



Insight Article

Carriage of dangerous cargo – Questions to ask before you say yes

The shipment of dangerous cargo is now commonplace in many trades. This article is aimed at those operating in trades where the carriage of dangerous cargo is not an ordinary occurrence.

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Whilst cargoes can be legally dangerous as well as physically dangerous, this article is written in the context of the latter. Unfortunately, there has been a number of cases in which crews and their ships have been lost because of dangerous cargoes (e.g., due to liquefaction) or have suffered harm from fires/explosions caused by dangerous cargoes.¹ The sad truth is that there are some ship operators who probably do not know they are carrying a dangerous cargo because shippers misdeclare them, in some cases deliberately. The commentary below summarises some of the main questions to be asked before agreeing to carry dangerous cargoes, perhaps starting with the most important question: who is shipping? It is in the industry's interest, and particularly the ships' crews', to avoid doing business with so-called "rogue shippers".

Who is shipping?

If the request to ship dangerous cargo (or cargo which, given its description, may be dangerous but not declared as such) is made by a party with whom the carrier has had no previous dealings or experience, investigations ought to be undertaken as to that party's experience in shipping such cargo, and whether they have previously been connected with any accidents or rogue shipments. Of course, rogue shippers can be expected to change names, so be aware of newly-formed companies. If the request or order is from time charterers, it is still important to identify and research the underlying shipper. In summary: is the party asking to ship/shipping dangerous cargo reliable and trustworthy?

What can you refuse to carry?

Under a time charterparty, the charterer has relative freedom to employ the ship on lawful trades and to load lawful cargoes, but shipowners can exclude their right to load certain cargoes. Therefore, before entering any time charter, particularly a long one, shipowners should think carefully about which dangerous cargoes they wish to exclude. Standard form time charterparties usually contain a cargo exclusion clause, but not all require the shipowners' prior written consent. It is up to the owner to name cargoes he wishes to exclude from carriage and it is worth doing some research (and maybe obtaining expert advice) before doing so. It may be easier to expressly state which cargoes are allowed under the charterparty, to the exclusion of all others without prior written consent. Regulations may require certain fire-fighting arrangements or ships of special construction/strengthening for the carriage of dangerous cargoes and for a document of compliance to be issued before dangerous cargoes can be carried. Also, there may be limitations on the quantity of dangerous cargo that the ship can carry, e.g., for structural/stability reasons and/or because of restrictions under the IMDG Code. On smaller ships, the simple ability to safely segregate certain goods may be an issue.

What are you asked to carry?

It is all too common for dangerous goods to be misdeclared. It also happens that they get incorrectly or incompletely named. Different companies, countries and trades may also use different names for specific dangerous cargoes. 2 It is important to establish the exact cargo you are dealing with by obtaining details on its physical and chemical properties, its hazards and origin. It is then a case of referring to the relevant codes/regulations, such as SOLAS, BC Code and IMDG Code, to establish the relevant carriage guidance. It is important to note, however, that the cargo lists in the IMDG and IMSBC Codes are not exhaustive, which is why details from shippers on cargo properties and hazards are important. Care should be taken to refer to any amendments to the relevant codes/regulations and/or their very latest version (only recently has a new BC Code been introduced - now named the IMSBC Code). Guidance can be sought from the P&I Club or other industry bodies and if necessary advice can be obtained from experts. With reference to the IMSBC Code, it should be noted that a number of specific cargoes may be grouped together under a general entry, e.g., mineral concentrates and metal sulphide concentrates.

What are the dangers/hazards posed by the cargo?

Once the cargo has been correctly identified, the carrier should seek to fully understand the dangers posed by that cargo to the ship and crew. Beyond what is provided in relevant codes/regulations, research can be undertaken with relevant industry bodies, the P&I Club, 3 flag state 4 and port state. It is important to be aware that codes such as the IMDG Code and IMSBC Code may not be completely comprehensive. For example, some ores, fines and concentrates that may liquefy may not be identified as cargoes possessing that hazard in the IMSBC Code. If necessary, expert advice can be sought. The cargo may be dangerous by its very nature (for instance, it poses chemical hazards), but others may only become dangerous in certain circumstances. The carrier should have a basic understanding of how and why the cargo can become dangerous - it may depend on the rate at which it is loaded, its mass/density within a given cargo space, its moisture content, temperature or contact with certain solids/liquids/gases. It is worth remembering that seemingly safe cargoes can create dangerous situations; for example wood can cause oxygen depletion with the obvious risk that poses to those that may seek to enter the cargo space.

What does the ship/crew need to safely carry dangerous cargo?

The ship may need to be of a certain construction or strengthening for the carriage of dangerous cargo. It may also need special equipment, such as fire-fighting apparatus, a nitrogen generator for inerting, temperature monitoring, gas detection devices, protective clothing for the crew. The crew will need to be provided with the relevant codes/regulations containing guidance material on safe carriage and on responding to accidents involving dangerous cargo (e.g., the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods). Of course, and most importantly, the crew will need to know exactly what dangerous cargo they are carrying (and, indeed, the answers to many of the questions posed in this article - and more).

What should the shippers provide?

The shippers should provide the exact cargo that the carrier has agreed to carry. The cargo actually presented for shipment may well differ from that first declared/notified and the carrier should check this before any cargo is loaded. Obviously, this will be difficult with packaged/containerised cargo, but at least external labels should be checked. Documentation should also match the cargo presented for shipment and that which the carrier has agreed to carry. Full and proper documentation is a key aspect in the carriage of dangerous cargo and, again, no cargo should be loaded in absence of this. Unfortunately, there have been many instances in which shippers have simply failed to provide the required documentation. 5

Documentary requirements are set out in the relevant regulations/codes and, essentially, form the basis of the information on the dangerous cargo which the carrier needs as evidence that the goods/cargo is safe for carriage, to alert the carrier and his crew to the relevant hazards, and to guide the carrier/his crew on safe carriage and how to react in the case of emergency. The information should be provided sufficiently in advance to enable precautions to be put into effect by the carrier. The shipper's documentation should include analysis certificates for key safety parameters, such as the moisture content, flow moisture point and transportable moisture limit for a bulk cargo that may liquefy. The shipper should provide the relevant declarations that the information provided is accurate. The information provided should be truly representative of the cargo actually loaded. Key safety parameters stated in generic material safety data sheets may not be specific to the cargo to be loaded and should be treated with caution in the absence of analysis certificates that are specific to the cargo to be loaded. Sadly, there have been instances in which shippers' certificates have been found not to be truly representative of the cargo's key safety parameters, which is why it is extremely important for the carrier not to place full reliance on them. If the carrier is in any doubt, he should consider arranging his own tests (see below). In addition to documentation, dangerous cargo in a packaged form should be properly packaged and labelled by the shipper.

What does your contract say?

Cargo exclusions in time charterparties have already been mentioned, but what else does the charterparty say about the carriage of dangerous cargo? Is the master entitled to refuse to load, or, if already loaded, to unload and dispose of dangerous cargo that is unsafe for carriage at charterers' time, risk and expense? If the contract incorporates or will be compulsorily subject to the Hague/Hague-Visby/Hamburg Rules, it should be noted that all these Rules contain provisions with regard to dangerous cargoes. For example, the Hague-Visby Rules provide (in Article IV Rule 6):

"Goods of an inflammable, explosive or dangerous nature to the shipment whereof the carrier, master or agent of the carrier has not consented with knowledge of their nature and character, may at any time before discharge be landed at any place, or destroyed or rendered innocuous by the carrier without compensation and the shipper of such goods shall be liable for all damages and expenses directly or indirectly arising out of or resulting from such shipment. If any such goods shipped with such knowledge and consent shall become a danger to the ship or cargo, they may in like manner be landed at any place, or destroyed or rendered innocuous by the carrier without liability on the part of the carrier except to general average, if any."

Can test for moisture content.

The applicable law and jurisdiction under the contract are also worth considering. Will these result in ready access to justice in the event of a dispute or casualty involving dangerous cargo? It should be kept in mind that the law covering liability for loss/damage arising out of the shipment of dangerous goods varies from country to country. Under English common law charterers/shippers would risk being in breach of an implied and absolute undertaking if they were to load cargo without notice of its peculiar characteristics which endanger the ship, unless the owners or their crew knew or ought reasonably to have known of them. In the context of cargo which is known to be dangerous, English case law suggests that owners should be regarded as having contracted to bear risks which can be avoided by appropriate methods of carriage for the goods of the relevant type (the owners being expected to keep up to date with the correct carriage methods but not to have the knowledge of an expert chemist), but not the risks produced by a particular cargo, which are of a totally different kind (whether in nature or degree) from those attached to the carriage of the described cargo, and which should fall on the shippers/charterers. In a recent case ⁶ the English courts decided that a carrier's right of indemnity against a shipper was not limited to a situation where the dangerous nature was the sole or dominant cause of the loss, but where in any event the damage would not have occurred except for the peculiar characteristics of the actual cargo shipped. ⁷ The position under English law can be contrasted with that under US law, which appears to be more onerous for the shipowner. ⁸

If the Hague/Hague-Visby Rules apply, a claim by the carrier against the shipper under Article IV Rule 6 would, under English law, be defeated if the carrier breached his duty to exercise due diligence to make ship seaworthy and that was a contributing cause of damage resulting from shipment of dangerous cargo. This is very relevant, as shown in the case of the *EURASIAN DREAM*.⁹ In that case the English courts decided that a pure car carrier was rendered unseaworthy as a result of the operators' failure to provide the vessel with specific documentation dealing with the peculiar danger of fire on car carriers and the precautions to be taken to avoid such fires.

The stowage of dangerous goods is often an important factor in their safe carriage and it is worth considering who would be responsible for stowage under the contract. In a recent English court case (involving the negligent stowage of dangerous cargo next to a ship's bunker tanks),¹⁰ it was found that where a charterparty allocated responsibility for the stowage to the charterers, the shipowners had no responsibility to the charterers for damages consequent on improper stowage, even if it rendered the vessel unseaworthy. The outcome of the case would almost certainly have been different had the words "and responsibility" been added to clause 8 of New York Produce Exchange form charter.

It should not be forgotten that, when negotiating contract terms, the shipowner has an opportunity to stipulate what the shippers/charterers are obliged to provide in advance of loading dangerous cargo and what the carrier is entitled to do if the shipper/charterer does not comply. This can be particularly relevant if the place of loading has a history of problem or rogue shipments. Consideration can also be given to making contractual provision for full co-operation from cargo interests, full access to the cargo ashore for possible inspection/sampling and for analysis at specific laboratories which can be relied upon to give accurate results (preferably being at owner's option to invoke such provisions, whilst not relieving charterers and cargo interests of the primary obligation to provide full and accurate documentation). Such provisions would need to be carefully considered on a case by case basis as the ultimate effect could be to make it more difficult for an owner to refuse to carry a cargo in respect of which doubts still remain.

What is your insurance cover?

It is important to be aware that the carriage of dangerous cargo can, in certain circumstances, prejudice the carrier's insurance cover. There may be a warranty in the insurance contract that no dangerous cargoes will be carried, or that they will only be carried in accordance with relevant regulations. In the absence of any warranty, a general duty of disclosure applies at the inception of an insurance contract (see for example Rule 6 of Gard's Rules for P&I cover). If a vessel's trade in dangerous cargo is not made known to the insurer and the insurer could not be reasonably expected to know of such trade, insurance cover could be prejudiced. Similarly, a radical change in the trade of the ship from one which has, for example, involved the carriage of steel to one involving the carriage of dangerous cargo in bulk could well be deemed to be an alteration of the risk requiring disclosure to the insurer. Rule 7 of Gard's Rules for P&I cover (Alteration of Risk) sets out the consequences of an alteration of risk not disclosed to the Club: one being that the member has no cover for liability, loss, cost or expense caused or increased by the alteration of the risk.

Gard's P&I Rule 74 (Unlawful Trades etc.) provides that:

"The Association shall not cover liabilities, losses, costs or expenses arising out of or consequent upon the Ship carrying contraband, blockade running or being employed in or on an unlawful, unsafe or unduly hazardous trade or voyage".

The words "unsafe or unduly hazardous trade or voyage" may be of particular relevance in the context of carriage of dangerous cargo, and some guidance may be derived from the legal principles which govern contracts of carriage. Other Club Rules, such as Rule 8 (Classification and Certification of the Ship), requiring compliance with statutory requirements of the ship's flag state, and Rule 73 (Nuclear Perils), which sets out certain exclusions with regard to the carriage of nuclear material, may also be relevant.

Where/when is the carriage to/from?

Another important consideration when asked to carry dangerous cargo is the place/country of shipment. Sadly, a number of countries have a poor reputation for the shipment of dangerous cargoes, probably due to a lack of internal controls and/or sanctions on shippers. P&I Club circulars and articles can be referred to for guidance in this regard. The nature of the voyage and the ship's remoteness from assistance should also be considered. A long voyage through predictably heavy weather may, for example, raise additional concern. Having considered these factors, decisions can be taken on how best to safeguard the crew and the ship.

How to manage the peculiar risks?

If the decision is that the ship can carry dangerous cargo, it is worth spending time considering how the risks peculiar to the dangerous cargo in question can be best managed and minimised. The most important phase is pre-carriage and, as already mentioned, the carrier should put in place his own checks to ensure that the cargo presented for shipment is safe for carriage. ¹¹ Finding out how and where a dangerous bulk cargo susceptible to liquefaction has been stored and for how long is useful to know when moisture content of the cargo is the key safety parameter. Performing the carrier's own tests on the cargo can be as simple as the crew performing a "can test"¹² but if in any doubt proper representative sampling and reliable analysis will need to be considered. It goes without saying that the crew will need to be properly briefed before loading, and all crew members should be aware of the location and dangers of the cargo. It may be necessary to display signs prohibiting entry into spaces containing dangerous cargo and/or properly notify third parties involved in the carriage, such as stevedores and terminal personnel, about the dangerous cargo.

Perhaps most importantly, the crew will need to know the warning signs that something is going wrong with the cargo and how they should respond. If an accident does occur, it will have been prudent to have drilled the crew in the emergency procedures as the speed and thoroughness of the response can often make the difference. The lessons learnt from previous incidents are extremely valuable: they demonstrate the importance of proper risk assessment ¹³ and quick access to accurate information and expert advice/assistance. ¹⁴

Why should you take the risk?

After reading this article you may ask yourself: "why should I take the risk of carrying dangerous cargo"? No doubt the vast majority of dangerous cargo is carried successfully and without problem. On the occasions when problems do occur, the consequences can be severe. A cautious approach is always to be recommended. As always, prevention is better than cure.

Footnotes

1. See for example the article "[Understanding the different direct reduced iron products](#)" in Gard News issue No. 178.
2. See Gard's for example Loss Prevention Circular No. 07-03, "[The dangers of carrying Direct Reduced Iron \(DRI\)](#)".