Part 2: Meaning of dangerous goods

A. In general

The parties to a contract for the carriage of goods by sea, whether this is embodied in a bill of lading or one of the standard charterparty forms, customarily negotiate its terms against a background of both commercial and legal considerations. The parties’ respective liability for risks to which the vessel and its cargo might be exposed during the course of the contracted voyage will be of paramount importance. Should they arise, the potential risks might expose the parties, through their insurance, to expensive damage claims. Therefore, the description of the cargo for shipment is one of the crucially important components of the negotiations between the parties to any shipping contract.  

Although there are no numerous clausus of cargoes which may be dangerous, hazardous or harmful, “dangerous good” is a useful notion for practical purposes. Whether the goods indeed cause damage is known with certainty only after the damage has occurred, but the trade needs rules about how to deal with goods whose dangerous characteristics can be anticipated beforehand. Obvious examples are inflammable goods, explosives, petroleum products and chemicals. However, some cargo that appears to be safe can also become dangerous. For example, excess moisture in wool can build up great heat and, although rarely, make it li-

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1 Girvin, “Shipper’s Liability for the Carriage of Dangerous Goods by Sea” [1996] LMCLQ 487, 488.
2 Rose, “Cargo Risks: ‘Dangerous’ Goods” [1996] 55 Cam. L.J. 601.
3 Tiberg, “Legal Survey”, in Grönfors (ed.), Damage from Goods (1978) 9, 11.
Part 2: Meaning of dangerous goods

able to catch fire. Wheat, rice and other grain cargoes can likewise become dangerous through high moisture content. It may seem that the common usage of “dangerous” to describe such goods does not mean that the risks presented by them need be extreme or that there is one single category of dangerous goods attracting a uniform applicable set of consequences. However, to allocate liability, determining the meaning of “dangerous”, or at least of what is not “dangerous”, is of paramount importance, because different standards of liability are applied. This chapter tries to find out what dangerous cargo means.

B. Type of good

I. Charterparties

In many respects, voyage and time charterparties are quite different, and one of the differences between voyage and time charter is that in voyage charters, the cargo is stipulated whereas in time charters it is more common to include details of cargoes which cannot be carried. If the charterparty provides for a specific type of cargo, the obligation of the charterers is to tender for loading goods of such a type and in such a condition as would be considered reasonable in the light of the provisions of the contract and the practice at the loading port. If the charterers have an option as to the cargoes to be shipped, the cargo offered must be a reasonable cargo of the description specified. It must be such a cargo as is reasonable to ask the master to load and carry and in such a state as is reasonably within the contract. But charterers are under no obligation to select a cargo or combination of cargoes suitable for the ship. The state of the particular cargo is of paramount importance as regards the question of whether it is reasonable or not. The question in the light of the terms of the contract is whether owners who have expressly agreed to carry cargo of that description may reasonably be said to have agreed to carry particular cargo tendered to them.

If the cargo is described not specifically but entirely in general terms, the same basic approach still holds good. The charterer must tender a cargo of kind and in a

4 Bulk Grain Cargoes, “Hot Stuff from the US, but not Enough from Brazil and Argentina” 1995 (139) Gard News 15.
5 Rose, “Cargo Risks: ‘Dangerous’ Goods” [1996] 55 Cam. L.J. 601, 602.
6 Todd, Contract for the Carriage of Goods by Sea (1988), 42.
7 Cooke/Young/Taylor, Voyage Charters (2001), 146.
8 Stanton v. Richardson (1872) L. R 7.C.P 421, 430, aff’d (1874) L.R. 9 C.P. 390 (Ex. Ch.), aff’d (1875).
9 In Atlantic Duchess [1957] 2 Lloyd’s Rep. 55, it was held that the charterers were entitled to ship butanised crude oil under the charterparty providing for carriage of crude oil, since no distinction was drawn in the trade between crude oil and butanized crude oil for the purpose of carriage by sea, the two products being regarded as commercially identical.
B. Type of good

The relevant circumstances would include any terms of the charter describing the ship, any characteristics of the ship known to the charterer before the fixture was concluded and the kinds of cargoes customarily shipped at the agreed loading port.\textsuperscript{10}

German law also lies down that if the goods are described in the contract not only by type but also by specific description, the shipper must load this specific type of cargo.\textsuperscript{11} If the goods are not described specifically in the contract, the carrier is obliged to accept other goods proposed by the shipper for the same destination if loading of other goods neither aggravates his situation nor endangers the ship and the rest of the cargo.\textsuperscript{12}

II. Bills of lading

In bills of lading, general expressions such as “merchandise” or “produce” are used to describe intended cargo. According to the Hague/Hague-Visby Rules, “goods include goods, wares, merchandise, and articles of every kind”.\textsuperscript{13} However, two types of cargo excluded from the application of the rules are live animals and cargo which by contract of carriage is stated as being carried on deck and is so carried.\textsuperscript{14} Furthermore, parties are entitled to contract on their own terms in relation to the carriage of “particular” goods, provided that these terms are incorporated into a non-negotiable receipt and no bill of lading is issued.\textsuperscript{15}

Some bills of lading forms contain a clause defining the goods.\textsuperscript{16} It is, however, not always necessary to have a clause defining the goods covered by the bill, as the face of the bill will contain the detailed description of what has been shipped.\textsuperscript{17}

\textsuperscript{10} If the charter describes the dimensions of the ship’s hatches, the capacity of her pumps or gear or other features, the charterers must tender a cargo which is suitable for carriage in a ship so described. In the absence of circumstances which point to a different conclusion, the charterer cannot expect the ship to have any special characteristics or equipment required for a particular type of cargo.

\textsuperscript{11} HGB § 562(2).

\textsuperscript{12} HGB § 562(1).

\textsuperscript{13} Art. I(c).

\textsuperscript{14} Art. I(c). In both cases, the parties are free to negotiate their own terms of carriage for such cargoes. The exclusion is justified by the peculiar risk attached to the carriage of both categories of cargo, arising in the first cases from the nature and inherent properties of the animals and in the second from the exposed position in which the cargo is stowed.

\textsuperscript{15} Art. VI. Such goods are envisaged as “one-off” cargoes not in the usual course of trade, where either the particular character or condition of the goods or the circumstances in which they are to be carried justifies special contract. Obvious examples are experimental cargoes or contracts for the carriage of nuclear waste.

\textsuperscript{16} P&O Nedloyd Bill Cl.1: “Goods means the whole or any part of the cargo received from the Shipper and includes the packing and any equipment or Container not supplied by or on behalf of the Carrier”.

\textsuperscript{17} Gaskell/Asariotis/Baatz, Bills of Lading: Law and Contracts (2000), 206. “K” Line Bill of Lading Cl.1(e): “Goods mean the cargo described on the face of the this Bill of
C. Restrictions on the goods

I. Lawful merchandise or goods

In the absence of any specific description of the cargo, charterparties or bills of lading generally provide a blanket provision as to which cargoes are permitted. Often it is worded as lawful merchandise or lawful goods.\(^\text{18}\) To be “lawful”, the cargo must be such that it can be loaded, carried and discharged without breach of the local law in force at the loading and discharging ports as well as the flag state’s law.\(^\text{19}\)

The German Commercial Code, HGB § 564 (2) likewise provides that cargo to be loaded must not violate any law of the port of loading and unloading.

II. Lawful dangerous goods

The IMDG, IBC, and IGC codes are part of the SOLAS 1974 Convention and mandatory under the Convention.\(^\text{20}\) As pointed out in Part 1, these codes were adopted into domestic laws even before the codes were made mandatory. Therefore, goods for the purposes of these codes are considered to be lawful unless transport of a specific good is forbidden.\(^\text{21}\) Such goods are lawful dangerous goods as long as they are loaded, carried and discharged without breach of local law.

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\(^{18}\) Gentime Cl.2; NYPE 93 Cl.4; Bermuda Container Line, Cl.3 (a).

\(^{19}\) In Leolga v. Glynn [1953] 2 Q.B. 374, the charterparty stipulated that “in lawful trades for the conveyance of lawful merchandise”. The ship was loaded with ammunition and other explosives and ordered to discharge these at Adabiya, in Egypt, although the charterers knew this was prohibited by the Egyptian authorities. She broke down and her repairs took 26 days, since she was black-listed by Egyptian authorities. It was held that as the goods loaded for Adabiya could not be discharged at the nominated port without breach of local law, they were not lawful merchandise and the charterers were liable to pay damages for the delay caused.

\(^{20}\) See supra Part 1.

\(^{21}\) The IMDG Code Art. 1.1.4.1 stipulates that unless provided otherwise by this Code the following are forbidden from transport: Any substance or article which, as presented for transport, is liable to explode, dangerously react, produce a flame or dangerous evolution of heat or dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions normally encountered in transport. In Chapter 3.3, special provision lists 900 certain substances which may not be transported.
III. Dangerous good clauses

1. Charterparty forms

As it is in the nature of voyage charter that the cargo for shipment is expressly agreed, these charterparties generally do not contain cargo-restriction clauses. This is contrasted with most time charterparty forms, where the charterer has a greater discretion as to the cargo to be shipped and where it is more usual to find an express dangerous goods clause. Clauses in time charters either prohibit the shipment of dangerous cargo or permit shipment under certain circumstances. Generally, restrictions on dangerous cargoes are described together with the lawful merchandise.

For instance, the 1993 revision of the NYPE form contains a special dangerous cargo clause. The first part permits the carriage of dangerous cargo when in accordance with the requirements of specified national authorities and the second part limits the amount of IMO-classified cargo that may be carried. Clause 4 provides that:

(a) In carrying lawful merchandise excluding any goods of a dangerous goods, injuries, flammable or corrosive nature unless carried in accordance with the requirements or recommendations of the competent authorities of the country of the Vessel’s registry and of ports of shipment and discharge and of any intermediate countries or ports through whose waters the Vessel must pass. Without prejudice to the generality of the foregoing, in addition the following are specifically excluded: livestock of any description, arms, ammunition, explosives, nuclear and radioactive materials …

(b) If IMO-classified cargo is agreed to be carried, the amount of such cargo shall be limited to … tons and the Charterers shall provide the Master with any evidence he may reasonably require to show that the cargo is packaged, labelled, loaded and stowed in accordance with IMO regulations, failing which the Master is entitled to refuse such cargo or, if already loaded, to unload it at the Charteres’ risk and expense.

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22 Balttime 1939 Cl.2 provides “…No live stock nor injuries, inflammable or dangerous goods (such as acids, explosives, calcium carbide, ferro silicon, naphta, motor spirit, tar, or any of their products) shall be shipped.”; Shelltime 4, Cl.28 titled “injurious cargoes” provides “no acids, explosives, or cargoes injuries to the vessel shall be shipped and without prejudice to the foregoing any damage to the vessel caused by the shipment of any such cargo, and the time taken to repair such damage, shall be for Charters’ account…”.  
23 Abdul Hamid, Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure (Diss. Southampton 1996), 90.  
24 The NYPE 1946 charterparty contains no provision which forbids the shipment of dangerous cargo and only provides that “… to be employed in carrying lawful merchandise, including petroleum and its products in proper containers, excluding …”. Probably this was a deficiency and rectified.
There are similar but less detailed provisions in some of the more specialized time charterparty forms. But none of the forms purports to be explicit in defining precisely what is meant by “dangerous”. This is advantageous for carriers and the converse for shippers, because it clearly brings within the ambit of the shipper’s obligations the duty to account for a potentially wider category of cargoes.25

2. Bill of lading forms

Bill of lading standard forms commonly contain dangerous goods clauses, either expressly or by means of a paramount clause which purports to incorporate the Hague/Hague-Visby Rules. One of the detailed examples is Ellerman East Africa/Mauritius Service Bill, which provides in Cl. 19, entitled “dangerous goods”, that:

No goods which are or may become dangerous, inflammable or damaging (including radio-active materials), or which are or may become liable to damage any property whatsoever, shall be rendered to the Carrier for Carriage without his express consent in writing, and without the Container or other covering in which the Goods are to be carried as well as the Goods themselves being distinctly marked on the outside so as to indicate the nature and character of any such Goods and so as to comply with any applicable laws, regulations or requirements. If any such goods are delivered to the Carrier without such written consent and/or marking, or if in the opinion of the Carrier the Goods are or are liable to become of a dangerous, inflammable or damaging nature they may at any time be destroyed, disposed of, abandoned, or rendered harmless without compensation to the Merchant and without prejudice to the Carrier’s right to Freight.

1. The Merchant undertakes that such Goods are packed in a manner adequate to withstand the risks of Carriage having regard to their nature and in compliance with all laws or regulations which may be applicable during the Carriage. …

2. Whether or not the Merchant was aware of the nature of the Goods, the Merchant shall indemnify the Carrier against all claims, losses, damages or expenses arising in consequence of the Carriage of Such Goods…. Other bill of lading forms contain identical or similar clauses.26 Those forms which do not have specific clauses concerning the carriage of dangerous goods are frequently drafted in a way which is similar to Art. IV.6 of the Hague/Hague-Visby Rules. As in charterparties, however, none of the forms purports to be explicit in defining precisely what is meant by “dangerous”.

25 Girvin, “Shipper’s Liability for the Carriage of Dangerous Goods by Sea” [1996] LMCLQ 487, 490.

26 Virtually identical provisions are contained in the ANL Tranztas Bill, cl. 18, P & O Containers Bill cl. 19; See also Mitsui OSK Combined Transport Bill 1992 Cl.22 and 1993 Cl.19 respectively.
D. Relevance of the IMDG Code in carriage contracts

Dangerous goods regulations are, in principal, public law regulations that apply to relationships between the state and to persons who must comply with these regulations. In other words, the focal point of the safety framework is to provide safe ships and safe shipping operations for the benefit of those who may be affected by such operations. Insofar as it operates on the ship, the framework is directed at the owner, but insofar as it imposes civil or criminal liability measured in cash, it may be directed at the owner or any other person connected with the carriage or the goods. However, civil liability in respect of damage or loss as between owner, charterer or shipper will depend on the relevant contract. Then the question will arise of the relevance, if any, to that liability of the obligations laid on the parties in relation to the cargo at issue by legislation focused on “public” responsibilities.27

I. Common law

In common law liability may arise from breach of statutory duty. In such a case there will be civil liability if the obligation or prohibition was imposed for the benefit or protection of a particular class of individuals.28 The breach of statutory duty must be of a kind which the statute intends to prevent.29 The conventional rule is that unexcused violation of a health or safety regulation is negligent per se – that is negligent as a matter of law. In the absence of a legally cognizable excuse that for practical purposes renders a statutory or regulatory standard inapplicable, reasonable prudence requires compliance with these standards. As the classic case on the issue puts it unexcused violation “is negligence” itself. This is the rule that pertains in the ordinary case, constituting the vast majority of civil actions in which a regulatory violation plays a part.30

Accordingly a shipper who is in breach of statutory provision in relation to the shipment of dangerous goods may at the same time be civilly liable for breach of this statutory duty. Dangerous goods regulations are specific and detailed so as to raise a prima facie case for civil liability.31 A civil action against shipper may be

27 Jackson, “Dangerous Cargo- A Legal Overview” in Maritime Movement of Dangerous Cargoes- Public Regulations Private Liability, Papers of One Day Seminar (1981), A6.
28 Lonrho Ltd. v. Shell Petroleum Ltd. (No:2) [1982] A.C. 173; Hover & Co. v. Denver & R.G.W.R. Co. 17 F.(2d) 881; Abdul Hamid, Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure (Diss. Southampton 1996), 196.
29 Ibid.
30 Abraham, “The Relation between Civil Liability and Environment Regulation: An Analytical Overview” [2002] 41 Wash. L.J 379, 394.
31 Abdul Hamid, Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure (Diss. Southampton 1996), 198.
brought by the shipowners and crew, such persons being the class of individuals the regulations were designed to protect.\textsuperscript{32}

II. German law

In German law, on the other hand, Regulations on the Transport of Dangerous Goods by Sea (GGVSee) incorporate the IMDG Code and other codes – \textit{Schutzgesetz} ("Protective law") – in the sense of § 823(2) of the German Civil Code (BGB).\textsuperscript{33} Protective law is a legal norm which guards the certain legally protected rights ("Rechtsgüter") of individuals. Such goods contain an order or forbiddance and according to their personal and objective scope of protection aims at protection of individuals.\textsuperscript{34} BGB § 823 [duty to compensate for damage] provides that:

1. A person who wilfully, or negligently, unlawfully injures the life, body, health, freedom, property or other right of another is bound to compensate him or any damage arising therefrom.
2. The same obligation is placed upon a person who infringes a statute intended for the protection of others. If, according to the provisions of the statute, an infringement of this is possible even without fault, the duty to make compensation arises only in the event of fault.

The dangerous goods regulations based on GGBefG principally serve to the protection of the public safety and order, particularly of the general public, of important public property, of life and health of human as well as animals and other things from the dangerous goods.\textsuperscript{35} All standards of conduct in these regulations, show principally individuals protective character and thus protective law in the sense of BGB § 823.2.\textsuperscript{36}

III. Standard of reasonableness

In an action for negligence a shipper of goods which are liable to cause loss or damage must have acted in such a way that is below the standard expected of a reasonable and prudent shipper. If anyone practices a profession or is engaged in a transaction in which he holds himself out as having professional skill, the law expects him to show the amount of competence and prudence associated with that profession or trade. If he is not behaved reasonably, he will be liable for consequences.

Although the IMDG Code and other codes do not directly relate to the distribution of risk, they indirectly affect the relation between carrier and shipper or third parties. These codes are manifestly based on the accumulated experience of those

\textsuperscript{32} Ibid.
\textsuperscript{33} Bürgerlichesgesetzbuch.
\textsuperscript{34} Bremer, \textit{Die Haftung beim Gefahrguttransport} (1992), 65.
\textsuperscript{35} GGBefG §§ 2,3.1.
\textsuperscript{36} Bremer, \textit{Die Haftung beim Gefahrguttransport} (1992), 77.
involved in the relevant trades and are kept up-to-date. The purpose of the codes is safety, as is the purpose of the specific rule on the dangerous cargoes in the Hague/Hague-Visby Rules and carriage contracts. They require certain conditions for stowing, temperature control, packing, if necessary, etc. These requirements are minimum standards applied in practice. Accordingly, a shipper and a carrier are imputed with the prevailing standards of the shipping industry. Non-compliance with the dangerous goods standards and regulations raises an inference of negligence.37

IV. Incorporation of the IMDG Code into contracts

It is clear that if there is to be a category of dangerous goods that attract special rules, contracts cannot solve the problem of definition by listing. Conventions and statutes may do so and therefore allow contracts to define by reference, provided that the category is restricted to substances requiring special facilities.38 The IMDG Code, IBC, IGC and BC are based on this principle. Parties to a carriage contract may incorporate convention provisions or codes into the contract, even if the purpose of listing of the substances does not relate directly to the distribution of risk between the parties. By incorporating the regulations into the contracts, the parties undertake to comply with certain requirements as to the shipment and handling of the goods.39 In such a case, failure to comply with the IMDG Code and other codes will also be a breach of contract. Although it is often argued that the purpose of the IMDG Code is the safety of the ship and crew only, the current edition of the IMDG Code expressly states in its preamble that:

Transport of dangerous goods by sea is regulated in order to reasonably prevent injury to persons or damage to ships or their cargoes.

37 Tiberg, “Legal Survey”, in Grönfors (ed.), Damage from Goods (1978), 9, 17.
38 Jackson, “Dangerous Cargo- A Legal Overview” in Maritime Movement of Dangerous Cargoes- Public Regulations Private Liability, Papers of One Day Seminar (1981), A4.
39 In Islamic Investment Co.1 S.A . v. Transorient Shipping Ltd. (The “Nour”) [1999] 1 Lloyd’s Rep. 1, a cargo of bagged fishmeal became hot and caused damage to cargo and delay in discharge. Cl. 27 of the charterparty provided that “… Fishmeal must be shipped under deck and be loaded/stowed/discharged according to IMO and local regulations”. It was argued that transport by sea of dangerous cargo is regulated in order reasonably to prevent injury to persons or damage to the ship and there is no reference to the risks of damage to other goods or to the goods themselves. At the time of the proceedings of the case, the 1992 Edition of the IMDG Code’s general introduction stated that transport by sea of dangerous goods is regulated “in order reasonably to prevent injury to persons or damage to the ship.” Therefore, it was contended that there was no reference here to the risks of damage to other goods or to the goods themselves. The Court held that the effect of cl. 27 is to make compliance with the regulations a contractual undertaking, not necessarily limited to the reasons why the regulations were adopted by the IMO.
E. Meaning of dangerous goods

I. Terminology: dangerous, hazardous, noxious or harmful

Besides the term “dangerous”, “hazardous”, “harmful” and “noxious” are used to describe such cargoes. Although harmful and noxious are used in general with regard to environmental effects, the use of dangerous or hazardous and the difference between them, if any, are not clear. In the United States, the equivalent of the IMDG Code is entitled “Hazardous Materials Regulations”. In particular, the two terms “hazardous” and “dangerous” have been used in a similar and comparable way in international agreements and national legislations. A clear differentiation is related to the different objectives and definition in the different legislative context.

II. What is meant by “dangerous goods”?

The Shorter Oxford Dictionary defines “dangerous” as “fraught with or causing danger; involving risk; perilous, hazardous; unsafe”. Despite its general use and long lists included in the codes, the term “dangerous goods” is imprecise and misleading in practice. The fact that any cargo may cause damage makes the meaning of dangerous complicated. What is meant by dangerous?

An Argentine court once held a cargo of fresh fruit to be dangerous within the meaning of the Hague Rules, a decision which stresses that it is as much the nature of a situation as the nature of a substance which creates “danger”. Therefore, it

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40 For instance, “Harmful substance means any substance which, if introduced to the sea, is liable to create hazards to human health, to harm living resources and marine life, to damage to amenities or to interfere with other legitimate uses of the sea, and includes any substance subject to control by the present Convention.” MARPOL 73/78 Art. 2 (2); “For the purpose of this Annex, “harmful substances are those substances which are identified as marine pollutants in the International Dangerous Goods Code (IMDG Code).” MARPOL 73/78 Annex III.

41 In Australia, hazardous substances are classified based on health effects, while dangerous goods are classified according to their immediate physical or chemical effects, such as fire, explosion, corrosion and poisoning, affecting property, the environment or people. However, many hazardous substances are also classified as dangerous goods <www.ohsrep.org.au/index.cfm?section=10&Category=44&viewmode=content&contentid=171> (visited 10.11.2006).

42 See supra Part 1.

43 “Identification of Priority Hazardous Substances”, European Commission Working Document (ENV/191000/01 of 16 January 2001), 14; “Tracking Intermodal Shipments of Hazardous Materials Using Intelligent Transportation Systems in a New Security Age”, Global Trade, Transportation and Logistics GTTL 502 Term Project, Spring 2002, <http://depts.washington.edu/gttl/StudentPapersAbstracts/2002/GTTL-hazmat%20final.pdf> 5. (visited 31.01.2007).

44 [1979] ULR 202.
may be argued that the “situation” is the focal point and that it is a mistake to start with the nature of a substance.\(^{45}\) But the label “dangerous” implies perhaps the idea that the substance itself has an inherent dangerous characteristic.\(^{46}\)

Although the label “dangerous” implies that the substance has to be intrinsically dangerous, the substance of the hazard may simply be the likelihood of economic loss through delay or property loss through damage to the ship or other goods. The idea of “dangerous” may impart the idea of personal injury or, at the most, serious damage to property, but in English law the category has been extended to include “unlawful merchandise”, the only defect in which was the lack of a licence to land.\(^{47}\) However, concern at “dangerous goods” persists, first because of the potential scale of damage which may be caused by them and secondly, precisely because of the “danger” factor – which of itself means that the responsibility on those creating and continuing it must be assessed with that in mind.

It has been said that “less dangerous goods are more dangerous than very dangerous goods”, simply because in the case of very dangerous goods, everyone appreciates the danger and special precautions are taken.\(^{48}\) Under special circumstances, almost any product can be dangerous.

The adoption of a category of cargo which attracts special rules necessarily brings with it a problem of definition. Conventions, statutes and judge-made law all use the phrases. Contractual documents base their clauses on them. As for “dangerous goods”, in some cases the generality is qualified by the listing of particular substances, which raises the subordinate question of whether the general is to be governed by the particular.\(^{49}\)

1. In the contracts

As mentioned above, charterparties and bills of lading contain dangerous cargo clauses, but none of them purports to be explicit in defining precisely what is meant by dangerous. Indeed this is not surprising, because it is clear that if there is a category of dangerous goods which is to attract special rules, contracts cannot solve the problem by definition. Statutes and regulations may do so, provided that the category is restricted to substances requiring the special facilities. Parties to the carriage contract may therefore incorporate regulation provisions into the contract even if the purpose of listing the substance does not relate directly to the distribution of risk between the parties.\(^{50}\) The interpretation of the term “danger-

\(^{45}\) Jackson, “Dangerous Cargo- A Legal Overview” in *Maritime Movement of Dangerous Cargoes- Public Regulations Private Liability* (1981), A2.

\(^{46}\) Ibid.

\(^{47}\) *Michell Cotts v. Steel* [1916] 2 K.B. 610.

\(^{48}\) Grönfors, “Summarizing a Multi-National Problem”, in Grönfors (ed) *Damage from Goods* (1978), 106.

\(^{49}\) Jackson, “Dangerous Cargo- A Legal Overview” in *Maritime Movement of Dangerous Cargoes- Public Regulations Private Liability*, Papers of One Day Seminar (1981), A4.

\(^{50}\) Ibid.
ous” is significant, because both liability in general and any rights given in regard to the goods, such as disposal and indemnity, will depend on this interpretation.

2. In the safety, marine pollution and third-party liability conventions

The concern over the carriage of dangerous substances is shown by the growing number of conventions that deal with safety, carriage and third-party liability. Of these, the SOLAS 1974 Convention does not define dangerous goods. It only states that dangerous goods mean the substances, materials and articles covered by the IMDG Code.\(^{51}\)

MARPOL 73/78 employs the phrase “harmful” in order to define marine pollutants. Accordingly, harmful substances are any substances which, if introduced into the sea, are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea, and that includes any substances subject to control by the present Convention.\(^{52}\) Furthermore, for the purpose of Annex III, entitled “Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form”, harmful substances are those substances which are identified as marine pollutants in the IMDG Code.\(^{53}\)

Under the HNS Convention, the definition of hazardous and noxious substances (HNS) is largely based on lists of individual substances that have been identified in the codes designed to ensure maritime safety and prevention of pollution.\(^{54}\)

\(^{51}\) SOLAS Chap. VII/A.1.2
\(^{52}\) MARPOL Art. (2).2.
\(^{53}\) MARPOL Annex III Reg. 1(1)(1.1)
\(^{54}\) HNS Convention Article 5 provides for:
    a) any substances, materials and articles carried on board a ship as cargo, referred to in (i) to (vii) below:
       (i) in bulk listed in Appendix I of Annex I to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by Protocol of 1978 relating thereto, as amended;
       (ii) noxious liquid substances carried in bulk referred to in Appendix II of Annex II to the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol 1978 relating thereto, as amended, and those substances and mixtures provisionally categorized as falling in pollution category A, B, C or D in accordance with Regulation 3(4) of the said Annex II
       (iii) dangerous liquid substances carried in bulk listed in Chapter 17 of the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk, 1983, as amended, and the dangerous products for which the preliminary suitable conditions for the carriage have been prescribed by the Administration and port administrations involved in accordance with Paragraph 1.1.3 of the Code.
       (iv) dangerous, hazardous and harmful substances, materials and articles in packaged form covered by the International Maritime Dangerous Goods Code, as amended
       (v) liquefied gases as listed in Chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, 1983, as amended, and the products for which preliminary suitable conditions for the carriage have been
HNS are very varied and include both bulk cargoes and packaged goods. Bulk cargoes can be solids or liquids, including oils or liquefied gases. The number of substances included is very large. In practice, however, the numbers of HNS that are shipped in significant quantities are relatively small.55

Bulk solids are included if they are covered by Appendix B of the BC Code, i.e. they possess chemical hazards, and if they are also subject to the provision of the IMDG Code when carried in packaged form. This means that many of the major bulk solids are excluded, since they either do not possess chemical hazards56 or they are classified as materials hazardous only in bulk (MHB).57 Bulk solids that are covered include some fertilizers, sodium and potassium nitrates, sulphur and some types of fishmeal. Bulk liquids are included if they present safety, pollution or explosion hazards and include organic chemicals,58 inorganic chemicals,59 and vegetable and animal oils and fats.60 Both persistent and non-persistent oils of petroleum origin are also included.61 Bulk liquids that are not covered include potable alcohol and molasses. All liquefied gases which are transported in bulk are included.62

3. In the carriage conventions

The Hague/Hague-Visby Rules do not solve any problem of definition, because they do not provide any definition of “dangerous” but link general rules to the category, stating, in Art. VI.6, that the shipper is liable for all damage and expenses arising out of a shipment of goods “inflamable, explosive, or dangerous” unless the carrier has consented to carry them. Art. 13 of the Hamburg Rules pro-
vides only that the shipper must mark or label “dangerous goods” as dangerous and must inform the carrier of their dangerous character. Therefore, definition is crucial both to the application of provisions and consent. Any substance listed in the IMDG Code and other codes as dangerous qualifies, but courts tend to apply rules to dangerous situations as well as to dangerous goods.

4. In the statutes

Apart from statutory applications of conventions, statutory obligations may be imposed on shippers and carriers with regard to dangerous goods. The provisions must be viewed in the context of their purpose. What is dangerous in one context may not be so in another. National statutes implementing international conventions and codes\(^6\) give only a general definition of dangerous goods. The reason is that defining the concept of “dangerous goods” exactly may not be appropriate, as technical development in this field changes rather quickly.\(^8\)

5. In the relevant codes

As we have seen so far, neither the SOLAS Convention nor the Hague/Hague-Visby Rules nor the Hamburg Rules define dangerous goods. They either refer to relevant codes or give only some examples of dangerous cargo, such as “inflammable, explosive and any other dangerous goods”. This wording presents the classic issue of whether the general catch-all phrase is ultimately governed by the goods specifically listed. If those can be said to form a group of common definition, it may be argued that the generality might be limited by the common denomination. Is that the case with the IMDG Code listing the goods which are dangerous within the Code?

Even assuming that this was so with the IMDG Code, it does not solve the problem, because the IMDG Code regulates only the shipment of packaged dangerous goods. However, in practice not only packaged but also bulk cargoes cause damage.

a) The IMDG Code

The IMDG Code classifies dangerous goods in different classes, subdivides a number of these classes and defines and describes characteristics and properties of goods which would fall within each class or division. Each class has its definition. These definitions have been devised so as to provide a common pattern which it should prove possible to follow in various national and international regulations. The objective of recommended definitions is to indicate which goods are dangerous and in which class, according to their specific characteristics, they should be

\(^6\) See supra Part 1.

\(^8\) Segolson, *Damage from Goods in Sea Carriage, the Sender’s Liability against the Carrier and the Other Owners of the Cargo on Board* (Diss. Stockholm 2001), 14 fn. 45.
E. Meaning of dangerous goods

included. The definitions, together with the list of dangerous goods, should provide guidance to those who have to use these regulations. The IMDG Code consists of 9 classes according to type of risk. A number of dangerous substances in the various classes have also been identified as substances harmful to the marine environment in accordance with Annex III of the MARPOL 73/78 Convention.

aa) Dangerous goods specifically listed in the IMDG Code

Dangerous goods are assigned UN numbers and Proper Shipping Names according to their hazard classification and their composition. Dangerous goods that are commonly transported are listed in the Dangerous Goods List in Chap. 3.2 of the IMDG Code. Where an article or substance is specifically listed by name, it shall be identified in transport by the proper Shipping Name in the Dangerous Goods List. This list also contains relevant information for each entry.65 Entries in the Dangerous Goods List are of four types: single entries for well-defined substances or articles, generic articles for well-defined groups of substances or articles, specific “Not Otherwise Specified” N.O.S. entries covering a group of substances or articles of a particular chemical or technical nature; and general N.O.S. entries covering a group of substances or articles meeting the criteria of one or more classes.

bb) Dangerous goods not specifically listed in the IMDG Code

Substances or articles which are not specifically listed by name in the Dangerous Goods List shall be classified under a “generic” or “not otherwise specified” (N.O.S.) Proper Shipping Name. The substance or article shall be classified according to the class definitions and test criteria, and the article or substance is classified under the generic or N.O.S. Proper Shipping Name in the Dangerous Goods List which most appropriately describes the article or substance.66

cc) Mixtures or solutions

A mixture or solution containing one or more substances identified by name in the IMDG Code or classified under an N.O.S or generic entry and one or more substances not subject to the provisions of the IMDG Code is not subject to the provisions of the IMDG Code if the hazard characteristics of the mixture or solution are such that they do not meet the criteria, including human experience criteria, for any class.67

With regard to substances or mixtures with multiple hazards, the table in 2.0.3.6 of the Code shows the class of a substance, mixture or solution having more than one hazard when it is not specifically listed by name in the Code. The

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65 Such as hazard class, subsidiary risk(s) (if any), packing group (where assigned), packing and tank transport provisions, EmS, segregation and stowage properties and observations, etc.
66 The IMDG Code 2.0.2.7.
67 The IMDG Code 2.0.2.9.
priority given in the hazard table indicates which of the hazards shall be regarded as the primary hazard. The Proper Shipping Name of a substance, mixture or solution when classified in accordance with the IMDG Code 2.0.3.1 and 2.0.3.2 shall be the most appropriate N.O.S. entry in the Code for the class shown as the primary hazard.68

dd) Classes and divisions of dangerous goods in the IMDG Code

(1) Class 1: Explosives

These are among the most dangerous of all goods carried by sea and the precautions outlined in this class of the Code are particularly stringent. The class is divided into six divisions which present different hazards.69

- Division 1.1: substances and articles which have a mass explosion hazard. A mass explosion is one which affects almost the entire load virtually instantaneously.
- Division 1.2: substances and articles which have a projection hazard but not a mass explosion hazard.
- Division 1.3: substances and articles which have a fire hazard and either a minor blast hazard or minor projection hazard or both, but not a mass explosion hazard
- Division 1.4: substances and articles which present no significant hazard. This division comprises substances which present only a small hazard in the event of ignition during transport. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire need not cause virtually instantaneous explosion of almost the entire contents of the package.
- Division 1.5: very insensitive substances which have a mass explosion hazard. This division comprises substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.
- Division 1.6: extremely insensitive articles which do not have a mass explosion hazard.

Class 1 is unique in that the type of packaging and method of packing used frequently has a decisive effect on the hazard and, therefore, on the assignment of an explosive to a particular division and compatibility group. Although the safety of goods in Class 1 can be best assured by stowing them separately, this can rarely be done in practice. To ensure that they are stowed as safely as possible, the goods in the class are arranged in twelve compatibility groups.

68 The IMDG Code 2.0.3.3.
69 The IMDG Code 2.1
(2) Class 2 – Gases

Gases carried on board ships have various chemical properties and come in different states. They may be compressed, liquefied at ambient temperature under high pressure, dissolved under pressure in a solvent, which is then absorbed in a porous material, or liquefied by refrigeration. They may, for example, be non-flammable, non-poisonous, flammable, poisonous and corrosive, support combustion or be a combination of all or some of these. Some gases are lighter than air, while some are heavier.

For the purpose of stowage and segregation, Class 2 is divided into 3 subclasses according to the hazards presented by the gases during transport.

– Class 2.1: flammable gases
– Class 2.2: non-flammable, non-poisonous gases
– Class 2.3: poisonous gases

(3) Class 3 – Flammable liquids

This class deals with liquids which give off flammable (ignitable) vapours at or below 61°C closed cup (c.c.). This is called flash-point. Some flammable liquids are included in other classes because of their other more predominant poisonous or corrosive properties.

Class 3 is divided into three subclasses according to the flashpoints of the liquids: Class 3.1 covers liquids with a low flashpoint (below -18°C c.c. (0°F), such as acetone; Class 3.2. covers liquids with an intermediate flashpoint (-18°C up to but not including 23°C c.c. (73°F), such as benzene; and Class 3.3. covers liquids with a high flashpoint (23°C and above up to 61°C c.c. (141°F), such as certain alcoholic beverages. Generally speaking, water is unsuitable in fighting a fire involving flammable liquids.

(4) Class 4 – Flammable solids or substances

This class is divided into three subclasses which have very different properties. The class includes some commonly known products, many of which seem harmless enough but which can be very dangerous unless properly packed, handled and transported.

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70 “Focus on IMO, IMO and Dangerous Goods at Sea” May 1996, <www.imo.org/includes/blastDataOnly.asp/data_id%3D7999/IMDGdangerousgoodsfocus1997.pdf> (visited 30.01.2007), 12.
71 MDG Code 2.2.
72 141°F. IMDG Code 2.3.
73 The lowest temperature of a liquid at which its vapour forms an ignitable mixture with air. IMDG Code 2.3.3.
74 Mainly classes 6.1 and 8.
75 IMDG Code 2.3.2.6; “Focus on IMO, IMO and Dangerous Goods at Sea”, May 1996, <www.imo.org/includes/blastDataOnly.asp/data_id%3D7999/IMDGdangerousgoodsfocus1997.pdf> (visited 30.01.2007), 13.
Class 4.1 – Flammable solids

The substances and materials in this class are solids possessing the properties of being easily ignited by external sources, such as sparks and flames, and of being readily combustible or being liable to cause or contribute to fire through friction. This class also covers substances which are self-reactive, i.e. liable to undergo at normal or elevated temperatures a strong exothermic decomposition caused by excessively high transport temperatures or by contamination, and desensitized explosives, which may explode if not diluted sufficiently. Under certain conditions, an explosives subsidiary risk label is required for some substances. This class comprises:

- readily combustible solids and solids which may cause fire through friction;
- self-reactive (solids and liquids) and related substances; and
- desensitized explosives

Some common products covered by this class are celluloid; camphor; dry vegetable fibers such as cotton, flax, hemp, kapok; some metal powders; naphthalene; sisal; hay and straw; matches; rubber scrap and sculpture.

Class 4.2 – Substances liable to spontaneous combustion

Substances in this class are liable to become warm and to ignite spontaneously. Some are more likely to do so when wetted with water or in contact with moist air. Some may also give off toxic gases if involved in a fire. Because of these properties, packing and stowage requirements are important. Although some general information is contained in the introduction to the class, more detailed information is given in the individual schedules.

Common products included in this class are charcoal, celluloid scrap, copra, wet or damp or oily fibers, some nitrocellulose-based plastics, fishmeal and seed cakes.

Class 4.3 – Substances which, in contact with water, emit flammable gases

Since the substances in this class give off gases which are sometimes subject to spontaneous ignition and are also toxic, fire-fighting is a particular problem. The use of water, steam or water-foam extinguishers may make matters worse and even the use of carbon dioxide can do more harm than good in some situations; for small fires, neutralizing powders or sand is recommended.

Common products in this class include calcium carbide, metal powders, ferrosilicon, magnesium and magnesium-based products, potassium and potassium-based products, rubidium and sodium.

(5) Class 5 – Oxidizing substances

This class is divided into two subclasses. Class 5.1 deals with oxidizing substances which, although not necessarily combustible in themselves, may increase the risk and intensity of a fire by giving off oxygen. Class 5.2 covers organic peroxides, most of which are combustible.
Class 5.1 – Oxidizing substances (agents)

The fact that all substances in this class give off oxygen when involved in fire creates obvious fire-fighting difficulties, even though they are not necessarily combustible themselves. Some substances may also be sensitive to impact, friction or a rise in temperature, and some may react vigorously with moisture, so increasing the risk of fire.

Mixtures of these substances with organic and combustible materials are easily ignited and may burn with explosive force. There will also be a violent reaction between most oxidizing substances and strong liquid acids, producing highly toxic gases. One fire-fighting problem is caused by the fact that some substances in this class give off oxygen when involved in a fire, so that the use of steam, carbon dioxide or other inert gas extinguishers may be ineffective.

This class includes ammonium nitrate fertilizers, chlorates, chlorites, and calcium and potassium permanganates.

Class 5.2 – Organic peroxides

In addition to being oxidizing substances (agents), most substances in this class are liable to violent or explosive decomposition. Most will burn rapidly and are sensitive to heat. Some are also sensitive to impact or friction. To reduce this sensitivity to a safe level, they are carried in a solution, such as a paste, wetted with water or with an inert solid. Even so, some may react dangerously with other substances.\(^76\)

Some organic peroxides can be particularly dangerous to the eyes, even after only momentary contact, and immediate rinsing of the eyes lasting at least 10 to 15 minutes is essential, followed by medical attention.

Some substances may begin to decompose when a certain temperature is exceeded, and in some cases this may lead to an explosion. To prevent this, some organic peroxides have to be transported at a controlled temperature.\(^77\) Fire is another problem and may result in explosion. Packages containing organic peroxides should be moved away from the heat of any fire or jettisoned.\(^78\) Organic peroxides are carried by sea “on deck only” and are prohibited for carriage on most passenger ships.

(6) Class 6 – Toxic and infectious substances

Class 6 is subdivided into two classes.

Class 6.1 – Toxic substances

Substances in Class 6.1 may cause serious injury or even death if swallowed, inhaled or absorbed by contact through the skin. They are arranged in three pack-
ing groups (I, II and III) in descending order of risk. Fire-fighting measures are basically the same as those given for Class 3, flammable liquids, but because of the high risk of poisoning through fumes, the IMDG Code provides that ships carrying poisonous substances should always carry protective clothing and self-contained breathing apparatus. If leakage or spillage involving toxic substances occurs, decontamination should be carried out by trained staff wearing protective clothing and equipment.

This class covers mainly pesticides and insecticides, but also substances such as chloroform, cyanides, strychnine and tear gas.

*Class 6.2 – Infectious substances*

These are substances containing viable micro-organisms, including bacterium, virus, rickettsia, parasite, fungus or a recombinant, hybrid or mutant that are known or reasonably believed to cause disease in animals or humans. However, they are not subject to the provisions of this class if the spread of disease to humans or animals exposed to such substances is considered unlikely.

Infectious substances carry a special label. In the case of damage or leakage, public health authorities have to be notified immediately.

(7) **Class 7 – Radioactive materials**

The provisions of this class are based on the principles of the IAEA’s Regulations for the Safe Transport of Radioactive Materials. They offer guidance to those involved in the handling and transport of radioactive materials in ports and on ships without necessarily consulting the IAEA safety regulations, although references to the IAEA Regulations have been included in the Class 7 IMDG Code.

Packing, labelling and placarding, stowage, segregation and other requirements vary according to the radioactivity of the material. Radioactive materials are divided into three categories, depending on radiation levels, Category I being the least dangerous.

(8) **Class 8 – Corrosives**

Substances in this class are solids or liquids; they can damage living tissue and materials, in some cases very severely. Some of them give off irritating, poisonous or harmful vapours and some are flammable or give off flammable gases under certain conditions.

Substances in this class may be corrosive to metals such as aluminium, zinc and tin but not to iron or steel, while others are corrosive to all metals. Some substances even corrode glass. Water can also affect some substances by making them more corrosive, by liberating gases and, in a few cases, by generating heat. Due to these different properties, packing, stowage and segregation are extremely important. The substances are also divided into three packaging groups, packaging Group 1 being the most dangerous. The introduction to Class 8 gives detailed information on the types of packaging to be used.

Most fires involving corrosive substances can be dealt with by any extinguishing agent, including water, although those which are also flammable should be
E. Meaning of dangerous goods

Dealt with in the same way as substances in Class 3 of the IMDG Code. Care must also be taken in view of the high risk of poisoning through fumes. This class includes battery acid, formic acid, caustic soda and sulphuric acid.

(9) Class 9-Miscellaneous

This class includes substances, materials and articles which, for various reasons, do not come within any of the other classes. As their properties and characteristics are so varied, the individual schedules usually include detailed information on stowage and segregation, packing and further observation.

(10) Marine pollutants

Marine pollutants are substances which, because of their potential to accumulate in seafood or because of their high toxicity to aquatic life, are subject to the provisions of Annex III of MARPOL 73/78. Marine pollutants are not a separate class, although they are regulated under a special title. Many of the substances in Class 1 to 9 are, in fact, considered to be marine pollutants.

b) Dangerous goods in other codes

The IBC, IGC, and BC Codes do not define dangerous goods either. Instead, they list certain substances according to their hazards.

aa) The IBC Code

Products covered by the IBC Code mainly have a significant fire hazard exceeding that of petroleum products. Additionally, those products may have a health hazard, water-pollution hazard, air-pollution hazard, reactivity hazard and marine pollution hazard.79 Chapter 17 of the Code lists around 500 products.

bb) The IGC Code

The products that the IGC Code comprises may have one or more hazard properties which include flammability, toxicity, corrosivity and reactivity. A further possible hazard may arise due to the products being transported under cryogenic or pressure conditions. The cargoes that fall under the Code are listed in Chapter 19.80 Some of the cargoes are also covered by the IBC Code and this mentioned in the list.

cc) The BC Code

One of the main dangers with regard to solid bulk cargoes is their effect on the stability of the ship. In the worst cases, they may cause the ship to capsize. The

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79 IBC Code Art. 1.2.
80 Such as ammonia, butane, chlorine, ethane, methane (LNG), propane, sulphur dioxide.
The list comprises about 30 products.
Part 2: Meaning of dangerous goods

BC code deals with three basic types of cargo: materials which may liquefy, materials which possess chemical hazards and materials which do not fall under either of these categories but which may nevertheless pose other dangers.

When loaded, all bulk cargoes tend to form a cone. The angle formed between the slope of the cone and the bottom of the hold, which varies according to the cargo, is known as the angle of repose. Cargoes with a low angle of repose are much more prone to shift during the voyage and special precautions have to be taken to ensure that the cargo movement does not affect the ship’s stability. Some cargoes affect stability by liquefying. Moreover, some other cargoes are liable to oxidation, which may result in the reduction of the oxygen supply, the emission of toxic fumes and warming up. Other may emit toxic fumes without oxidation or when wet.

A list of cargoes which may liquefy is contained in Appendix A to the Code. The stowage factor is generally low and it is emphasized that the list of materials is not exhaustive. Appendix A includes concentrates derived from copper, iron, lead, manganese, nickel and zinc ores, various pyrites, fine-particulate coal, coal slurry and various other substances.

Appendix B gives an extensive list of materials which constitute chemical hazards, ranging from aluminium dross to zinc ashes. Some of the classified materials listed also appear in the IMDG Code when carried in packaged form, but others become hazardous only when they are carried in bulk. Because they might reduce the oxygen content of cargo space or are prone to warming up. Examples are woodchips, coal and direct reduced iron (DRI). The various types listed include flammable solids; flammable solids or substances liable to spontaneous combustion; flammable solids or substances which, in contact with water, emit flammable gases; oxidizing substances; poisonous substances; radioactive substances; or corrosives.

Bulk cargoes which are neither liable to liquefy nor constitute chemical hazards are not normally seen as special hazards and are covered in Appendix C. The list ranges from alumina to zircon sand, as well as many of the more commonly carried bulk cargoes such as clay, cement, iron ore, pig iron, sand and sugar. The list includes the angle of repose of each material, its approximate stowage factor and the properties and special requirements connected with each one.

6. Meaning of dangerous in rules of law

From the point of view of the carrier, dangerous goods are goods which pose unforeseeable hazards to the ship and to the other cargo. As will be discussed later, knowledge of the nature of the goods and proper handling methods are indispensable in order to prevent danger. According to trade and industry, dangerous goods are that about which something must be known so as to prevent danger. That means that trade and industry is primarily concerned with rules whose dangerous characteristics can be anticipated beforehand.

81 Such materials should be carefully segregated from other dangerous goods carried in packaged or unitized from. The Code describes how this should be done.
82 Tiberg, “Legal Survey”, in Grönfors (ed.), Damage from Goods (1978), 9, 11.
Conventions, statutes or regulations do not give a definition of dangerous goods, but instead list dangerous goods. The cargoes listed in the IMDG Code are deemed dangerous; however, it can be deduced from case law that whether the goods in the particular case are dangerous is subject to individual evaluation of the event leading to the damage. The courts look at many different factors and it is not enough to establish that the goods in question are normally regarded as dangerous according to law, regulations or any other relevant source. A particular cargo may be “dangerous” despite the fact that cargoes of its type are not usually so regarded. Conversely, a cargo listed in dangerous cargo regulations may be said to be not dangerous under the special set of circumstances. Thus numerous cargoes cannot be classified in advance simply by reference to their type as “safe” or “dangerous”. Bulk cargoes affecting the stability of the vessel have often been the subject-matter of dangerous cargo cases. Although the expression “dangerous goods” is a convenient description of the category of goods to which the obligation to give notice and a different liability regime apply, the term “dangerous” has been a puzzle in case law.

a) English law

The review of English Common Law below will show that damage by cargo is a field which is particularly vulnerable to reasoning by false analogy. For instance, a dangerous cargo of type X is being carried on board a vessel and becomes involved in a situation in which damage is caused to the goods or properties of a person other than the owner of cargo X. A court analyses the legal situation and concludes that the owner of the cargo, or of the carrying vessel, is or is not liable to the injured party. Subsequently, if cargo Y becomes involved in a similar situation with the result that similar damage ensues, it is tempting to treat this as another example of the carriage of “dangerous” cargo. This process of reasoning, which can be seen in some of the reported cases, leads to unsound results. It ignores the fact that certain types of cargo which may become involved in an incident causing damage to other persons or property may not be dangerous at all.

English courts generally focus on the situation in which the damage occurred and they seem to be more concerned with dangerous situation rather than dangerous nature. Therefore, the word dangerous extends beyond matters likely to

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83 Wilford/Coghlin/Kimball, Time Charters (2003), 179.
84 Mustill, “Carriers’ Liabilities and Insurance” in Grönfors (ed.) Damage from Good (1978), 69, 75.
85 Ibid.
86 Ibid. at 76 f. Furthermore, the distinction between the cargo and the situation also emphasizes the different responsibilities of cargo owner, shippers, consignee, carrier and operator of facilities used in carriage of goods. Responsibility for a substance, the danger of which lies in its make-up, is linked to its manufacturer and user, whereas responsibility for a substance, the danger of which lies in its escape, must be at least linked to the carrier or the operator of facilities, for it is the carriage which lies at the root of the danger. And this is more so when a substance becomes “hazardous” only if certain condition exist.
cause physical loss of or harm to the ship, crew, other cargo, or cleaning expenses and delay, and covers all features of the goods which might lead to detention of the ship.

**aa) Physically dangerous**

It has been said that the word dangerous in common law obligation is not a term of art but is to be given its ordinary meaning. The Oxford Dictionary defines a “danger” as a thing that causes or is likely to cause harm. Reference to the thing itself and not to the circumstances surrounding it is said to imply that the substance has to be intrinsically dangerous. However, there are cargoes which are not intrinsically dangerous yet are capable of causing loss or damage. Several categories of cargo have been suggested which may cause danger:

1. cargo which is known to be always dangerous, however carried (nitroglycerine)
2. cargo which is known to be capable of safe carriage if exceptional facilities, skill and care are employed (liquefied natural gases)
3. cargo which is not dangerous in itself but which can become dangerous if brought into proximity to other cargoes
4. cargo which is not dangerous in itself but which can damage other goods of a particular type
5. cargo whose characteristics are different than those indicated by its appearance or description
6. cargo which is safe in normal circumstances but unsafe in abnormal circumstances
7. cargo which, although harmless if packed in a proper and recognized manner, becomes potentially deleterious if not so packed.

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87 Mediterranean Freight Services Ltd. v. BP Oil International Ltd. (The “Fiona”) [1994] 2 Lloyd’s Rep. 506 fuel oil caused an explosion; Northern Shipping Co. v. Deutsche Seereederei (The “Kapitan Sakharov”) [2000] 2 Lloyd’s Rep. 255, explosion and fire by undeclared dangerous cargo and cargo of isopentane; General Feeds Inc. v. Burnham Shipping Corp. (The “Amphion”) [1991] 2 Lloyd’s Rep. 101, cargo of fishmeal, listed in the IMDG Code, caused a fire.

88 Bamfield v. Goole and Sheffield Transport Company [1910] 2 K.B. 94, ferro silicon caused the death of a seaman.

89 Bras v. Maitland (1856) 26 L.J.Q.B 49; 6 E. & B. 470 corrosive effect of lime caused damage to other cargo.

90 Deutsche Ost-Afrika v. Legent [1998] 2 Lloyd’s Rep. 71 IMDG Code Class 1.1 explosive cargo caused off-hire, damages and expenses for port of refuge; Losinjska Plovilba v. Transco Overseas Ltd. (The Orjula) [1995] 2 Lloyd’s Rep. 395, drums of hydrochloric acid leaked.

91 Treitel/Reynolds, Carver on Bills of Lading (2005), 512.

92 Sig. Bergesen D.Y. Co. v. Mobil Shipping (The “Berge Sund”) [1992] 1 Lloyd’s Rep. 460, 466.

93 Jackson, “Dangerous Cargo- A Legal Overview” in Maritime Movement of Dangerous Cargoes- Public Regulations Private Liability Papers of One Day Seminar (1981), A2.

94 Mustill, “Carriers’ Liabilities and Insurance” in Grönfors (ed.) Damage from Goods (1978), 69, 75 f.
If there is one common strain among all the categories, it is the fact that most of these are capable of causing physical damage to the ship or other cargo or personal injury. However, intrinsic danger is not a common trait among them.

**bb) Intrinsic danger not necessary**

Certain types of cargoes are capable of causing damage only in certain factual contexts. There are cargoes which are not intrinsically dangerous, but may be subject to special rules. These goods are potentially dangerous and in the course of transit they actually become dangerous. For instance, the danger may have resulted from improper stowage. As a result, the question arises of why the potentiality has been translated into an actuality. Cotton is a rather good example. When it is wet, it ignites easily. Cotton is in Class 4.1 of the IMDG Code.

**cc) Relevance of the carrier’s knowledge to the meaning of dangerous goods**

It has been said that it is often impossible to say in theory whether goods are dangerous or not, since the question often depends on the knowledge of the carrier as to the characteristics of the goods. That is to say that the element of the carrier’s knowledge is relevant to the question of whether the goods are in fact “dangerous”.

Safe carriage of many types of cargo depends on the knowledge on the part of the carrier in relation to the character of the goods and the necessary precautions to be taken. Absence of knowledge, therefore, may transform the cargo from one which is innocuous but potentially dangerous into one which is actually dangerous. Such an approach appreciates the multi-dimensional nature of the problem but covers all type of goods, whatever hazards they may create, and treats the category of “dangerous cargo” as at most non-existent and at least immaterial. The knowledge of the carrier is of fundamental importance. However, it is relevant to the question of the determination of liability for loss or damage arising from the cargo rather than to the determination of the type of the cargo, e.g.

**Footnotes**

95 “The normal meaning of the word ‘dangerous’ in relation to goods does seem to … imply that the goods are such as to be liable to cause physical damage to some other object other than themselves”. Effort Shipping Co. Ltd. Linden Management SA (The Giannis NK [1994] 2 Lloyd’s Rep. 171, 180. Although the case concerned the Hague-Visby Rules, it is submitted that the observation is equally applicable to the common law obligation. Cooke/Young/Taylor, Voyage Charters (2001), 150.

96 Mustill, “Carriers’ Liabilities and Insurance” in Grönfors (ed.) Damage from Good (1978), 69, 77; Bulow, “‘Dangerous’ Cargoes: the Responsibilities and Liabilities of the Various Parties” [1989] LMCLQ 342, 344.

97 Abdul Hamid, Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure (Diss. Southampton 1996), 53.

98 Ibid.

99 The Athanasia Comminos [1990] 1 Lloyd’s Rep. 277, 282.

100 Jackson, “Dangerous Cargo- A Legal Overview” in Maritime Movement of Dangerous Cargoes- Public Regulations Private Liability Papers of One Day Seminar (1981), A10.
whether the cargo is dangerous or not. In other words, a cargo is not dangerous merely that its nature is unknown by the carrier, but liability of the shipper is likely to arise if the nature is unknown by the carrier.

**dd) Dangerous as particular characteristics undisclosed**

Under certain circumstances a cargo that could have been carried safely had the master been made aware of its particular characteristics may be dangerous if he is not given that information.

A cargo of iron ore concentrate was loaded in *Micada v. Texim*,\(^{101}\) but the master was misled as to its moisture content and was not informed that the moisture content was such that shifting boards should have been fitted. Shifting boards were not fitted and, as a result of the cargo shifting, the ship developed a severe list and had to put into a port of refuge. It was held that these goods must be considered as being *dangerous*. The danger consisted in the fact that the cargo was not what it seemed to be.\(^{102}\) It is worth noting that iron ore is listed in the BC Code. However, it could be said that it is not correct to say that cargo is dangerous when it is not what it seems to be, but rather that it might be dangerous if the moisture content exceeds a certain level. In other words, the danger is in the moisture nature of the cargo rather than in the non-disclosure of its moisture content.

**ee) Dangerous as cargo has different characteristics than usual**

There may be situations where the cargo is accurately and precisely described in the contract of carriage. From such description the carrier will know or is supposed to know of the normal hazards accompanying the cargo. However, there may be cases in which a cargo looks safe and, according to its description, would normally be safe, but, owing to some special and not obvious feature, it is dangerous.

In the *Athanasia Comminos*,\(^{103}\) a cargo of coal had emitted methane gas, which mixed with air and caused an explosion on board. The ship was damaged and four seamen suffered serious personal injuries.\(^{104}\) It was said that the character of goods play an important part but it is not the only factor. Equally important are the knowledge of the shipowner as to the characteristics of the goods and the care with which he carries them in the light of that knowledge. The court drew a dis-

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\(^{101}\) [1968] 2 Lloyd’s Rep. 57.

\(^{102}\) *Ibid.* at 62. In Health Steel Mines, Ltd. v. The Erwin Schroeder [1969] 1 Lloyd’s Rep. 370, a cargo of copper concentrate was shipped. However, a certificate of analysis was obtained and, because of the concentrate’s nature, shifting boards were fitted, the ship listed. It was found that a cargo of this nature with these characteristics is a dangerous cargo for a vessel to have on board.

\(^{103}\) [1991] 2 Lloyd’s Rep. 277

\(^{104}\) In particular, by reason of the opinion that no special precautions would have been considered necessary by a prudent owner at the relevant time.
tinction between “extra hazardous goods” and “goods which are neither dangerous nor safe”. The court continued that the carriage of coal involves hazards greater than those associated with inert goods; but they are hazards which could be overcome if the shipowner had the necessary knowledge, skill and equipment; and this is so even if the particular cargo brings with it a risk greater than that which is usually associated with the carriage of coal. In such a case, it is not correct to start with an implied warranty as to the shipment of dangerous goods and try to force the facts within it; but rather to read the contract and the facts together, and ask whether, on the true interpretation of the contract, the risks involved in this particular shipment were risks which the plaintiffs contracted to bear. It was found that coal cargo had no special characteristics at the time of shipment. Consequently, it can be said that if the particular characteristics are not wholly different than usual, cargo may not be deemed dangerous. In other words, if the particular characteristics are completely different than usual, cargo may be deemed dangerous.

ff) Innocuous goods causing damage may be dangerous

Although it is obvious that the subject of damage in transit to a large extent arises from inherently dangerous cargo or cargo becoming dangerous under special circumstances, there are cases in which damage arises from totally innocuous cargo or from the defects in the packages themselves. Cases dealing with defective packing often involve dangerous or hazardous cargo that leaks from a defective container, drum or otherwise, but there are also cases involving a situation where an innocuous cargo causes damage. In common law, a cargo may be dangerous if it is dangerously packed or necessitates cleaning of the ship.

For instance, in Ministry of Food v. Lamport & Holt Line, where cargo of tallow contaminated another cargo of maize, the owner argued that it was a startling proposition that anything so placed and innocuous as tallow should be dangerous. It seemed that goods are dangerous in the sense that they can do damage to other goods. Therefore, it was said that there is not much difference between the dam-

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105 It was asserted that the term “extraordinary hazards” should not be equated with hazards which are intrinsic in the goods. It actually means hazards arising from goods which are extraordinary to the knowledge of the carrier. Abdul Hamid, Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure (Diss. Southampton 1996), 56.

106 See also The Atlantic Duchess [1957] 2 Lloyd’s Rep. 55, where butanized crude oil caused fire and explosion. It was held that the shippers had failed to prove that the butanized crude-oil cargo shipped by the charterers was outside the contractual description, or that butanized crude oil involved any special hazards. In Mediterranean Freight Services Ltd. v. BP Oil International Ltd. (The Fiona) [1993] 1 Lloyd’s Rep. 257, 258 the fuel-oil cargo had dangerous characteristics which were wholly different from those commonly associated with fuel-oil cargoes.

107 Boyd/Burrows/Foxton, Scruton on Charterparties (1996), 105.

108 [1952] 2 Lloyd’s Rep. 371.
age done, for instance, by corrosives or by a commodity which leaks something less dangerous. Moreover, in the *SIG Bergesen DY and Co. v. Mobil Shipping (The Berge Sund)*, the owners argued that a cargo is dangerous if it or its residue contaminates another cargo on the next voyage. That would mean any cargo would be dangerous if it contaminated in the absence of effective cleaning. The court accepted in principle that the shipment of a cargo which, unknown to the carrier, would necessitate extensive decontamination of the ship before she was fit to load her next cargo might amount to the shipment of dangerous cargo. However, this proposition was deemed to be too wide, since it would mean that any cargo would be dangerous if it contaminated in the absence of effective cleaning. It is said that this is a matter of degree and the mere necessity to clean after the voyage cannot render the cargo dangerous.

**gg) Legally dangerous goods**

The notion of “harm” in the definition of “danger” connotes physical danger in the form of personal injury, or damage to ship or property on board. Nevertheless, in English common law the concept of dangerous goods is potentially wider, because it embraces not only goods which are physically dangerous but also those which are likely to subject the ship to legal or political risks, causing detention or confiscation, or delay. That is to say, the application of the dangerous goods provision was also extended to *unlawful goods*.

In *Mitchell Cotts v. Steel*, a ship was chartered on a voyage from Basrah to Alexandria with a cargo of rice. After the voyage had commenced, the charterers...

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109 Ibid. at 382. As the carrier was aware of the nature of the goods, there was no breach of any duty. However, in *Goodwin, Ferreira & Co. Ltd. and Others v. Lamport & Holt, Ltd.* (1929) 34 L.I. L. Rep. 192, a cargo of machinery came out of its case, dropped to the bottom of the lighter, made a hole in it, let in seawater and damaged the other cargo of cotton yarn. The case was decided as being one general cargo case.

110 [1993] 2 Lloyd’s Rep. 453.

111 Ibid. at 463.

112 Cooke/Young/Taylor, *Voyage Charters* (2001), 150. The authorities offer little guidance on where the line is to be drawn. In the *Berge Sund* case, the need to clean the ship, which took about 10 days, was not held to render the cargo dangerous. In the *Bela Krajina* [1975] 1 Lloyd’s Rep. 139 case, the fact that the vessel required a week to clean was held not to raise the inference that more than normal cleaning and washing was required, and in *The Giannis NK* [1998] 1 Lloyd’s Rep. 337 case, the need to fumigate the vessel after carriage of the infested cargo was not held to render the cargo dangerous as regards the vessel. By contrast, in *The Orjula* [1995] 2 Lloyd’s Rep. 395 case, the contamination of the vessel by hydrochloric acid, which required cleaning by specialist contractors, was held to amount to physical damage.

113 Abdul Hamid, *Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure* (Diss. Southampton 1996), 61.

114 Boyd/Burrows/Foxton, *Scrutton on Charterparties* (1996), 105; Cooke/Young/Taylor, *Voyage Charters* (2001), 153.

115 [1916] 2 K.B. 610.
asked the owners to agree to a change of destination to Piraeus, and the owners agreed. The charterers, but not the owner, were aware that rice could not be discharged at Piraeus without the permission of the British Government. The ship was detained at Piraeus for 22 days while attempts were made to obtain permission, which was eventually refused. The shipowners claimed damages for detention. The claim succeeded and it was held that the shipper undertakes that he will not ship goods likely to involve unusual danger or delay to the ship without communicating to the owner facts which are within his knowledge indicating that there is such risk, if the owner does not and could not reasonably know those facts.116

However, this principle extends the duty of the shipper and goes one step further beyond the dangerous goods principle.117 As the word “dangerous” connotes physical damage, it becomes manifestly inappropriate to apply it to cases where the loss to the carrier takes the form of delay or detention. But the common law undertaking is to be understood as a general approach to liability which should include both physical loss and economic loss arising from delay or detention of the ship.118

It is said that the basis of this general principle has been traced to a passage in Abbott’s treatise, where the author states that “The merchant must lade no prohibited or uncustomed goods, by which the ship may be subjected to detention or forfeiture”.119 It should be noted, however, that there the author was discussing the situation where a shipment caused detention or forfeiture of the vessel, and not

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116 By contrast in Owners of Spanish S.S. Sebastian v. De Vizcaya [1920] 1 K.B. 332, a cargo of coal was contracted to be loaded and delivered to a port in Spain. Subsequently, a proclamation prohibited the export of coal to Spain except with a licence. At the loading port the vessel was detained while waiting for the licence, which, without default on the part of the charterers, was not obtained until 2 weeks later. The shipowners relied on the implied common law obligation as propounded in the Mitchell Cotts case. It was, however, held that as the owners had knowledge at the time the cargo was loaded that it was necessary to obtain an export licence, which might involve delay, the charter was not liable for the detention. See also Chandris v. Isbrandtsen-Moller Co. Inc. [1951] 1 K.B. 240.

117 The principle in Mitchell Cotts v. Steel is not extended so far to entitle the shipowner to recover damages for any expense or delay caused by the nature or condition of the goods. In Transoceanica v. Shipton (1923) 1 K.B. 31, the presence of stones in a cargo of barley prevented the cargo from being discharged by spout and delayed the vessel for a day and a half. It was held that the cargo was such that it could be discharged by the appliances normally in use at the discharged port. In Rederi Aktiebolaget Transatlantic v. Board of Trade (1924) 20 L.l.L.Rep. 241, it was held that the charterer was in breach of the implied warranty by loading a cargo of heavy locomotives weighing up to 16 tons when they had been informed before the charterparty was made that the ship’s tackle could only lift 5 tons and at the discharging port there was no equipment capable of handling the goods. The distinction between these cases is that in the former case the delay and inconvenience were not of major significance, whereas in the latter case the condition of the cargo caused serious consequences.

118 Giannis NK [1994] 2 Lloyd’s Rep. 171, 179.

119 Abdul Hamid, Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure (Diss. Southampton 1996), 64.
physical damage to the ship or its cargo. Therefore, it can be contended that the application of the common law undertaking to loss in the form of delay or detention does not involve a purported extension of the dangerous goods principle. If there were any extension, it might be the opposite.

On the other hand, in the Giannis NK case, the House of Lords declined to express a view on whether goods may be of a dangerous nature within the meaning of Art. IV.6 of the Hague/Hague-Visby Rules if they are liable to cause delay or seizure of the ship and cargo through the operation of some local law. Clearly, if the risk is one of delay only as opposed to seizure, the case is less strong. On the other hand, it is said that if the Hague Rules do not deal with non-physically dangerous cargo, one cannot determine the rights of the parties in relation to such cargo by reference to such rules.

**hh) What is meant by “goods of inflammable, explosive or dangerous nature” in Art. IV.6 of the Hague/Hague-Visby Rules**

(1) Dangerous not restricted to preceding words

Art. IV.6 of the Hague/Hague-Visby Rules provides that “Goods of an inflammable, explosive or dangerous nature to the shipment...”. The first two designated types of danger both indicate combustion of some sort. The provision in the second paragraph indicates merely that a “danger to the ship or cargo” is contemplated and that is the governing criterion. However, the word “dangerous” is given a broad meaning, not limited to the inherent properties of the goods themselves nor the sort of danger posed. It is contended that the danger may not simply be to the vessel but may extend to other goods on the vessel and it may be affected by the laws at the ports of call or discharge.

In The Giannis NK, a cargo of groundnut and a cargo of wheat pellets were loaded in the Caribbean, where there were strict quarantine and phytosanitary regulations. At the second port of discharge, the groundnut pellets were found to be infested with live kaphra beetles. This infestation was inherent in the cargo upon shipment despite fumigation and without the knowledge of the shipowners, the charterers or the shippers. Because the Kaphra beetle was a voracious consumer of foodstuffs and thus undesirable, the vessel was ordered by the local agricultural authorities to dump the entire remaining cargo at sea or to return it to the country of loading. The remaining wheat pellet cargo was not itself threatened by the infestation spreading to it, but it was likely that the consequence of the infestation of the groundnut cargo was that it would have to be destroyed too, as indeed happened when both cargoes were dumped at sea. The vessel was then extensively fumigated so that she was fit for further trading.

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120 Ibid.
121 The Giannis NK [1998] 1 Lloyd’s Rep. 337, 341, 346.
122 Treitel/Reynolds, Carver on Bills of Lading (2005), 645.
123 The Giannis NK [1998] 1 Lloyd’s Rep. 337, 338.
124 Cooke/Young/Taylor, Voyage Charters (2001), 1006.
125 The Giannis NK [1998] 1 Lloyd’s Rep. 337.
The shipowner sued both shippers and charterers. The claim, based on Art. IV.6 of the Hague-Visby Rules, was that the groundnut pellets cargo was dangerous cargo, presenting a physical danger to the vessel, which required fumigation, and to the other wheat pellet cargo, which also had to be dumped at sea. The House of Lords held that the cargo was dangerous within the meaning of Article IV Rule 6. It was of a “dangerous” nature on shipment because it was liable to give rise to the loss of other cargo by dumping at sea and, presumably, to the quarantining of the vessel until after she had been fumigated. What made the cargo dangerous was the fact that the shipment and the voyage were to countries where the imposition of quarantine and an order for the destruction of the entire cargo was to be expected or at least a natural and not-unlikely consequence of the presence of the infested goods. Accordingly, the word “dangerous” was given a broad meaning, not confined to goods of inflammable or explosive nature or their like. It was said that it would be wrong to apply the *eiusdem generis* rule to the words “goods of inflammable, explosive or dangerous nature” as these are disparate categories of goods.

The idea that “dangerous cargoes” cover those whose danger is that of quarantine blight in a world where dangerous cargoes are categorized in the IMDG Code and other codes is surprising. The words “inflammable” and “explosive” do not suggest this, and it is not entirely satisfactory to extend the meaning of the word “dangerous” in this way. Art. IV.6 aims at regulating extraordinarily dangerous things such as chemicals and chemical effects that may pose unreasonable dangers to ship or cargo; therefore, infestation should not fall under Art. IV.6.

(a) *Eiusdem generis* rule

The so-called *eiusdem generis* rule lies down that where a list of specific items is followed by general words such as “any other cause”, the general words should be interpreted as being restricted to things of *the same kind* as the specific examples.

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126 Ibid. at 338.
127 Ibid. at 346.
128 Treitel/Reynolds, *Carver on Bills of Lading* (2005), 645. See also *Acatos v. Burns* (1878) 3 Ex.D. 282. By contrast, it is asserted that the court’s approach is a realistic analysis of the risks accepted by a shipowner in carrying a shipper’s cargo with unknown characteristics. Thus, the use of word “danger” in this context should be reconsidered. Steel, “Dangerous Beetles? The Hague Rules and The Common Law” [1996] *IJOSL* 229, 230.
129 In a U.S case, the *Stevenson & Co. Inc. v. Bags of Flour* (629 F.2d. 338), whose facts are very similar to that of the *Giannis NK*, an in rem action, stemming from insect infestation of wheat flour, was brought by the carrier, which claimed a lien on the cargo of one of the vessel for freight, detention and expenses. It was held that infestation began either on the rail cars or at three independent mills supplying substantial amounts of the flour. There was substantial evidence that neither warehouse nor ships were the source of infestation. Flour from previous shipments had been recently stored in the warehouses without any problem and there was evidence that ships and warehouses were relatively clean. It was found that infestation occurred prior to loading. The carrier recovered for damages and detention.
In charterparty cases, its application has been sporadic and unattended by any generally accepted principles. For the *euisdem generis* rule to apply, there must be sufficient indication of a category that can properly be described as a *class* or *genus*. The nature of the genus is gathered by implication from the express words which suggest it. Usually these consist of a list or string of substantives or adjectives.

In *Chandris v. Isbrandtsen*, the court refused to apply it to a provision in a charterparty which prohibited the shipment of “acids, explosives, arms, ammunition or other dangerous cargo” on the ground that there was no presumption to the effect that it should be applied and nothing in the context to show that it was intended to apply. In this case, the charterparty incorporated the provisions s.4 sub-s. 6 of the U.S. COGSA, which is identical with Art. IV of the Hague/Hague-Visby Rules, and with the knowledge of and consent of the master, but not of the owner, the charterer shipped turpentine, which is highly flammable. The ship was delayed 16 days beyond the lay-days. It was held that the charterers were in breach of contract in shipping the turpentine, since this was a dangerous cargo within the ordinary meaning of those words, and the meaning of the words was not restricted to cargoes like acids, explosives or ammunition.

On the question of whether turpentine was “like” any of the goods specified, it was found that turpentine was a volatile inflammable liquid. Its flash point was 90°-95°F, at which it gave off a vapour, which, with air in certain proportions, formed an inflammable and explosive mixture. Generally, the risk in the carriage of turpentine was inflammability rather than explosion, but in a confined place, if the temperature was sufficiently high, an explosion involving considerable concussion might result. It is in Class 3 of the IMDG Code. The chief danger in the carriage of acids was corrosion, though tainting of certain types of other cargo might also result. Turpentine did not cause corrosion, but could taint certain types of cargo. It was held that general words prima facie be considered as having their natural and larger meaning and not to be restricted to things *euisdem generis* with

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130 The *euisdem generis* rule has not been applied to the “q” clause exception of the Hague/Hague-Visby Rules Art. IV.2 in *Potts & Co. v. Union SS. Co. of New Zealand* [1946] N.Z.L.R 276, 286, where it was held that there was no genus or class encompassing the (a) to (p) exceptions in Art. IV.2. Consequently, it was held that the *euisdem generis* rule could not apply and that the words “any other cause” must be given their ordinary and natural meaning. Most authorities have also taken the view that the q-clause exception is to be construed broadly. Generally speaking, however, the Hague/Hague-Visby Rules exceptions must be interpreted restrictively. Tetley, *Marine Cargo Claims* (1988), 515 f.

131 Bennion, *Statutory Interpretation* (1997), 956.

132 [1951] 1 K.B. 240.

133 *Ibid.* at 246. Other charterparty cases, however, in the context of liberty clauses and lay-time exception clauses, have adopted the approach that the *euisdem generis* rule is generally applicable unless there is something in the language or the context to rebut this application. Cooke/Young/Taylor, *Voyage Charters*, (2001) 35. See Knutsford v. Tillmans [1908] A.C. aff’d [1908] 2 K.B. 385; Thorman v. Dowgate [1910] 1 K.B. 410.
E. Meaning of dangerous goods

those previously enumerated, unless there was something to show an intention so to restrict them.\textsuperscript{134}

The \textit{euisdem generis} rule might be explained by reasoning that the drafter, on working down the list, would keep this in mind when writing the general term at the end. It can be deduced that the final term was probably intended by the legislature to be limited to the terms in the list. In interpreting the rule, it is asserted that the drafter must be taken to have inserted the general words in case something which ought to have been included among the specifically enumerated items had been omitted or it is assumed that the general words were only intended to guard against some accidental omission in the objects of the kind mentioned and were not intended to extend to objects of a wholly different kind.\textsuperscript{135} The validity of this rule depends on the presumed competence of the drafter.

In \textit{Chandris v. Isbrandtsen-Moller}, it was said of commercial contracts, which are known to be frequently ill-drawn: “The presumption against surplusage is of little value in ascertaining the intention of the parties to commercial documents as many great commercial judges have recognized.”\textsuperscript{136} The same applies to enactments which are the subject of disorganized composition. However, where there is a “genus”, words should be given a relatively broad meaning but one that is limited to “genus”.

On the other hand, despite \textit{Chandris}, it was suggested that ‘any other goods of a dangerous nature’ is probably to be construed \textit{euisdem generis} with the goods specified before.”\textsuperscript{137}

\textbf{(b) Euisdem generis rule and Art. IV. 6 of Hague/Hague-Visby Rules}

Although not applying \textit{euisdem generis} might be justified on the basis that turpentine is included in the IMDG Code, the same cannot be said with regard to the purpose of the Hague Rules Art. IV.6 for kaphra beetles, whose mere danger was the fact that the shipment and voyage were to countries which imposed quarantine and an order for the destruction of the entire cargo.

The drafters of the Hague Rules were aware that that any cargo could be dangerous under certain circumstances. During the discussions, it was pointed out that very ordinary cargo may at some time be ignitable.\textsuperscript{138} However, Art. IV.6 was aimed at regulating not \textit{any} dangerous cargo but \textit{exceptionally} dangerous cargoes, particularly chemicals.\textsuperscript{139} Therefore, it is questionable whether one should extend the meaning of dangerous cargo under Art. IV.6 to any cargo causing damage, since the Article was originally intended to govern only exceptional dangers.

Art. IV.6 of the Hague/Hague-Visby Rules states “Inflammable, explosive or dangerous nature…”, e.g. chemical hazards. Indeed, goods in Classes 1 to 5 of the

\begin{itemize}
\item[\textsuperscript{134}] Chandris v. Isbrandtsen-Moller Co. Inc. [1951] 1 K.B. 240, 244 ff.
\item[\textsuperscript{135}] Bennion, \textit{Statutory Interpretation} (1997), 955.
\item[\textsuperscript{136}] Bennion, \textit{ibid.; Chandris v. Isbrandtsen-Moller Co. Inc.} [1951] 1 K.B. 240, 244.
\item[\textsuperscript{137}] Colinvaux, \textit{Carver’s Carriage by Sea} (1982) 846 fn. 84.
\item[\textsuperscript{138}] Sturley, \textit{Legislative History of the Carriage of Goods by Sea Act} (1990) Vol. 1, 272 f. \textit{Ibid.}
\item[\textsuperscript{139}] \textit{Ibid.}
\end{itemize}
IMDG Code are explosion and/or fire hazards.\footnote{Watt/Burgoine, “Know Your Cargo” [1999] 13(5) P&I Int’l 102.} Therefore, in this regard, Art. IV.6 is in conformity with the danger classification of the IMDG Code. Although the hazard classification of the IMDG Code is not limited to inflammability and explosivity, it would not be problematic to extend hazards to toxicity and corrosion, as they certainly fall under chemical hazards. However, what would be controversial is that the IMDG Code covers not only chemicals but some very ordinary cargoes which are not chemicals but may pose chemical hazards, such as coal or cotton. Moreover, it is highly difficult to justify under Art. IV.6 those bulk cargoes whose mere danger is to affect the stability of a vessel. However, it is at least clear that Art. IV.6 was intended to regulate exceptional dangers.

(2) Dangerous goods and inherent vice

(a) Inherent vice or defect defence

The inherent vice or defect of the cargo is one of the exculpatory exceptions most often relied on by carriers. The generally accepted definition of “inherent vice” in carriage of goods cases is the unfitness of the goods to “withstand the ordinary incidents of the voyage, given the degree of care which the shipowner is required by the contract to exercise in relation to the goods.”\footnote{Boyd/Burrows/Foxton, Scrutton on Charterparties (1996), 224; Tetley, Marine Cargo Claims (1988), 479 ff.} That means the risk of deterioration of the goods shipped as a result of their natural behaviour in the ordinary course of the contemplated voyage without the intervention of any fortuitous external event or casualty.

Hague-Visby Rules Art. 2(m) absolves the carrier from damages caused by “wastage in bulk or weight or any other loss or damage arising from inherent defect, quality or vice of the goods”. The carrier is not liable for damage caused by the nature of the cargo itself; however, he is not excused from exercising due care to preclude or minimize loss or damage resulting from this exception.\footnote{Thus, where the carrier is cognizant of the perishable nature of the cargo, it may be required to exercise greater care than that required for non-perishable cargo. Each case must be decided on its particular facts.}

It should be pointed out that the official French version of the Hague Rules uses the term “vice caché” which means “hidden defect” and “vice propre” which means “inherent vice”.\footnote{Tetley, Marine Cargo Claims (1988), 479. The official French text is: “4(2)(m) de la freinte en volume ou en poids ou de toute autre perte ou dommage résultant de vicé caché, nature spéciale ou vice propre de la merchandise.” The provision makes it clear that the exception refers to both hidden defect and inherent vice.} Accordingly, an inherent vice is one which is an innate or natural or normal quality of the goods. For instance, it is an inherent vice of flour that it shrinks and loses weight with the elapse of time. On the other hand, a hidden defect is something that is hidden and defective in the cargo and not nor-
mally expected to be found there, although the cargo may have the propensity to attract such defect such as infestation of flour by tiny larvae.\footnote{The composite inherent defect as erroneously enunciated in the English translation of the Hague Rules has become commonplace in jurisprudence. It is, nevertheless, suggested that “inherent defect” covers both “hidden defect” and “inherent vice”. Tetley, \textit{Marine Cargo Claims} (1988) 480.} \\

This exemption embodies the equitable principle that the carrier should not be liable in the absence of fault. The theory and policy of the exemption is that the shipper rather than the carrier should know the inherent characteristics of the goods shipped and should have the responsibility of guarding against loss or damage.\footnote{Schoenbaum, \textit{Admiralty and Maritime Law} (2004) Vol. 1, 704 f.}

\textbf{(b) The overlap of dangerous goods obligation and inherent vice defence} \\

In some situations, the facts which allow for the consideration of a cargo as dangerous goods may also be analyzed as an application of the inherent vice defence. A cargo of coal which spontaneously combusts may damage the ship and other cargo, so as to give the carrier a cause for action under the dangerous goods obligation. At the same time, if the suit is brought by the cargo-owner for loss or damage to the coal, the carrier may plead in his defence the exception of inherent vice.\footnote{Greenshields, Cowie v. Stephens [1908] A.C. 431, where maize sprouted; \textit{The Amphion} [1991] 2 Lloyd’s Rep.101, where fishmeal heated; \textit{Accinanto} v. Ludwig [1953] 1 Lloyd’s Rep. 38, where ammonium nitrate fertilizer spontaneously combusted.} It appears that the obligations implied by common law regarding dangerous goods and the common law defence of inherent vice originate from the same source; thus, in some cases, the two doctrines may overlap.\footnote{Abdul Hamid, \textit{Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure} (Diss. Southampton 1996), 40.}

\textbf{(c) Distinction between dangerous goods and inherent vice or defect} \\

The distinction between goods which are of a dangerous character and goods which merely suffer from inherent vice is not always easy to draw, yet it is important. It is asserted that inherent vice constitutes a defence to a claim for damages arising out of loss or deterioration in the course of carriage but it does not itself involve any breach of duty by the shipper.\footnote{Cooke/Young/Tailor, \textit{Voyage Charters} (2001), 152.} Accordingly, where the condition of the goods on shipment is such that they are liable to cause injury to persons or damage to the ship or other goods, or even serious delay to the voyage, they fall within the category of dangerous goods.\footnote{\textit{Ibid.} at 153.}

This assertion, however, is doubtful, because whether a particular commodity suffers from an inherent vice is a mixed question of law and fact.\footnote{Schoenbaum, \textit{Admiralty and Maritime Law} (2004) Vol. 1, 704.} The determination of the applicability of inherent vice or defect exception often turns
on the burden of proof. The carrier cannot rely on the excuse that the loss has been due to an inherent weakness of the goods unless he has used such care with them as their nature demanded.\textsuperscript{151} Moreover, where a loss which may be traced to an inherent quality or defect of the goods has arisen not from the ordinary development of that quality or defect, but from adventitious causes introduced by the carrier, the inherent vice defence does not apply.

Furthermore, the inherent vice defence relates to insect infestation of food cargo; particularly grain is one of the most difficult applications of inherent vice. The issue is generally determined on a case-by-case basis, depending on whether the insect infestation occurred or worsened as a result of the carrier’s negligence or before the shipment.\textsuperscript{152}

Fishmeal is a good example of cargo which may fall under both inherent vice and dangerous cargo. Fishmeal is listed in the IMDG Code. When fishmeal causes damage to a shipment, it is not correct to say from the outset that it was due to the dangerous nature of fishmeal. As explained in Part 4, the shipper is not liable for “shipping dangerous goods” but “shipping dangerous goods without informing the carrier of the dangerous nature of the cargo.” In most cases, the carrier will know that he is shipping fishmeal and so liability for damages arising from the shipment of fishmeal will depend on the facts of the case, i.e. whether it was properly prepared for the shipment or not. If improperly handled, that will be the fault of the shipper. In the same way, improper and careless handling by the carrier will be the fault of the carrier.

In principle, there might seem to be no good reason in drawing a distinction between damage such as that arising in inherent defect cases and in the shipment of dangerous cargo.\textsuperscript{153} However, as a different standard of liability is applied, there should be a difference between dangerous goods and ordinary goods which may cause damage.

\textbf{ii) Basis of liability for delay}

With regard to cargo damage, cargo which is delayed although not physically damaged may suffer loss in value because of a fall in the market price. Histori-

\textsuperscript{151} Colinvaux, \textit{Carver Carriage by Sea} (1982) Vol. 1, 15.

\textsuperscript{152} The infestations which occur in ships originate either in the commodity before loading or from cross-infestation from residues of previous cargoes or other infested cargoes being carried. The condition of goods prior to loading is a consideration in proving inherent vice or defect. It is often difficult, however, to determine the precise origin of particular infestations and the issue is generally determined on a case- specific basis. Little or no idea can be obtained about the propensity of a cargo to infest, sprout etc. by watching it being loaded onto the ship, and the likelihood of inherent defect arising can only be assessed after obtaining information as to the origin of the grain, the conditions under which it has been handled and stored, and its heat, moisture etc. content, all of which are usually more accessible to the shipper than to the carrier. The reason is that this procedure is more difficult to prove rather than holding the shipper strictly liable by applying Art. IV.6.

\textsuperscript{153} Cooke/Young/Tailor, \textit{Voyage Charters} (2001), 153.
cally neither maritime law nor marine insurance recognizes claims for delay because of the inherently dangerous unpredictable nature of maritime commerce.\textsuperscript{154} Likewise, neither the Hague nor the Hague-Visby Rules refer specifically to delay. The question was left to national laws.\textsuperscript{155} The word “damage” appears in different articles: damage Art. 3 (6); Art. 4 (1), (2),(3),(4), damage in connection with goods (Art. 3(8)), damage or in connection with goods (Art. 4(5) and(6)). In common law, “damage or in connection with goods” was interpreted as covering not only cases of physical damage but also delay,\textsuperscript{156} whereas in Continental law, contracting states incorporated the expression “loss or damage” in Art. 4(1),(2), and (4) into their domestic legislation as “loss of or damage to goods” and interpreted it as “physical damage.”\textsuperscript{157}

Today the oceans of the world are not considered as dangerous and damages for delay in delivery are awarded on occasion. In English law, in general, even when there is no physical damage or deterioration, damages for loss of market caused by delay in the delivery of the cargo would be recoverable if the carrier knew or could be expected to have known the peculiarities of the cargo at the time of contracting or if special circumstances were communicated to the carrier.\textsuperscript{158}

Under the Hamburg Rules Art. 5.1, the carrier can be liable for delay in delivery. Delay in delivery is defined in Art. 5.2 as occurring when the goods have not been delivered at the port of discharge within the time agreed in the contract of carriage. Art. 5.2 continues by reference to the time which it would be reasonable to require of a diligent carrier, having regard to the circumstances of the case. The provisions on delay were rather controversial and carriers feared open-ended liability. Furthermore, Art. 6.1 (b) provides a special limit of liability that is not more than two and half times the freight payable on the delayed cargo.

Under these circumstances, it is hard to justify extending the meaning of dangerous goods which only cause delay or detention on the basis of strict liability, whereas the carrier’s liability for delay applies under certain circumstances and is subject to limitation and, more importantly, on the basis of fault liability.\textsuperscript{159} In the shipping business, time is money. Due to new security regulations,\textsuperscript{160} delays are a fairly new area of disputes. Under Hague/Hague-Visby Rules there is still scope

\footnotesize{\textsuperscript{154} Tetley, \textit{Marine Cargo Claims} (1988), 309.}  
\footnotesize{\textsuperscript{155} Sturley, \textit{Legislative History of the Carriage of Goods by Sea Act} (1990) Vol. 1, 498, 514.}  
\footnotesize{\textsuperscript{156} Sturley, \textit{Legislative History of the Carriage of Goods by Sea Act} (1990) Vol. 3, 205; Schoenbaum, \textit{Admiralty and Maritime Law} (2004) Vol. 1, 734; Colinvaux, \textit{Carver Carriage by Sea} (1982) Vol. I, 311 ff.}  
\footnotesize{\textsuperscript{157} Karan, \textit{The Carriers Liability under the International Maritime Conventions the Hague, Hague-Visby, and Hamburg Rules} (2004), 217 f.}  
\footnotesize{\textsuperscript{158} \textit{Hadley v. Baxendale} (1854) 9 Ex.C.341, 156 E.R. 145; Gaskell/Asariotis/Baatz, \textit{Bills of Lading: Law and Contracts} (2000), 342; Tetley, \textit{Marine Cargo Claims} (1988), 309.}  
\footnotesize{See infra Part 4 and 5.}  
\footnotesize{See infra Part 3.}
for liability for delay outside the ambit of Art. IV.6 under Art. IV.3. Why should the carrier be in more favourable position? Why should the carrier be in more favourable position?

**b) Meaning of dangerous in American law**

Although the definition of what constitutes a dangerous cargo is somewhat elusive, American law on dangerous goods deals more with cargoes which may cause physical damage rather than legal obstacles. Cargoes listed in the 49 CFR 171-180 or 46 CFR 146-154, 173 and the IMDG Code and other codes are deemed to be dangerous in general. However, equally important are the facts of the cases. The carrier’s knowledge of the dangerous nature of the cargo is of great importance in determining liability. As in English law, bulk cargoes creating stability dangers are often considered in dangerous cargo cases. From the extensive list of regulations, particularly coal, fishmeal, turnings and borings have been the subject matter of dangerous cargo cases in which they have caused damage.

**aa) Dangerous because different from contractual description**

As in English law, cargo may be dangerous if it is different from the one described. In the *Santa Clara* case, copper concentrates were loaded instead of

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161 Steel, “Dangerous Beetles in the House of Lords – Shippers Absolutely Liable” [1998] (2) *IJOSL* 119, 120.

162 The CMI/UNCITRAL draft instrument Art. 27 obliged the shipper to provide the carrier with the necessary information, instructions and documents. According to Art. 28, this information, instructions and documents must be accurate, complete and timely. The shipper’s liability for failure to comply with these obligations is strict. However, why the shipper should be liable, irrespective of his own fault, for failure to provide any such information, instructions or documents or for delay is not clear. Asariotis, “Main Obligations and Liabilities of the Shipper” [2004] *TranspR* 284, 290. Later on, Art. 27 became 30 and Art. 31 was drafted, including in parentheses a reference to delay as a basis of liability of the shipper. A/CN.9/WG.III/WP.56. However, the issue of delay was particularly problematic as a basis for the shipper’s liability, since it could expose the shipper to enormous and potentially uninsurable liability. A/CN.9/591 parag.143 ff. See *infra* p. 210 f.

163 *Pitria Star Navigation Co. v. Monsanto Co.* 1984 WL 3636 (E.D.La 1984), *The Stylianos Restis* 1974 AMC 2343 (S.D.N.Y 1972), *Poliskie Line Oceanic v. Hooker Chemical Corp.* 499 F.Supp. 94, *International Marine Development Corp. v. Lakes Shipping and Trading Co. (The M/V Gitia)* (1975) S.M.A No: 931, *Conti Shipping v. Bomar Resources Inc. (The Continental Trader)* 1986 S.M.A No. 2211, *Tramp Shipping Co., Julianne Shipping Corp. v. Amalgamtion Inc. (The M.V. Kapetan Antonis)* 1988 S.M.A. 2516, *ente Nazionale per l’Energia Elettrica v. Balwag Navigation Inc.* 605 F.Supp. 355, *Colormaster Printing Ink Co. v. S.S.Asiafreighter* 1991 WL 60413 (S.D.N.Y), *Ionmar Compania Naviera S.A v. Olin Corp*, 666 F.2d 897, *Borgships Inc. v. Olin Chemicals Group* 1997 WL 1241127 (S.D.N.Y), *United States v. M/V Santa Clara I*, 887 F.Supp. 825. *A/S Gyldf v. Hyman-Michaels Co. (The Gylda)* 304 F.Supp. 1204, 1971 AMC 2041, *Pt. Karana Line v. Eddie Steamship Co. Ltd. (The Kartini,)* (1984) AMC No. 1958, *Boykin v. China Steel Corporation*, 73 F.3d 539, 1996 AMC 920 (4th Cir. 1996).

164 281 F.725 (2d Cir. 1922).
copper ore. The vessel became unseaworthy because the stowage and securing of the cargo was insufficient. The cargo was dangerous, as it was different from the one described. Similarly, in Boykin v. China Steel Corporation, the cargo of coal was incorrectly described as being Category A (the most common type of coal, which is not dangerous) when, in fact, it was Category B, a highly volatile coal. The cargo was found to be dangerous.

bb) Goods which become dangerous under special circumstances

A cargo which is not dangerous per se can become dangerous due to a special set of circumstances. For instance, in Narcissus Shipping Corp. v. Armada Refeers, Ltd the cargo carried was orange juice which was packed in plastic bags and then loaded into plastic drums. The drums were shipped as break bulk cargo secured by stanchions. The vessel experienced a severe list. It was held that a voyage charterer was liable because of his failure to inform the owner, master or time charterer of the dangerous properties of the cargo. However, generally solid bulk cargoes those affecting the stability of the ship fall under this heading.

In Sucrest Corp. v. M/V Jennifer, the vessel had a cargo of sugar which shifted during the voyage because of a biological degradation of the cargo. The vessel developed a severe list and the master intentionally went aground in order to save the vessel and her cargo. The casualty was the first instance in which the maritime or scientific community learned of the thixotropic properties of raw sugar. Similarly, in P. Brown Jun. & Co. v. Minas de Matahambre (The Nord Amerika), the cargo of copper concentrate became colloidal when an excess amount of moisture and oil separated. The cargo, therefore, shifted and caused the vessel to list, forcing it to seek refuge. Arbitrators concluded that “although copper concentrate per se is not dangerous cargo, such colloidal state is both dangerous and injurious within the terms of the NYPE Time Charterparty.”

By contrast, in Westchester Fire Ins. Co. v. Buffalo Housewrecking & Salvage Co., a barge was destroyed by fire when its cargo of turnings and borings overheated. The bill of lading contained the provision that the shipper should be liable in the event that the cargo was dangerous, unless full written disclosure of its character was made to the barge owner. In dealing with the threshold issue of whether the cargo was dangerous, the court stated that, although listed in Class 4 of the IMDG Code, turnings are not considered to be explosives or dangerous, but are well-known articles of commerce. The findings of the Bureau of Explosives read that “iron turnings, borings, filings, when in large bulk, have a fire hazard as

165 73 F.3d 539.
166 950 F.Supp. 1129.
167 Ibid. at 1143.
168 855 F.Supp. 371.
169 Likewise the charterer had no actual or constructive knowledge of the inherent dangers of the cargo as the cargo of bulk raw sugar. Ibid. at 385.
170 1931 A.M.C 1637.
171 Ibid. at 1642 f.
172 40 F.Supp. 378.
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 (Interstate Commerce Commission) Regulations and material is accepted by steamship companies.” The court noted that turnings may become dangerous if they contain an excessive amount of moisture or waste material. As the turnings were dry and free of waste materials when loaded, they were not dangerous.\(^\text{173}\)

On the other hand U.S. courts did not have any occasion to consider the aspect of the *Giannis NK*, i.e. ground-nut extraction meal pellets could constitute dangerous goods under Art. IV.6 of Hague/Hague-Visby Rules.\(^\text{174}\) It will be interesting to see U.S. courts attitude on the similar case.

**cc) Goods may be dangerous even if not listed in the regulations**

A cargo may be deemed dangerous although it is not listed in the regulations. In *Borgships Inc. v. Olin Chemicals Group*,\(^\text{175}\) a cargo of “dichloroisocyanuric acid salts dehydrate (“SDIC”)” was shipped. SDIC was specifically excluded from the list of hazardous materials subject to Hazardous Materials Regulations (HMR).\(^\text{176}\) Moreover, the shipper affirmatively identified the SDIC material as “non-hazardous” on the bill of lading information it gave to the carrier. The vessel encountered heavy weather while at sea. A number of containers were lost overboard and some of the remaining containers, including the one with the SDIC, were welded together to prevent loss. On arrival, the ship’s crew used a blow torch to cut the containers free and allow their offloading. During the cutting operation, the SDIC in the container ignited, causing a fire and a large amount of smoke. The port and local businesses recovered on nuisance claims against the carrier. The carrier sought recovery from the shipper. The court concluded that “compliance with DOT regulations does not satisfy, as a matter of law, a shipper’s duty to warn”; and the cargo was found to be dangerous.\(^\text{177}\)

By contrast, in the *Internav Ltd. v. Scanbulk Ltd. (The Wismar)*\(^\text{178}\) case, the owner instructed the master to refuse the loading of direct reduced iron-ore pellets (DRIP). It was concluded that in determining whether DRIP was in fact dangerous cargo, IMO and U.S. Coast Guards regulations were especially relevant since those were regulatory bodies expressly referred to in the charter. Because DRIP

\(^{173}\) Ibid. at 382.

\(^{174}\) Robertson/Sturley, “Recent Developments in Admiralty and Maritime Law at the National Level and in the Fifth and Eleventh Circuits” [2003] 27 Tul. Mar. L.J 495, 520 f.

\(^{175}\) 1997 WL 124127 (S.D.N.Y).

\(^{176}\) Although 49 C.F.R §§ 171.1 (that was in force at that time) list “dichloroisocyanuric acid salts” as hazardous, the regulations specifically excluded SDIC from the list of hazardous materials: “The dehydrated sodium salt of dichloroisocyanuric acid is not subject to the requirements of this subchapter”. 49 C.F.R § 172.102. The IMDG Code also excluded SDIC from its requirements. 1997 WL 124127 at 1.

\(^{177}\) 1997 WL 124127 at 4.

\(^{178}\) SMA 1454 (Arb. at N.Y 1980).
was neither listed in the IMDG Code nor mentioned by U.S. Coast Guard regulations, it was held that DRIP was not dangerous.

However, in the recent *Senator Linie GmbH. & Co. KG v Sunway Line, Inc.* case, TDO, a white, odorless powder used as a reducing agent and in the bleaching of protein fibers, was carried on the *Tokyo Senator*. At the time of shipment, TDO was not named as a hazardous or dangerous cargo in the IMDG Code or in the HMR. The TDO shipment was not listed on the *Tokyo Senator*’s hazardous cargo manifest. It was not until 1998 that TDO was specifically listed as a dangerous material in the IMDG Code and not until 1999 in the Hazardous Materials Regulations. TDO, however, was held to be dangerous.

c) Meaning of dangerous in German law

aa) Definition of dangerous goods in GGBefG

HGB § 564b reflects Art. IV.6 of the Hague/Hague-Visby Rules regulating the liability of the shipper when shipping dangerous goods. As in the Hague/Hague-Visby Rules, § 564b provides only for “…inflammable, explosive, or other dangerous goods…” and does not define dangerous goods either.

It is, therefore, unclear which goods, besides explosives and inflammables, fall under § 564b. GGBefG defines dangerous goods as “goods which due to their nature, character or states associated with transport are considered dangerous for public safety or order, particularly for general public, important public properties, life and health of human as well as animals and objects”. It is, however, controversial whether this broad definition of dangerous goods would be applicable in § 564b, because such a definition covers any type of cargo which, although not intrinsically dangerous, may cause danger under certain circumstances. While some authors are of the opinion that the definition of GGBefG is applicable for the purpose of § 564b, general opinion rejects the adoption of the definition in GGBefG for the purpose of § 564b due to its broad extent.

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179 291 F.3d 145, 2002 A.M.C. 1217.
180 In *Colormaster Printing Ink v. S.S. Asiafreighter*, 1991 WL 60413 (S.D.N.Y), there was a cargo of “arsine” gas, which is not specifically listed in the HMR, but comes under ‘N.O.I.’ ‘N.O.I’ denotes ‘not otherwise indicated’ and is used to label explosive or otherwise dangerous material not specified in the HMR. As a poisonous and dangerous commodity, it is recognized as falling within the category of Class A poisons. A chart in the HMR indicates that packages containing Class A poisons must be labelled with a “poison gas” label and be stowed “on deck under cover”. Therefore, it was negligence to fail to label the container properly and to fail to state on the transfer receipt that the container held dangerous cargo.
181 291 F.3d 145, 152 f.
182 GGBefG § 2(1)
183 Trappe, “Haftung beim Transport gefährlicher Güter im Seeverkehr” [1986] VersR 942, 944.
184 Rabe, *Seehandelsrecht* (2000), 444; Gündisch, *Die Absenderhaftung im Land- und Seetransportrecht* (1999), 193.
bb) General or concrete dangerous nature of the goods

In general, in the sense of HGB, dangerous goods are deemed goods which due to their general physical or chemical properties may damage ship or other property. This view employs general/concrete criterion to distinguish between dangerous and non-dangerous goods. Accordingly, a danger arising from a particular state of non-dangerous goods is not sufficient for them to be deemed dangerous goods. To be dangerous, danger should be inherent in the nature of the good.

On the other hand, a contrary view approaches the “general/concrete” criterion as a “general/concrete dangerous” criterion, e.g. “a concrete danger” can be created by cargo which is not dangerous. Wholly harmless cargo, such as straw or cotton, if carried at a high temperature and in a moist state, can be dangerous due to their tendency to inflammability. For instance, sulphur chips which corroded the equipment of the ship; bisulfate which was declared as rock salt on the bill of lading and damaged the ship; and raw anthracene which in hot weather released oily, penetrating fluid and thus polluted ship’s holds were deemed to be dangerous cargoes. Moreover, in many cases coal and briquettes which self-heated and caused damage were also found dangerous within the meaning of § 564b. However, it is thought it is doubtful if the same applies in cases where an organic substance such as cotton or tapioca spontaneously ignites at high temperature in combination with moisture. It is contended that the application of § 564b in such a case is hardly justified.

On the other hand, the Court of Appeal held that highly moist zinc residue which became colloidal and caused the danger of capsizing the ship “Neuwarder Sand” was not dangerous on the ground that it did not have general properties to exceptionally damage the ship or other cargo; but only particular loading endangered the safety of the ship due to its high moisture content. Similarly, in “Viking Bank”, excessively moist calcium fluoride concentrate was held not to be

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185 Ibid.
186 The “general/concrete” criterion was first used by Gramm in 1938. Gramm, Das neue deutsche Seefrachtrecht nach den Haager Regeln (1938), 103.
187 Trappe, “Transport gefährlicher Güter, Unfallursachen und beteiligte Ladungen” [1988] TranspR 396 399.
188 RG, HansGZ 1916, No. 9. Although sulphur chips were dangerous, the shipper was not liable as he declared the cargo and its corrosive properties. However, it is asserted that according to the general/concrete criterion, disulfide should not have been classified as dangerous, because bisulfide in a dried state is not dangerous. Gündisch, Die Absenderhaftung im Land- und Seetransportrecht (1999), 195.
189 RGZ 93, 163.
190 BGH 75 VersR 824.
191 RG 170, 133.
192 Rabe, Seehandelsrecht (2000), 445. This is not to say that shippers of such goods are not liable, but rather that liability is assessed according to §564.
193 BGH 11.3.1974 (II ZR 45/73, Düsseldorf); 74 VersR 771.
194 Namely it must be proved whether the high moisture content of the cargo was known or ought to have been known by the shipper.
dangerous cargo in the sense of § 564b. It must be noted that this is not to say that
the shipper was not liable.\footnote{German law distinguishes between ordinary cargo and
dangerous cargo, but requires
the shipper of both cargoes to give notice of the characteristics of the cargo. The
difference is the standard of liability, i.e. the former is subject to fault-based liability,
the latter to strict liability. See \textit{infra} Part 4.} In these cases, the shipper’s liability was established
on the ground of fault under § 564 instead of application of the special dangerous
cargo provision § 564b, which provides for strict liability.\footnote{Hamburger Schiedspruch v. 25.2.1986, Trappe, “Haftung beim Transport gefährlicher
Güter im Seeverkehr” [1986] \textit{VersR} 942, fn. 9.}

It is also to be noted that by contrast to English law cargoes which damage
other goods due to contaminated or infested state or drenching the other goods due
to damaged container is not sufficient to be regarded dangerous.\footnote{Rabe, \textit{Seehandelsrecht} (2000), 445.} It is because in
such cases danger arises from concrete state of individual case rather than general.

\textbf{cc) Goods listed in the regulations on the transport of dangerous
goods}

Although the inconsistency of jurisprudence creates uncertainty, it is at least clear
that goods listed in GGVSee which implements the IMDG Code and other codes,
are considered dangerous and likewise fall under § 564b.\footnote{\textit{Ibid.} at 444; Gündisch, \textit{Die Absenderhaftung im Land- und Seetransportrecht} (1999),
195 f.} Therefore, although
seemingly innocuous, cargoes such as straw, hay, dry vegetable fiber cotton flax,
hemp, jute, sisal, matches\footnote{Class 4.1 of the IMDG Code.} or coal, oily cotton scrap, wet cotton, moisture
vegetable fibers and fishmeal\footnote{Class 4.2 of the IMDG Code.} are classified as dangerous due to their tendency
to inflammability or self-heating properties in the IMDG Code. Furthermore,
GGVSee is deemed an important indicator for § 564b. In general, therefore, it
cannot be concluded that goods which the aforementioned Regulations do not deal
with also fall under § 564b.\footnote{Abraham, \textit{Das Seerecht in der Bundesrepublik Deutschland} (1978) 1. Teil, 526.}

However, what is not clear is whether the cargoes whose mere danger is the ef-
fect on stability are to be considered dangerous or not. GGVSee § 2(2) set out
which cargoes are considered to be dangerous for the purpose of the Regulations.
Accordingly, dangerous bulk substances are those which are classified as danger-
ous in the BC Code.\footnote{GGVSee Art. § 2(2).2.} Cargoes in solid form in bulk are considered dangerous
which are covered by the IMDG Code,\footnote{SOLAS Chap.VII.A-1.7.} namely cargoes listed in Appendix B of
the BC Code, which pose chemical hazards, but not those in Appendix A and C,
which affect the stability of the ship. Thus, this is an aspect to be considered.
d) Meaning of “dangerous” in the CMI/UNCITRAL draft instrument on the carriage of goods

aa) No distinction between dangerous and non-dangerous goods

In contrast to the Hague-Visby Rules, the original draft instrument contained no specific reference to dangerous goods. The draft instrument lifted the distinction that current conventions make between dangerous cargo and ordinary cargo. Such a distinction was considered out of date, because the notion “danger” has acquired a more relative character nowadays in the light of existing case law. Instead, the shipper is obliged to ensure that the goods “will withstand the intended carriage ... and will not cause injury or damage”.

bb) Drafting specific provision dealing with dangerous goods

However, during the later discussions a proposal was made for the replacement of Draft Articles 29 and 30, that govern the right and liability of carrier and shipper towards each other by a provision which also mentions specifically dangerous goods. As to the substance of the proposal under which the shipper should inform the carrier of the dangerous nature of the goods and of the necessary safety measures, a concern was expressed that the proposed rule might be unnecessary and its effect uncertain, unpredictable and excessively onerous for the shipper, particularly in view of existing case law in a number of countries, under which goods, although not identifiable as dangerous before carriage, could later be declared dangerous by courts adjudicating the claim, for the sole reason that they had caused the damage. The view was expressed that the issue of dangerous goods was sufficiently covered in the draft instrument, for example in Draft Art. 12 and 27 which appropriately avoided using the notion of “dangerous goods” itself.

204 Van der Ziel, “The UNCITRAL/CMI Draft for a New Convention Relating to the Contract of Carriage by Sea” [2002] TranspR 272.
205 Draft instrument Art. 25. Draft instrument available at <www.uncitral.org>.
206 Proposal provided that “.... 2. If the shipper has delivered dangerous goods to the carrier or the sub-carrier without informing the carrier or sub-carrier of the dangerous nature of the goods and of necessary safety measures, and if the carrier did not otherwise have knowledge of the dangerous nature of the goods and the necessary safety measures to be taken, the shipper is responsible for the damage or loss sustained by the carrier.” A/CN.9/552 para. 139.
207 Draft instrument contains 2 two different variations of Art. 12: Variant A. “Notwithstanding articles 10, 11, and 13(1), the carrier may decline to load, or may unload, destroy, or render goods harmless or take such other measures as are reasonable if goods are, or reasonably appear likely during its period or responsibility to become a danger to persons or property or an illegal or unacceptable danger to the environment.” Variant B “Notwithstanding articles 10, 11, and 13(1), the carrier may unload, destroy or render dangerous goods harmless if they become an actual danger to life or property”.
208 Art. 27 provides “The shipper shall provide to the carrier the information, instructions, and documents that are reasonably necessary for: (a) the handling and carriage of the goods, including precautions to be taken by the carrier or performing party (b)
The discussion focused on the definition of dangerous goods. It was generally felt that, should a provision expressly referring to the notion of dangerous goods be retained, a definition should be provided in the draft instrument.\textsuperscript{209} The only possible reference was said to be the definition in the international Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious substances (HNS) by Sea, but considerable doubts were expressed regarding the appropriateness of introducing such a definition in an international trade law instrument. Support was also expressed for addressing in the definition the issue of goods that became dangerous during carriage.

In conclusion, it was decided that a specific provision should be inserted at an appropriate place in the draft instrument to deal with the issue of dangerous goods, based on the principle of strict liability of the shipper for insufficient or defective information regarding the nature of the goods.\textsuperscript{210} Upon this decision a provisional Draft article on dangerous goods was drafted, based on the definition provided in the HNS Convention.\textsuperscript{211}

With regard to the provisional Draft article based on the definition in the HNS Convention, a majority of the delegations stated that they preferred either no definition at all or a more general and simplified definition than that proposed.\textsuperscript{212} The reason for not using the definition in the HNS Convention was that the HNS Convention fulfils a public interest, i.e. protecting the environment and third parties, rather than a private one, and that a technical definition like this one always runs the risk of soon being out of date.\textsuperscript{213} Those who preferred a general definition indicated that a general definition might inhibit the courts from applying varying interpretations of the notion of dangerous goods and so promote uniformity.\textsuperscript{214} It was also suggested that a definition of dangerous goods should also clarify whether illegal cargo, such as contraband, would fall under this category.\textsuperscript{215} The Secretariat proposed a more general definition in Article 33.1, which provides that:\textsuperscript{216}

“Dangerous goods” means goods which by their nature or character are, or reasonably appear likely to become, a danger to persons or property or an illegal or unacceptable danger to the environment.\textsuperscript{217}

\textsuperscript{209} A/CN.9/552 p. 33 f.
\textsuperscript{210} A/CN.9/552 pp.33-34
\textsuperscript{211} A/CN.9/WG.III/WP.39, para.19. See HNS Convention Art.1.5 in appendices.
\textsuperscript{212} A/CN.9/WG.III/WP.55 para.32.
\textsuperscript{213} Ibid.
\textsuperscript{214} Ibid.
\textsuperscript{215} A/CN.9/591 para.158.
\textsuperscript{216} A/CN.9/WG.III/WP.56 p. 31.
\textsuperscript{217} After discussions it was decided that the words “or an illegal or unacceptable danger” should be deleted since they failed to add meaning to the term “danger to the environment”. A/CN.9/591 para.160 f.
F. What should be considered dangerous?

I. Nature of the goods

The foregoing examination of three legal systems shows that the concept of dangerous cargo is unclear, controversial and vague. Goods can cause various sort of damage in many different situations in sea carriage. Goods may physically damage the ship and other goods on board or may cause non-physical damage and other extra costs. In both situations, the incurred damage can be quite substantial and the ensuing legal issues highly complex.

From the point of view of the carrier, dangerous goods are goods which pose unforeseeable hazards to the ship and cargo. It follows from case law that whether the goods are dangerous or not is subject to an individual evaluation of the occurrence. The court looks at many different factors and it is not sufficient that the goods in question are generally considered dangerous. Virtually each legal system is inconsistent in its jurisprudence and this creates uncertainty.

The problem of “what a dangerous good is” can be approached either as one of category or as an integral part of the larger question of sharing risk. In a sense, it is always an aspect of that larger question, but to isolate it from the rest carries the danger that it will be the goods which are focused on. Although the knowledge of the carrier and the taking of necessary precautions regarding the dangerous nature of the goods are important factors in allocating liability, using this method to determine whether a good is dangerous or not would not be proper. That is because this approach covers all types of goods, whatever dangers they may create, and treats the category of “dangerous goods” as at most non-existent and at least immaterial.

It is obvious that any goods may be dangerous or may be regarded as dangerous under certain circumstances, whether or not they are within the codes or may qualify to be within the codes. Any good likewise requires special attention and proper packing; if that is not done, a “dangerous situation” may be created. Moreover, any goods may cause delay or detention due to stringent safety and security regulations. However, it seems that the purpose of the specific provision is to govern “dangerous cargoes” rather than “dangerous situations” and for the latter, general provision is thought to be sufficient protection.

II. Public regulations private liability

Public regulations and private liability might seem odd at first glance, but the main reason for regulating dangerous goods specifically for the purpose of carriage

218 Jackson, “Dangerous Cargo – A Legal Overview” in Maritime Movement of Dangerous Cargoes – Public Regulations Private Liability, Papers of One Day Seminar (1981), A8.

219 Ibid. at A10.
contracts are the safety concerns with the ship, crew and cargo onboard. Therefore one cannot ignore the role of public regulations in this field and the link between regulations and liability in contracts. If there were no safety concerns, there would probably not be any specific rules on dangerous goods. A general liability scheme would be sufficient to allocate damages and expenses.

III. Goods listed in the IMDG Code and other codes

Without a certain category of dangerous goods, uncertain and unpredictable outcomes are unavoidable. While protecting public safety, the IMDG Code also serves this aim. Despite the fact that legal systems have inconsistency with regard to what constitutes dangerous cargo, cargoes listed in the IMDG Code, or in domestic laws implementing the IMDG Code and other codes, are deemed to be dangerous. However, under the set of circumstances when the shipper is not liable, a false impression is created that despite the fact that cargo is listed in the codes, it is not dangerous. Commonly transported dangerous goods are listed in the DGL. The DGL provided by the IMDG Code and other codes are not exhaustive. This is also expressly mentioned in the codes. Therefore, DGL is not taken to be exclusive in the sense of relieving the shipper of liability if he has come across some new kind of cargo, not listed in the IMDG Code, which has manifestly dangerous characteristics or insufficient or improper instructions, such as stowage. It is the onus of the shipper to identify the nature of the cargo and take the necessary precautions accordingly.

Many cargoes listed in the IMDG Code or other codes are inherently dangerous, although damage arising from dangerous cargoes is not always a result of the intrinsic nature of the cargo. The damage is often a combination of outside influences and some inherent nature of the cargo itself. Likewise, the IMDG Code includes wholly innocuous cargoes, such as cotton, which under certain circumstances can become highly dangerous. However, nobody suggests that the shipper is strictly liable for the shipment of cotton cargo in the case of damage thereto.

IV. Dangerous goods in bulk

Traditionally maritime transport of dangerous cargoes was limited mainly to packaged consignments. However, limiting dangerous cargoes only to packaged cargo ignores the fact that gases and liquid chemicals are carried in bulk, which is obviously dangerous. Considering the IMDG Code as the sole indicator of dangerous cargoes would lead to confusion as other codes govern bulk dangerous cargoes.

220 Tiberg, “Legal Survey”, in Grönfors (ed.), Damage from Goods (1978), 9, 17.
221 In re M/V Harmony and Consolidated Cases 394 F.Supp.2d 649.
222 For instance, improper stowage when two incompatible goods are stowed next to each other, which creates danger. The damage would not have occurred if it was not for this improper stowage.
National legislations, likewise, generally cover both packaged and bulk as dangerous. Thus, substances included in the IBC, IGC and BC codes posing chemical hazards, with the exception of Appendix A and C of the BC Code, should be deemed dangerous for the purpose of carriage contracts. The differences between packaged and bulk dangerous goods is that while there are thousands of packaged dangerous goods and mostly their dangerous character is unknown, the number of bulk dangerous goods is rather limited and their dangerous character generally well known in the trade.

V. Is the effect on stability a danger?

Grain cargoes and cargoes in Appendixes A and C of the BC do not pose a hazard in the classification of the IMDG Code, but due to biological degradation they may affect the stability of a vessel. It is obvious that Art. IV.6 of the Hague/Hague-Visby Rules was aimed at regulating exceptionally dangerous goods, particularly chemicals. Therefore, a danger to the stability of the vessel, although exceptional, is hardly justified as falling under Art. IV.6.\footnote{223} This is an aspect to be considered. It is to be noted that not deeming such cargoes to be dangerous does not mean that there would be no liability for shipping such cargoes.\footnote{224}

VI. Exceptionally dangerous goods

There may seem to be no good reason in drawing a distinction between exceptionally dangerous cargoes, such as explosives and inflammables, and seemingly innocuous cargo, such as apples or groundnuts. Damage is still damage, even when caused by an innocuous cargo. However, there are two reasons that require a distinction to be drawn between such goods: standard of liability and significance of risk and potential damage thereof.\footnote{225}

\footnote{223} The reason why the issue did not come out at the time the Hague Rules were being considered may be that at that time there was no concern with regard to such cargoes. Indeed, before the Second World War there was no real demand for special bulk carriers. Seaborne trade of all mineral ores only amounted to 25 million tons in 1937 and this could be carried in conventional tramp ships (freight vessels). By the 1950s, however, movements of bulk cargoes were increasing. Very often ores and other commodities were found far away and the most convenient and cheapest way of shipping them was by sea. Companies in the United States, Europe and increasingly in Japan began to build ships designed exclusively for the carriage of bulk cargoes. As demand increased and shipbuilding technology advanced, these ships tended to become bigger in size and carrying capacity. So the dangers of bulk carriage appeared after the Hague Rules were promulgated.

\footnote{224} \textit{Infra} Part 4.

\footnote{225} Falkanger/Bull/Braithaset, \textit{Introduction to Maritime Law} (1998), 297.
VII. Standard of liability, significance of risk and potential damage

If the basic liability rule is one of strict liability for one or more parties as against others for all goods, there is no problem of classification. Assuming that the basic rule requires fault, all goods may be treated in a standard way with the duty of care related to the risk. But a problem arises if a different liability is attached because of a degree of danger thought to follow from the carriage of the goods arising from the “nature” of the goods. This type of approach makes it possible to apply special rules to a category, but such an approach is only possible if the category is limited and only necessary if distinct liability rules are to apply. These rules may differ from what is standard because of their basis, either strict or fault, or because of the person responsible or both. Moreover, the category must be based on the likelihood of serious damage rather than any inherent danger of the goods. Although a distinction has been clearly recognized by those whose function is to regulate and supervise the carriage of potentially dangerous goods, the distinction has not been so clearly drawn in many cases.

It has been asserted that the correct approach is that there should be a general approach to liability in relation to the shipment of goods which cause loss to a carrier without prior qualification of the character of such goods. However, as examined in Part 4, in the current scheme, the basic rule for liability in sea carriage is fault and the application of strict liability is limited. It would not be just and proper to provide a more advantageous position to the carrier compared with the shipper when the basis of the carrier’s liability is fault.

Accordingly, it is submitted that the meaning of dangerous goods should be understood in the sense of the IMDG Code and other codes in relation to dangerous cargoes, but also should be flexible to comprise new, synthetic goods or goods whose dangers have been recently identified. Given the harsh nature of the strict liability rules, the term “dangerous” should be restricted to cargoes constituting significant risks and causing damage therefrom.

226 Abdul Hamid, *Loss or Damage from the Shipment of Goods, Rights and Liabilities of the Parties to the Maritime Adventure* (Diss. Southampton 1996), 50.