general instructions state that when an individual schedule provides that a substance “should be shaded from radiant heat, stowage under deck should be ‘away from’ sources of heat, including sparks, flame, steam pipes, heating coils, etc.”<sup>198</sup> Certain products will begin to decompose at a certain temperature. When they reach a certain temperature referred to as the self-accelerated decomposition temperature (“SADT”) of 50°C or less this creates a dangerous situation. The IMDG Code states that cargo having a SADT of “over 35°C must be transported at a ‘controlled temperature’ of 10° less than the SADT”<sup>199</sup> PPG, the shipper, provided to the carrier all of the information required by the IMDG Code and the federal regulations.

117 By contrast, the district court in the *DG Harmony* case found that the stowage of the cargo “complied fully with the requirements of the Code”.<sup>200</sup> The hold was certified for the carriage of this cargo. It

195 442 F 3d 74 (2d Cir, 2006) (“*Contship*”).

196 394 F Supp 2d 649 (SDNY, 2005) (“*DG Harmony*”). The author of this paper provided minimal consulting services to one of the attorneys actively involved in the case. No consulting fees have been or will be sought.

197 *Supra* n 154.

198 *Supra* n 196, at 658.

199 *Supra* n 195, at 78.

200 *Supra* n 196, at 670.

specifically permitted below-deck stowage, the only restriction being that the cargo not be exposed to temperatures in excess of 55°C for more than 24 hours. It found that PPG, the shipper, failed to give proper warnings and instructions despite having provided the information required by the IMDG Code and applicable regulations. The explosion occurred notwithstanding the fact that the Cal Hypo was exposed to normal and expected temperatures.

118 The court characterised the case as a “products liability” case. However, it first applied the rule of *Senator Linie* and held that if neither the shipper nor the carrier knew of “the full extent of the danger”,<sup>201</sup> the risk fell on the shipper particularly where the shipper is the manufacturer of the goods. It also found that the shipper was in breach of its strict liability to warn and further that it was negligent in failing to do so.

119 The other case, *Contship*, ultimately decided by the Court of Appeals, was based on the district court’s holding that:<sup>202</sup>

The fire ... was not caused by Contship stowing the cargo at an appropriate location for [a critical temperature] of 55 but inappropriate for 47°C, it was caused by *Contship’s stowage entirely disregarding the factor of heat*. Nothing done or undone by PPG contributed in any way or degree to the fire on the Contship France. PPG adequately complied with all its obligations ... [emphasis added]

The Court of Appeals framed the question as follows:<sup>203</sup>

Is strict liability a claim available to a carrier that knew the cargo was flammable but had reason to think that it was safe enough under the condition of stowage?

Although a shipper’s knowledge of the cargo’s dangerous nature and character are not necessary to impose liability on a shipper, the court held:<sup>204</sup>

[A] carrier cannot invoke strict liability if it knows that a cargo poses a danger and requires gingerly handling or stowage, and nevertheless exposes the cargo to the general condition that triggers the known danger, regardless of whether the carrier is aware of the precise characteristics of the cargo.

201 *Id.*, at 671.

202 *Supra* n 195, at 76–77.

203 *Id.*, at 76.

204 *Id.*, at 77.

120 In the *Senator Linie* case, the question was whether the carrier was “on notice that an exothermic reaction ... was possible”.<sup>205</sup> Under this approach, either a party knows that such a reaction is possible or it does not. Adopting this approach, the court in *Contship* specifically stated: “[T]he calibrated likelihood of an exothermic reaction under a variety of heat circumstances is not considered.”<sup>206</sup> The court acknowledged that a carrier that exposes cargo to heat with the knowledge of its flammability may not be barred from recovering from the shipper depending upon what each knew and their respective duties, but the carrier cannot prevail on a theory of strict liability.

121 The court then considered the carrier’s argument that the shipper violated its duty to warn. The court agreed that a shipper’s failure to adequately warn could result in a negligent failure to warn and impose liability under §1304(3) of COGSA. The court agreed with the Fourth Circuit, which had previously opined that:<sup>207</sup>

[U]nder general maritime law a shipper has a duty to warn the stevedore and the ship owner of the foreseeable hazards inherent in the cargo of which the stevedore and the ship’s master could not reasonably have been expected to be aware.

The court stated that a failure-to-warn claim must demonstrate that the carrier would have acted differently if it had been given the warning. The court concluded that a professional carrier, such as *Contship*, should reasonably be expected to use caution and not stow a cargo containing a flammable compound in the “hottest hold on a ship, at temperatures exceeding 47°C” *Contship* conceded that it was obliged to be aware of the provisions of the IMDG Code. The IMDG Code “advises carriers to stow potentially unstable materials with critical temperatures over 35°C in conditions at least ten degrees cooler than the critical temperature.”<sup>208</sup> Thus, *Contship*’s position that it fulfilled its duty of care simply by preventing the cargo from being exposed to temperatures of 55°C for more than 24 hours is undermined by this other warning in the IMDG Code. The court was influenced by the district court’s conclusion that the carrier believed that it had fulfilled its obligations simply by stowing the cargo under deck without regard to heat and without regard to the position of the stow.

205 *Supra* n 2, at 152.

206 *Supra* n 195, at 77.

207 *Id.*, at 78, citing *Ente Nazionale Per L’Energia Electtrica*, *supra* n 71, at 655.

208 *Id.*, at 78, citing *DG Harmony*, *supra* n 196, at 659.

122 The *DG Harmony* case is on appeal in the Court of Appeals for the Second Circuit, the same court that decided the *Contship* appeal, and it is difficult to predict the outcome. An easy way of *disposing* of the appeal would simply be to distinguish it factually from *Contship*. The district court found as a fact in *DG Harmony* that the container was not exposed to improper levels of heat while the district court in *Contship* found that the container in that case was exposed to improper levels of heat. In the alternative, the appellate court may conclude that the case is more like *Senator Linie* than *Contship*. One could argue that if the IMDG safe stowage instructions were incorrect and neither shipper nor carrier knew of this fact, then the shipper bears the liability. If there are risks of which the carrier is unaware and could not be expected to be aware, then in COGSA cases under the approach of the Second Circuit in *Senator Linie*, the shipper is liable regardless of its knowledge. The same result would be reached in non-COGSA cases in courts applying the *Pierce* rule.

123 On the other hand, in *Senator Linie*, both parties believed that the product was not dangerous, a view supported by the non-inclusion of the substance in the IMDG Code and the federal regulations, whereas in *DG Harmony*, everyone knew that the Cal Hypo was dangerous because it was flammable. Earlier in this paper it was suggested that “dangerousness” is a relative term. Goods may be dangerous under all circumstances or only under certain circumstances. When a carrier accepts goods for transport knowing that they are dangerous because they are flammable at least under certain circumstances, has the carrier assumed the risk that the goods may be flammable under other circumstances? The Court of Appeals in *Contship* suggested that the carrier has assumed that risk when it stated:<sup>209</sup>

[A] carrier cannot invoke strict liability if it knows that a cargo poses a danger and requires gingerly handling or stowage, and nevertheless exposes the cargo to the general condition that triggers the known danger, *regardless of whether the carrier is aware of the precise characteristics of the cargo.* [emphasis added]

Another court has voiced a similar view:<sup>210</sup>

The nature of the cargo was certainly disclosed ... Bleaching powder was notoriously dangerous and perishable cargo ... In such circumstances it is unreasonable to suppose that “full disclosure” meant a detailed

209 *Id.*, at 77.

210 *Supra* n 37, at 726.

description of all the attributes of the chemical and an account of everything that might develop in it.

124 A vessel that knowingly accepts “dangerous” goods must be capable of carrying its cargo safely. In the *DG Harmony* case, there was evidence that the carrier had been informed by its P & I Club that there was some concern about the heat levels for safely carrying Cal Hypo and that the product might be more unstable than previously thought. When it accepted goods “known to be dangerous”, did it not accept the risk that the danger might manifest itself in a manner not previously known? The IMDG Code and the US regulations provide both shippers and carriers with a great deal of information, and those parties are charged with that knowledge. When a professional carrier stows cargo knowing that it is listed in the IMDG Code and the US regulations and that special care must be taken, how much more information must the shipper supply?

125 Obviously, if a shipper knows or in the exercise of due care ought to know of risks of which the carrier cannot be expected to know, perhaps because no warning is given in the IMDG Code or regulations, it would be negligent not to disclose that information. This is particularly the case where the shipper is the manufacturer of the goods and is likely, as a prudent manufacturer, to possess information not generally available to others. But this would impose liability for negligence not strict liability. Strict liability under the *Pierce* view and under COGSA is not based on the shipment of dangerous goods but on the failure to warn that the goods are dangerous. Where disclosure is made and the danger is manifested, a shipper is only liable for negligence. The question then becomes one of “adequate warning”. The IMDG Code and regulations such as those in the US provide some warning. Where a shipper of dangerous goods in fulfilment of its legal duties has properly identified the goods as dangerous, properly packaged, labelled, *etc*, does the carrier accept the general types of risk presented by such goods? One might argue that this situation is not controlled by *Senator Linie* because in that case the carrier did not know that the goods were dangerous in any respect. In *DG Harmony*, the carrier knowingly accepted dangerous goods because the carrier was aware that the cargo of Cal Hypo was flammable.

126 On the other hand, it is submitted that knowledge by a carrier that a certain cargo presents risks *A*, *B* and *C* is not knowledge that the goods also present risk *D*. A carrier presented with dangerous cargo must decide if it wants to expose its vessel, crew and other cargo to the risks presented by the dangerous cargo. It must also decide whether its vessel can safely carry that cargo. Ultimately, it must decide what steps to take to minimise the known risks. How can a carrier make these decisions with

respect to unknown risk *D*? As has been said, the term “dangerous” is variable. It would seem that ultimately the resolution of this issue presents the same issue that confronted the courts in *Pierce* and *Quillan*.

127 Finally, a comment is prompted by the district court’s opinion in the *DG Harmony* case and relates to the interplay between the rules relating to carriage of dangerous goods and the rules of products liability. An examination of both rules reveals that those relating to carriage of dangerous goods do not need supplementation by the rules of products liability. Products liability may be imposed under theories of strict liability and negligence. The court correctly equates the negligent breach of a seller’s or manufacturer’s duty to warn that a product is unreasonably dangerous under products liability with 46 USC app §1304(3), the provision that imposes liability on a shipper for negligence. Negligence is negligence, and if a shipper negligently fails to warn a carrier that its cargo is dangerous, then, under carriage law, the shipper would be liable for the proximate consequences of its negligence. The same may be said with regard to strict liability. If, under COGSA, the *Senator Linie* rule is applied to hold a shipper strictly liable for failure to warn irrespective of negligence or, if in non-COGSA cases, the rule in *Pierce* yields the same result, then the introduction of products liability law proves to be an unnecessary complication. In courts that might not apply strict liability in either COGSA or non-COGSA cases and follow the *Quillan* fault-based approach, then theoretically strict products liability based on a failure to warn would seem to add the dimension of liability without fault. This, however, is illusory for, as one commentator has observed, even where courts purport to apply strict liability in product liability cases based on a failure to warn, they utilise a negligence analysis.<sup>211</sup>

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211 David G Owen, *Products Liability Law* (Thomson - West, 2005) at pp 571–572, which later states (at p 675):

Nevertheless, emerging from the cases and statutes is a common theme: reluctance to impose liability on manufacturers for dangers that were unknowable, or unpreventable, at the time their products were sold—reluctance to hold producers responsible for risks they cannot control.