

# THE SALE AND SHIPMENT OF COAL

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# CHAPTER 1

## INTRODUCTION

The Coal Industry in South Africa exported 54,5 million tons in 1993, providing R4,2 billion in export revenues, second only to gold. Apart from small parcels of coal exported through Durban and Maputo, coal is exported through the Richards Bay Coal Terminal. As new producers such as Indonesia, Columbia and China enters the International Market, equally (and sometimes better) placed than South Africa to penetrate markets in Europe and the Far East, the South African Coal Industry cannot afford to damage its' competitive position through accusations of "hot coal" problems.

In this thesis, the phenomenon of spontaneous heating, combustion and methane emission from coal cargoes, will be discussed, and the F.O.B. sales of coal will be commented upon.

Spontaneous combustion is not a new problem, and was the subject of a New South Wales Royal Commission Report Research in steamship bunker coal in 1923, which covered almost all the points raised in more recent papers on this phenomenon. In this thesis, it will be argued that at most, coal can be seen as a potentially hazardous cargo, which must be handled with great care.

The International Maritime Organisation (IMO) plays a major role in the regulation of dangerous goods and their carriage by sea. The IMO is a specialised agency of the United Nations, and has, as its main objective, the facilitation of co-operation among governments on technical matters affecting international shipping in order to achieve the highest practical standards of maritime safety and efficiency of navigation. The IMO is principally an advisory body only, with no power to legislate. South Africa is not a member of the organisation.

Relevant to this thesis, the IMO has drawn up, and maintains an International Maritime Dangerous Goods Code, to provide guidelines for the safe handling and shipment of dangerous goods. This code has been given statutory force in South Africa in so far as the classification of dangerous goods is concerned, by inclusion in the Merchant Shipping Act 57 of 1951, as Chapter VII to Schedule 2 of the Act.

It is suggested in this thesis that most principles of the current law on the carriage of goods are adequate for catering for the sale and carriage of coal, although this requires careful conceptual treatment of coal cargoes and their characteristics. It will further be argued that provisions on the shipment of coal issued under the aegis of the IMDG Code, should be included in South African Legislation.

Finally, it must be noted that the dearth of South African decisions flowing from 'hot coal' problems is not a reflection of the lack of potentially litigious situations, but rather of the unwillingness of parties to submit themselves to costly and lengthy litigation when problems do occur.

## CHAPTER 2

### COAL: A POTENTIALLY HAZARDOUS CARGO

Before attending to the legal aspects of spontaneous heating and combustion, this phenomenon itself must be considered and explained.<sup>1</sup>

#### 1. The Occurrence of Spontaneous Heating

The spontaneous combustion of organic vegetable matter is well known. Metamorphosed vegetable matter such as coal, is likely to become fired under specific circumstances. This phenomenon appears to occur in distinct stages, although the precise mechanism giving rise to the stages is not fully understood. These stages are as follows:

- Slow oxidation, with a slow temperature rise to above 50°C. The main oxidation product is Carbon Monoxide;
- More rapid oxidation due to the higher temperatures, up to 100-138°C; evolution of Carbon Monoxide continues;
- The evolution of Carbon Dioxide continues at an increasing rate, the temperature rising to a level of 230°C, where spontaneous combustion can occur.
- Should this temperature rise be allowed to continue, at about 350°C, the coal ignites and combustion begins.

For bituminous coals, the critical temperature is between 50 and 60°C. Unless preventative measures are taken at about this temperature, spontaneous heating to ignition will proceed rapidly.

#### 2. Coal Properties - Causes of Spontaneous Heating

Certain coal properties are a good indicator as to its liability to heat spontaneously.

##### **Rank**

Coals are classified according to rank, by consideration of a number of coal properties. As a general rule, the liability of a coal to heat spontaneously decreases as Rank increases. With anthracites, the rate of spontaneous heating is low, whilst rapid spontaneous heating is almost guaranteed with lignite. Low Rank coals, with a high inherent moisture and oxygen content, tend to be more friable, the interfaces within the

coal itself are greater, and hence there is a greater opportunity for oxidation. Before selecting or handling a particular coal, at least the inherent moisture and oxygen content should be known. If these values are high, then the coal should be submitted to a suitable authority for tests to determine liability to spontaneous heating.

### **Particle Size**

The oxidation processes begins on the surface of a coal particle. Hence, the finer the coal's sizing, the greater the surface area per unit of mass, and the greater the likelihood of spontaneous heating. The majority of coal exported from South Africa has a size parameter of 0 x 40mm, with a preponderance of 0 x 10mm material. Hence, considerable care should be taken with this material.

### **Time**

Coal deteriorates during storage over a length of time. The time for coal in bulk to reach 80°C (which is regarded as the point after which the rate of oxidation increases rapidly) depends on a number of factors, as discussed already. However, in general, bituminous coal can normally be stored for up to eight to ten weeks without risk of spontaneous combustion. This suggests that in the stockpiling, transport, and offloading of coal, the material should be handled on a first in, first out basis, and steps taken to rotate stockpiles.

### **Temperature**

External heat sources will promote spontaneous heating. While coal is a poor heat conductor, and ambient temperatures thus have little effect, the effect of solar heat gain contributes to spontaneous heating, by promoting moisture changes in the coal stock

itself. This obviously applies to stockpiles before loading. Within holds of vessels, heat sources include steam lines, faulty electrical wiring etc.

### **Air Supply/Moisture**

Perhaps the best documented feature of spontaneous heating, is the introduction of air into coal in bulk, since this promotes oxidation and spontaneous heating. As will be shown later, most practical steps to prevent spontaneous combustion are based on excluding air from the coal stockpile. Similarly, coal in an air dried state, will react to rainfall/humidity.



3. Problems Associated with Spontaneous Heating

The most serious problem resulting from spontaneous heating i.e. spontaneous combustion in a ships hold, is the outbreak of fire. Other consequences include the production of carbon monoxide and/or carbon dioxide, which pose hazards to operators

working in confined areas with coal. Furthermore, there is the problem of a loss of coal quality, due to spontaneous heating. This is particularly problematic with coking coals, where the coking properties are seriously affected. In all coals however, the calorific value and volatile matter content are adversely affected by spontaneous heating, and may render the coal delivered out of specification from that contracted for and loaded.

4. Emission of Methane

Methane is a light, odourless, colourless, flammable gas which may be emitted by coal, and can produce an explosive mixture in air. A methane/air mixture containing between 5 and 16% methane is considered potentially explosive, should sparks or a naked flame be introduced into this atmosphere i.e. electrical or frictional sparks. Methane tends to accumulate in the upper region of the cargo space. While some coals may emit small quantities of methane under natural conditions, methane emission in dangerous quantities tends to result from spontaneous heating of coal in bulk.

The consequences of a spark causing an explosion may be considerable - In 1990, a laden Bulk carrier, the "Berge Charlotte", carrying coal from the United States, suffered an explosion killing her Master and four crew, due to methane igniting as sparks were caused by a hatch cover being lifted.

Hence, a coal cargo may be hazardous, and fit the definition of dangerous goods in section 2(1) of the Merchant Shipping Act 57 of 1951, that such goods are those:

*"Which by reason of their natures, quantity, or mode of storage, are either singly or collectively liable to endanger the lives or the health of persons on or near the ship, or to imperil the ship, and includes all substances within the meaning of the expression of 'explosives' as used in the Explosive Act 1956.....and any other goods which the Minister by notice in the Gazette may specify as dangerous goods".<sup>2</sup>*

However, the complexity of the factors contributing to spontaneous heating is such, that coal can be considered as no more than a potentially dangerous cargo.

## NOTES

1. For information on this matter, I am indebted to discussions held with Metallurgists at Greenside Colliery, and Gold Fields Coal Limited, and shipping agents in Richards Bay and Durban.
2. Section 2(1) Merchant Shipping Act 57 of 1951.

## CHAPTER 3

### **GUIDELINES AND REGULATIONS FOR THE CARRIAGE OF COAL**

#### 1. Safety of Life at Sea Convention (SOLAS)

The starting point of any discussion on the legal position on, or regulations of shipping coal, must be the Safety of Life at Sea Convention. The carriage of dangerous goods was first regulated at international level, at the Fourth International Convention on the Safety of Life at Sea (SOLAS 1960). This was replaced in 1974, by an updated convention of the same name<sup>1</sup>, which was ratified by South Africa, and promulgated as the Second Schedule to the Merchant Shipping Act 57 of 1951. SOLAS<sup>2</sup> includes the Convention itself, and an Annex to this. The Convention itself is of no particular relevance here; while of the eight chapters of the Annex, only Chapter VII ('Law of Dangerous Goods')<sup>3</sup> is important for the purposes of this discussion.

Coal is typically classified following Chapter VII<sup>4</sup>, as a dangerous good under class 4.1 (Inflammable Solids), class 4.2 (Inflammable solids, or substances, liable to spontaneous combustion); or class 4.3 (Inflammable solids, or substances, which in contact with water emit inflammable gasses). The latest IMDG code, which will be discussed more fully later, uses this classification and the regulations which follow as a premise upon which all guidelines are based.

Regulation 3(a) directs that the packing of dangerous goods shall be:

- (i) well made and in good condition;
- (ii) of such a character that any interior surface with which the contents may come in contact, is not dangerously affected by the substance being conveyed; and
- (iii) capable of withstanding the ordinary risks of handling and carriage by sea.

These guidelines are clearly reflected in the IMDG Code.

## 2. International Maritime Dangerous Goods Code

The Charter of the International Maritime Organisation is, inter alia, directed at the safety of life at sea. The IMO Code of Safe Practice for Solid Bulk Cargoes is constantly under review in the light of new experience, changing cargoes and ship types.

The primary aim of the Code is to promote the safe stowage and shipment of bulk cargoes by highlighting the dangers associated with the shipment of certain types of bulk cargoes, providing guidance on the procedures to be adopted when the shipment of bulk cargoes is contemplated, and describing test procedures to be employed to determine various characteristics of the bulk cargo materials.

The most recently revised Code was issued in 1991, and represents a considerable improvement on the predecessor, in its treatment of coal. This document is welcome and constructive, as it addresses the hazards of bulk coal transport in a far more informed and flexible manner, which acknowledges the complexity of this mineral and its properties.

As a starting point, the Code uses the classification of hazardous materials as laid out in the Safety of Life at Sea (SOLAS) Convention of 1974, and included in Chapter VII of Merchant Shipping Act 57 of 1951 in South Africa.

- Class 1 - Explosives.
- Class 2 - Gases: compressed, liquefied or dissolved under pressure.
- Class 3 - Inflammable\* liquids.
- Class 4.1 - Inflammable solids.
- Class 4.2 - Inflammable solids, or substances, liable to spontaneous combustion.
- Class 4.3 - Inflammable solids, or substances, which in contact with with emit inflammable gases.
- Class 5.1 - Oxidizing substances.
- Class 5.2 - Organic peroxides.
- Class 6.1 - Poisonous (toxic) substances.
- Class 6.2 - Infectious substances.
- Class 7 - Radioactive substances.
- Class 8 - Corrosives.
- Class 9 - Miscellaneous dangerous substances, that is any other substance which experience has shown, or may show, to be of such a dangerous character that the provisions of this Chapter should apply to it.

Coal falls under Classes 4.1, 4.2 and 4.3, which the Code suggests should be kept as cool and dry as reasonably possible, stowed clear of all sources of heat or ignition; that electrical fillings and cables should be in good condition and properly safeguarded against short circuits and sparking. Furthermore, materials such as coal, which are liable to give off vapours or gasses of an explosive nature (i.e. methane) should be stowed in a mechanically ventilated space.

Appendix IX B of the Code contains detailed provisions for the shipment of coal, which are reproduced in the South African Department of Transport Publication "Code of Safe Practice for the Safe Handling and Ocean Transport of South African Coal".<sup>6</sup>

The new recommendations reiterate the properties and characteristics of coal, and the potential hazards with respect to dangers of methane, carbon monoxide, oxidation, and additionally reaction with water resulting in corrosion, and production of flammable and toxic gases including hydrogen.<sup>7</sup>

Under the previous guidelines, the basis of the provisions was what was termed the "Historical Test". This represented the accumulated data on a particular coal's behaviour during ocean transport. The guidelines actually went so far as to suggest that the validity of this test was dependent on a "continuous methodical record" of several shipments of a certain coal, under similar circumstances.

Shippers were directed to provide to the Master, a certificate stating the category of the coal to be shipped to be A, B, C or D. This categorisation was based on the "historical test", and resulted in different procedures and precautions being prescribed for that coal. Category A coal cargoes were those identified as having a history of shipment under similar circumstances as having a history of shipment under similar circumstances without problems arising from methane emission or spontaneous without problems arising from methane emission or spontaneous heating. Category B coals were those which had shown itself (potentially) liable to emit methane in quantities sufficient to create a hazard. Category C coals were those shown to be (potentially) liable to spontaneous heating. Category D coals were those exhibiting both Category B and C characteristics.

Under the revised regulations, this rigid pigeon-holing of coals has been removed, which is a welcome innovation<sup>8</sup>. As has been shown, coal is a complex mineral, which becomes hazardous under a variety of situations and influences.

To pigeonhole coals into categories is to ignore this complexity, and the basic principles underpinning spontaneous heating and its control. A more flexible, principled approach was needed to the problem, and is now provided for in the 1991 IMO regulations, and Department of Transport handbook<sup>9</sup>:

*"Prior to loading, the shipper or his appointed agent should provide in writing to the Master, the characteristics of the cargo, and the recommended safe handling procedures for loading and transport of the cargo. As a minimum, the cargo's contract specifications for moisture content, sulphur content, and size should be stated and especially whether the cargo may be liable to emit methane or self-heat."*<sup>10</sup>

*"The Master should be satisfied that he has received such information prior to accepting the cargo. If the shipper has advised that the cargo is liable to emit methane or self-heat, the Master should additionally refer to the "Special Precautions"."*<sup>11</sup>

Several P&I Clubs have, in newsletters to their members, suggested the Master will be within his rights to refuse to being loading unless he has received the specified information. Interestingly, a 'report-back' clause is included<sup>12</sup>, stating that should the behaviour of the cargo during the voyage differ from that specified in the cargo declaration, the Master should report such differences to the shipper. This paragraph goes to explain that such reports enable the shipper to maintain records on the behaviour of the coal cargoes, so that the information provided to the Master may, in future shipments, be reviewed.

### 3. Specific Provisions of IMO Guidelines

Turning to the provisions in more detail, there are no significant changes with regard to segregation and stowage<sup>13</sup>. A notable change in the provisions, is that for the first time<sup>14</sup>, vessels are recommended to carry measuring instruments, irrespective of the type of coal, or hazards envisaged. The instruments required are those for measuring the concentration of methane, oxygen and carbon monoxide in the atmosphere; the pH value of cargo hold bilge samples; and the temperature of the cargo in the range between 0° and 100°C. The provisions go further to add that ship's personnel should be trained in the use of such instruments. Such recommendations or guidelines are long overdue. As has been shown, the potential hazards of transporting coal are such that rigid categorisation of coals is an insubstantial measure. Rather, an understanding by shippers and ship's personnel of the processes which lead to hazards, will improve matters considerably, and remove the hotch-potch mixture of elementary chemistry and superstition with which the shipping industry has approached coal<sup>15</sup>.

The section on Special Precautions covers both the emission of methane, and self-heating, giving clear, logical and commonsense directions for the handling of such coals<sup>16</sup>.

The recommendations for trimming<sup>17</sup> are little changed from the previous requirement, requiring that the surface of the material has been trimmed 'reasonably level' to the boundaries of the cargo space to avoid the formation of gas pockets, and prevent air from entering the body of the coal bulk. What constitutes trimming to this 'reasonable level' can be a matter of some debate. The reason trimming is important, is that it serves to reduce the surface area of coal exposed to air, and restricts ventilation through the coal, thus reducing the possibility of heating occurring. A sensible addition to these provisions, is that the shipper should ensure that the Master receives the necessary co-operation from the loading terminal.

These IMO Guidelines are repeated in the South African Department of Transport handbook referred to earlier. This publication contains, in addition, a section on the "Interpretation" of the IMO Code with Specific Reference to South African Coals<sup>18</sup>, which suggests guidelines for the control of spontaneous heating of South African coal during stockpiling, handling, and transportation<sup>19</sup>. This section provides in some detail, a gloss on recommendations outlined earlier, for shippers and ship's personnel, with suggestions for stabilising a cargo which either is, or is alleged to be, a hazard.

The status of these guidelines and recommendations is purely what it suggests: Merely a code to promote the safe stowage and shipment of coal in bulk<sup>20</sup>. It certainly is not Law (even Customary Law), although it will be suggested later in this work that legislation is desirable in the South African context. However, with P&I Clubs increasingly urging their members to adopt the IMO recommendations, it may well in time become established, customary practice to adhere to these guidelines, for fear of falling foul of insurers.

#### 4. Merchant Shipping Act 57 of 1951

The insertion of Chapter VII of the SOLAS Convention, into Schedule 2 to the Act, has already been dealt with<sup>21</sup>. This Act deals specifically with dangerous goods under section 235.

Section 235(5) provides that the section shall apply to South African ships, wherever they may be; and to all other ships while they are within any port in the Republic, or are embarking or disembarking passengers within the Territorial Waters of the Republic, or are loading or discharging cargo or fuel within these waters.

Section 235 in full reads as follows:

"235. *Dangerous goods not to be carried.*:-

- (1) *No person shall send by or carry in any ship, except in accordance with the prescribed regulations, as cargo or ballast, any dangerous goods.*
- (2) *No person shall send by any ship, if he be not the master or owner of a ship carry in that ship, any dangerous goods without distinctly marking, in one of the official languages of the Republic, their nature on the outside of the package containing the same, in accordance with the prescribed regulations, and without giving written notice of the nature of such goods and of the name and address of the sender thereof to the master or owner of a ship at or before the time of sending the same to be taken on board the ship.*
- (3) *The master or owner of any ship may refuse to take on board any package or parcel which he suspects to contain dangerous goods, and may require such package or parcel to be opened to ascertain the fact.*
- (4) *The provisions of this section shall not apply to ships' distress signals, or to the carriage of naval or military stores for the public service under conditions authorized by the Director-General.*
- (5) *This section shall apply -*
  - (a) *To South African ships wherever they may be; and*
  - (b) *To all other ships while they are within any port in the Republic, or are embarking or disembarking passengers within the territorial waters of the Republic, or are loading or discharging cargo or fuel within those waters.*

[Para. (b) amended by s.42 of Act No. 40 of 1963.]

Examining these provisions, the following is worthy of comment:

The 'prescribed regulations' referred to in Section 235(1) are those made by the Minister of Transport in terms of Section 356(1) of the Act. In this regard, the Safety of Navigation Regulations 1968<sup>22</sup> were promulgated, which substantially follows the provisions of the Annex to SOLAS.



"Goods" are defined, per Section 2(1) to include "all animals, matter, or things", while dangerous goods are defined as "goods which by reason of their nature, quantity, or mode of stowage, are either singly or collectively liable to endanger the lives or the health of persons on or near the ship, or to imperil the ship ... and any other goods which the Minister by notice in the Gazette may specify as dangerous goods".

Section 235(2), in providing for the giving of notice of the nature of goods shipped to the Master or owner of the ship, provides in some measure, legislative backing for the 1991 IMDG provision<sup>23</sup> requiring the shipper to provide for the Master, a written report on the characteristics of the coal, and recommended safe handling procedures. One can assume from the peremptory tone of the provision, that the failure of a shipper to provide such notice, is to fall short of the responsibilities of a shipper.

S235(3), too, impacts upon issues of liability and responsibilities when a hot coal problem occurs. These sub-sections will be discussed further in Chapter 3<sup>24</sup>.

Chapter IX of the Act, concerns criminal sanctions to follow upon non-compliance with the Act. S313(2) provides for penalties to be imposed on persons contravening, or not complying with S235. Non-compliance with subsections (1) or (2) may result in a fine of up to R800 and/or imprisonment of up to one year being imposed on a shipper. The Director-General: Transport Affairs may impose a penalty (not exceeding the maximum fine) upon admission of guilt.

S334 of the Act contains a quite severe measure, in providing that all ships (or shares or interests in ships) or goods which are dealt with contrary to the provisions of the Act, or by means of which any offence under the Act is committed, shall be liable to forfeiture. Furthermore, a ship may be detained if unseaworthy<sup>24</sup> which is the case of, inter alia, she is "not in a fit state as to .... the stowage of her cargo or ballast .... or in any other respect, to encounter the ordinary perils of the voyage upon which she is engaged or is about to enter"<sup>25</sup>. It is submitted that this would include the carrying of a dangerous cargo of coal, in contravention of the Act, or regulations.

These legislative provisions which relate to the shipping of hazardous cargoes, seem colourless and bland seen within the context of legislation. However, these provisions assume critical importance, when seen within the context of an actual hot coal problem, or the circumstances of the Berge Charlotte incident.

## NOTES

1. SOLAS 1974.
2. SOLAS 1978 - of no particular relevance here.
3. Schedule 2, Merchant Shipping Act 57 of 1951.
4. Regulation 2.
5. Issued pursuant upon the IMDG Code, this reproduces the IMDG provisions relevant to Solid Bulk Cargoes.
6. Appendix 1.  
  
Note: These correspond with the IMO Code of Safe Practice for Solid Bulk Cargoes.
7. Appendix A to the Code. ("Properties and Characteristics").
8. An illustration of the shortcomings of "pigeon-holing" coals, is the explosion on board the Berge Charlotte in 1990, mentioned in Chapter 2. The coal which emitted methane with such tragic consequences, was a Category A coal, and (as such) expected to be safe.
9. Code of Safe Practice for the Safe Handling and Ocean Transport of South African Coal. ("The Code").
10. Paragraph 3.1.
11. Paragraph 3.2.
12. Paragraph 3.12.
13. See Appendix 1.
14. Section 3 of this Chapter.
15. A letter sent by the West of England P & I Club, urges members to adhere to these provisions, and hints at vessels being declared unseaworthy if such instruments are not carried.
16. Appendix 1.

17. Paragraph 3.7.
18. Appendix 1.
19. These provisions are entirely consistent with the discussion in Chapter 2, on factors causing spontaneous combustion.
20. Introduction: IMDG Code.
21. Section 3 of this Chapter.
22. Per Government Notice R651, published in the Government Gazette 2049 of 19 April 1968.
23. See discussion, *supra*.
24. S243.
25. S2(1).

## CHAPTER 4

### **LAW OF CARRIAGE OF (DANGEROUS) GOODS**

#### 1 Seaworthiness

By entering into a contract for carriage of goods in a ship, it is implied that the shipowner<sup>1</sup> undertakes that his ship is seaworthy at the beginning of the cargo-carrying voyage. This implied undertaking is necessary, since the express undertaking of seaworthiness in charter parties applies only to the condition of the ship at the time when the charter contract is concluded, and therefore to the voyage of the vessel to the port where the cargo is taken on board<sup>2</sup>. While this implied term applies to the beginning of the cargo-carrying voyage, the owner cannot be held responsible for unseaworthiness supervening during the voyage.

In a contract of affreightment, the carriage provided by a shipowner involves not just the transport of the goods from one place to another, but also keeping these goods safe and undamaged during the voyage. At common law the duty of a carrier in this regard is a strict duty - the undertaking is that the vessel is in fact seaworthy. However, the strict liability of a carrier at common law has been mitigated, by private contracts<sup>3</sup> or legislation. Where a contract of carriage is contained in a Bill of Lading governed by the Carriage of Goods by Sea Act<sup>4</sup>, or where the provisions of this Act are incorporated in a charterparty, the carrier need only "exercise due diligence to make the ship seaworthy". Chorley and Giles<sup>5</sup> distinguish seaworthiness "pure and simple" (the duty to provide an efficient instrument of sea-going transport), from cargoworthiness<sup>6</sup> - the duty to provide a safe warehouse for the cargo during the voyage.

#### **Seaworthiness**

The test followed by our courts in assessing seaworthiness, was formulated in McFadden v Blue Star Line, where it was stated that to be seaworthy, a vessel "must have that degree of fitness which an ordinary, careful and prudent owner would require his vessel to have at the commencement of her voyage, having regard to all the probable circumstances of it"<sup>7</sup>. From decided case law, it may be deduced that a ship complies with this, if her hull, tackle and machinery are in good working condition, if sufficiently bunkened and ballasted, and manned by an efficient crew. Seen in the context of the shipping of coal, where the potential hazards of spontaneous heating and/or Methane emission are known, it is submitted that a vessel not carrying the instruments referred to in Regulation 3.3 of 1991, IMDG Code, is not seaworthy for the voyage, as an ordinary, careful and prudent owner would insist on the provision and maintenance of such instruments.

Similarly, the provision of a crew untrained in the use of such instruments, procedures for carrying coal or dealing with hazards of coal, should properly be regarded as a breach of the obligation of seaworthiness. By way of analogy, it was held in The Roberta<sup>8</sup> that in hiring an engineer, without enquiring as to his qualifications and competency, a shipowner had provided an unseaworthy ship.

### **Cargoworthiness**

The duty encompassed in the obligation of cargoworthiness, requires the vessel to be sufficiently strong and equipped to carry the particular kind of cargo she is contracted to carry, and that the cargo is so loaded, that it is safe for her to proceed on her voyage.

For a vessel carrying coal to be cargoworthy, the vessel must have holds suitably designed for the carriage of coal, which do not, inter alia, expose the cargo to sources of heat or ignition referred to in the IMDG Code. Nor must there be a fault of design or repair in the hold, which allows ingress of air through the bulk of the cargo in the hold. The design and mechanism of the hatch covers must be such that they can be opened, to allow for the release of methane, or closed, to starve a heating or combusting coal bulk of oxygen, whichever the case may be. Authority for this proposition is provided in Stanton v Richardson<sup>9</sup> where a vessel, capable of carrying a cargo of wet sugar, had pumps which were not able to deal with the moisture (although they were efficient for any other purpose). It was held that the vessel was not cargo - or seaworthy, and the charterer could avoid the charter.

### **Stowage and Trimming**

Chorley and Giles<sup>10</sup> treat "bad stowage" as a third leg of their formulation of the seaworthiness concept, based upon the different effects of exception clauses under contracts governed by the Hague - Visby rules. However, in general, the duties of stowage and trimming should properly be seen as part of the duty of cargoworthiness, in that a cargo must be loaded so that it does not endanger the vessel. Stowing and trimming are processes which must be effected properly, prior to the shipment of dry bulk cargoes such as coal.

Stowing entails ensuring the cargo is placed on a vessel so that it is safe during the voyage which follows. Certain coals should not be placed near other coals, if one is potentially hazardous, and the other is not. Coal should in general, be kept away from sources of heat. The stability of the vessel is also important: the vessel must be properly balanced on sailing, such a way that it remains so during sailing.

Trimming<sup>12</sup> involves the levelling of a cargo during, or after loading, so that it is evenly distributed in each hold, and throughout the ship as a whole. This contributes to the stability of the vessel during a voyage, reduces stresses and maintains the vessel's structural length, and allows the holds to be filled efficiently. Furthermore (and particularly relevant to the shipping of coal), it reduces the possibility of spontaneous heating resulting from the formation of hot spots, since a disproportionate concentration in any one part of a hold, can lead to dangerous levels of heat. With coal cargoes, heat generated in the absence of proper trimming can produce pockets of trapped methane, and/or combustion.

It is submitted that practically, the ultimate responsibility for stowage and trimming falls on the shipowner. Loading operations are carried out with the involvement of the Master (usually represented by one of his officers), who must satisfy himself with the safety of a stowage plan for the cargo, and its' trimming. If different coals are to be loaded on board, the Master must control the separation, or blending of the coals, as the case may be. In this regard, the certificate as to a cargo's characteristics which is referred to in the IMDG Code<sup>13</sup>, assumes great significance.

Such procedures and arrangements have a considerable bearing on issues of seaworthiness and liabilities to holders of Bills of Lading, creating legal duties which a shipowner cannot easily contract out of. This responsibility placed on a Master/Shipowner is now reinforced by the recent Code of Safe Practice for Solid Bulk Cargoes, which places a prima facie duty upon a Master to ensure on a shipowner's behalf, that the cargo is properly stowed and trimmed. An illustration of the importance of these responsibilities is that even where a charterparty provides that the expense and responsibility for these duties lies with the charterers<sup>14;15</sup>, there is usually an express reservation of a power of supervision on the part of the Master<sup>16</sup>. Given the nature of coal cargoes, and the potential hazards which may arise, it should be clear that the duty of seaworthiness in its various forms, is vitally important in the shipping of coal. It is established law that this undertaking can only be excluded by express words releasing a shipowner from his obligations.

It must be noted that where the Carriage of Goods by Sea Act<sup>17</sup> applies, the implication of an absolute undertaking of seaworthiness has been substituted<sup>18</sup> by the undertaking:

*"to exercise due diligence to make the ship seaworthy; properly man, equip and supply the ship; and make the holds, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation"*<sup>19</sup>

It is common cause that not just the carrier himself is to be diligent, but the same duty rests on his servants and agents. Payne and Ivamy<sup>20</sup> opine that unseaworthiness by itself does not entitle a charterer to repudiate the contract, unless the delay in remedying the defect is such as to amount to a frustration of the charterparty.

## 2 Implied Undertaking of a Shipper/Charterer not to ship Dangerous Goods<sup>2</sup>

There is an implied undertaking by a shipper/charterer, that dangerous goods will not be shipped on board the vessel, which may cause damage to any of the parties engaged in the common adventure of the voyage. It is a breach of a shipper's common law duty to ship such goods without disclosing their character. This was clearly illustrated in Bamford v Goole and Sheffield Transport Company<sup>22</sup>, where the defendants delivered to the owner of a barge, a quantity of ferro-silicon for carriage, described as "general cargo". The defendants did not know, and could not reasonably be expected to know of the dangerous character of the goods. The poisonous gasses emitted killed the plaintiff's husband, and injured the plaintiff. The court held the defendants were liable, as they should have disclosed that the cargo was in fact ferro-silicon. The court affirmed that a shipper impliedly warrants that the goods are not dangerous, unless the carrier knows, or ought to know of their dangerous character.

The extent of this implied undertaking by a shipper, is that the goods shipped are fit for carriage in the ordinary way, and neither dangerous, nor dangerously packed; unless:

- (a) the shipper expressly notifies the carrier or his agent to the contrary, or
- (b) the carrier or his agents knows, or should know by the exercise of reasonable diligence, that the goods are in fact dangerous.<sup>23</sup>

In deciding whether the carrier knew of the dangerous nature of the goods, it is important to establish the opportunity the carrier or his agents had, to observe the goods. If the carrier had a reasonable opportunity to discover the dangers involved, he is presumed to have constructive knowledge thereof, and the shipper will not be liable for damage caused by the dangerous goods. However, if the shipper described or labelled the goods incorrectly, the shipper will be liable if the carrier could not reasonably have known the facts.<sup>24</sup>

Applying these principles to the shipping of coal, it would appear that by placing coal on board a vessel, with a certificate handed to the carrier which attests to the non-hazardous nature of the cargo, the shipper does undertake that the cargo is fit for carriage in the ordinary way. It is arguable that if no certificate is furnished, the carrier should know by the exercise of reasonable diligence that coal is potentially dangerous, effectively preventing any implication being imputed to the shipper. However, it will be suggested later that this is not the preferable view. Coal is most often not reactive, and to impute this into every cargo of coal, would disrupt normal legal and insurance processes and principles, damage the South African coal industry, and run counter to public policy considerations.

Following the Mitchell, Cotts decision,<sup>25</sup> Carver comments quite pertinently that this implied undertaking should not be seen as an implied term of the contract of affreightment, but rather a "warranty on which the carrier may rely in entering into that contract; if notice is given the carrier may refuse the goods (in which case there is no contract) or accept them, in which case the shipper is not in breach or account of of their dangerous character."<sup>26</sup>

The rights and duties of shipper and shipowner where dangerous goods are shipped was discussed in depth in Brass v Maitland.<sup>27</sup> In this case, bleaching powder containing chloride of lime was shipped in casks, and fumes from it had escaped, corroding other goods which the Master had, in ignorance stowed with the casks. The shipowners, having made good this damage to the owners of those goods, sued the shippers of the powder; firstly for shipping it, knowing of its dangerous character in casks inadequate for the purpose; and secondly, for shipping it, knowing its dangerous character, without giving notice of the danger to the Master, or another servant of the shipowner.

The court was agreed that it was the duty of a shipper to give warning of any danger when he is aware of it. This case provides further backing for the IMO guideline calling for a certificate of a coal's characteristics to be given to the Master.

The court differed as to a shipper's obligations when he is himself ignorant of the dangerous nature of the goods. Lord Campbell<sup>28</sup> said:

*"It seems much more just and expedient that although they were ignorant of the dangerous quality of the goods, or the insufficiency of the packing, the loss occasioned by the dangerous quality of the goods and the insufficient packing should be cast upon the shippers than upon the shipowners. Lord Tenterden, in the 7th Chapter of his Treatise on Shipping, where he treats of the general duties of the merchant, lays down*



*the general principle on which the doctrine rests: 'The hirer of anything must use it in a lawful manner, and according to the purposes for which it is let'. He then gives us an instance. 'The merchant must lade no prohibited or uncustomed goods by which the ship may be subject to detention or forfeiture'. **Pari ratione**, the merchant must not lade goods of a dangerous nature which the master and those employed in the navigation of the ship have no means of knowing to be of a dangerous nature, without giving notice of their nature, so that the master and those employed in the navigation of the ship may exercise an option to refuse to accept them, and if accepted may stow them where they will not endanger the rest of the cargo".*

Crompton J, however, opined differently:

*"What, then, is the nature and extent of this duty or engagement on the part of shippers of goods? On the one hand, it is clearly a tortious act, for the consequences of which the shippers are responsible, to ship goods apparently safe and fit to be carried, and from which the shipowner is ignorant that any danger is likely to arise, without notice of such goods being dangerous. If the shipper is aware of such danger, such shipment, when the scienter is made out, is clearly wrongful and tortious, and perhaps an action on a contract to give notice in such a case might be supported, though it would seem rather to be the subject of an action of tort. On the other hand, I cannot agree with the doctrine contended for on the part of the plaintiffs, that there is an absolute engagement on the part of the shipper that goods are safe and fit to be carried on the voyage. Such warranty would include the cases where the goods may be openly seen, and are known by the shipowner to be dangerous. It does not seem that there is any authority decisive on the point as to whether the shipper is liable for shipping dangerous goods without a communication of their nature, when neither he nor the shipowners are aware of the danger. It seems very difficult that the shipper can be liable for not communicating what he does not know. Supposing that hay or cotton should be shipped, apparently in a fit state, and not dangerous to the knowledge of the shippers and shipowners, but really being then in a dangerous state, from a tendency to heat, are the shippers to be liable for the consequences of fire from heating of such goods? .... I entertain great doubt whether either the duty or the warranty extends beyond the cases where the shipper has knowledge, or means of knowledge, of the dangerous nature of the goods when shipped and where he has been guilty of some negligence as shipper, as by shipping without communicating danger, which he had the means of knowing, and ought to have communicated. Probably, an engagement or duty may be implied that the shipper will use and take due and proper care and diligence not to deliver goods apparently safe, but really dangerous, without giving notice thereof, and any want of care in the course of the shipment in not communicating what he ought to communicate might be negligence for which he would be liable; but where no negligence is alleged, or where the plea negatives any alleged negligence, I doubt extremely whether any right of action can exist".*

Following this rationale in Acatos v Burns<sup>29</sup> the court found that when shipped, a cargo of maize was in a condition which was dangerous to the ship and cargo, although this was not apparent to the shipper, since its nature could not be ascertained by reasonable means, (which were all adopted, per the facts). The court held that no warranty was broken by the shipper.

While this point has not been authoritatively decided, it would appear that judicial opinion in England favours Crompton J.<sup>30</sup> Seen in the context of the shipping of coal, this is the more preferable view, since a shipper of coal may take all prudent and reasonable steps to investigate the coal placed on board, and provide the necessary certificates to the Master, and still the cargo may become dangerous while on the vessel.<sup>31</sup> It appears clearly from decided cases that this implied undertaking is aimed not so much at the actual fact of dangerous cargoes causing damage, as at the negligent, imprudent or careless conduct of a shipper of dangerous goods who does not exercise the necessary standard of care in placing the cargo on board, with notification to the Master.<sup>32</sup>

Carver<sup>33</sup> treats this question of a shipper's liability for shipping goods which cause damage, when he is ignorant of their nature, as an open one. After stating that the authorities show that the limitation to the legal right to contribution "applies where the need for the shipowner's sacrifice has been caused by negligence on his part, or on the part of his servants, in properly filling the ship for the voyage, or in making her seaworthy, or in navigating her" and also "precludes the claim to contribution of a cargo owner, where the danger which has led to a sacrifice of his goods was caused by their unfitness for shipment, if his conduct in shipping them was wrongful or negligent", he goes on to say "whether the limitation would apply where the condition of the ship, or of the goods, has produced the danger, but without any negligence on the part of the shipowner, or of the shipper, seems to be more doubtful".

A case in point, which actually dealt with the spontaneous combustion of coal, was Greenshields, Cowie and Company v Stephens and Sons<sup>34</sup>. While this decision principally focussed on this issue from the perspective of general average, the court held that the fact that a peril occasioning a general average sacrifice of cargo is brought about by the inherent vice of the cargo itself, does not preclude the cargo owner from claiming contribution from shipowner in general average, unless his conduct in shipping the goods was wrongful or negligent. Hence, it would appear that the shipper's undertaking that dangerous goods will not be placed on board ship, does not create strict liability; and that if prudent reasonable measures are taken, the shipper is not liable for damage from dangerous goods shipped in ignorance of their nature.

No warranty of safety is imputed to a shipper, where the Master or Shipowner has had notice of the potentially dangerous, nature of the goods, and chooses to accept the goods on board. In Brass v Maitland<sup>35</sup>, it was held to be a good defence that the Master knew that the casks contained bleaching power, and had the means of knowing and reasonably might and could and ought to have known, that it contained chloride of lime, and that he had the means of judging of the state and sufficiency of the casks of the packing of the contents. "on this supposition, the loss which has happened is to be imputed to the carelessness and misconduct of the Master .... in stowing the casks where they were likely to injure other goods".

The shipping of coal clearly presents difficulties, for when is a Master or shipowner deemed to be aware of the dangerous nature of the cargo? Coal is not always dangerous; similarly coal thought to be fit for carriage in the ordinary course of things, may in fact exhibit reactive tendencies during the voyage. Can a Master, shipowner or shipper then ever be ignorant of the dangerous nature of a cargo?<sup>1</sup> Should all coal cargoes loaded from South African ports be held to be dangerous cargoes, this would damage the reputation of South African coal, and lead to freight and insurance rates spiralling, effectively crippling the South African coal industry.

This issue has not come before a South African court, simply because in all instances, out of court settlements have resolved the dispute. It is submitted that should the courts be faced with this issue, the position should be as follows:

It was posited earlier that the certificates to be handed to a Master should by legislation be made compulsory for vessels loading coal at South African ports. Should this certificate suggest that the coals loaded on board do not exhibit a history of reactivity, then that coal must be regarded as fit in the ordinary way for carriage, and the shipper deemed to be ignorant of the dangerous nature of the coal. On the other hand, if that certificate does not give the coal a 'clean bill of health' the shipper has given notice of the damage to the Master, and by accepting those goods on board ship, the Master accepts that the goods loaded are "dangerous goods". Public policy considerations demand this interpretation, for the alternative is to have a situation where confusion and anomalies result from the uncertain position as to whether coal is dangerous, and should be imputed to be such.

### 3 Damages and Discharge of Necessity

When coal shipped on board a vessel becomes dangerous on board, two scenarios typically arise. The spontaneous combustion or methane explosion may cause damage or injury to the vessel, cargo or crew and the vessel proceeds to her destination. Alternatively, the Master may decide to put in at the nearest port, to discharge the cargo and preserve the safety of his vessel, crew, and other cargo<sup>36</sup>.

The costs of damage to a vessel can be high. No less extensive, may be the costs and losses flowing from a discharge of necessity. These may include bunkers used in deviating to the port concerned, port dues, handling and stevedoring costs and stockpiling/storage costs. In addition, that undamaged cargo discharged may have to be sold by the shipper at a considerable loss, for which he must be compensated<sup>37</sup>.

The Carriage of Goods by Sea Act<sup>38</sup> was enacted to amend the law of the carriage of goods by sea, and entrench the Hague-Visby Rules in our law. The Act provides that the Hague-Visby rules apply where the port of shipment is a port in the Republic, which obviously covers coal shipped from Richards Bay and Durban.

Article IV(4) of the Rules provides for the deviation required in the 'Discharge of Necessity', and precludes the carrier from being held liable for loss or damage flowing from such deviation:

*"Any deviation in saving, or attempting to save life or property at sea, or any reasonable deviation shall not be deemed to be an infringement or breach of these rules, or of the contract of carriage, and the carrier shall not be liable for any loss or damage resulting therefrom".*

Article IV(6) is particularly relevant to the shipping of coal, and provides that:

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

Hence, a discharge of necessity will, whether or not the carrier provided informed consent to their shipment of the cargo, always be for the shipper's account. The only exception to this, is that if the carrier did provide informed consent, he shall be held liable for a general average contribution for damage to the vessel or cargo. For the purposes of this section, it is submitted that "knowledge of [the coal's] nature and character" should have the same meaning suggested earlier in this work, viz., the carrier or his agent is deemed to have knowledge of the nature and character of the coal shipped, if the certificate handed to the Master or his agent indicates the dangerous nature and character of the coal shipped. Scrutton<sup>39</sup> suggests that the shipowner can exercise his rights under this rule, even if he is in breach of his obligations of seaworthiness. Although no case authority exists on this point, Scrutton is generally accepted, in his assertion that in exercising his rights per Article IV(6), the carrier must act reasonably.

#### 4 Duty of a Shipowner to Exercise Reasonable Care and Diligence

Should there be no express stipulations in a contract of affreightment, and subject to certain statutory exemptions from, and limitations of, liability, shipowners who are common carriers for reward, are liable for any loss of, or damage to the goods transported, unless resulting from *casus fortuitus*, an act of war, or from the inherent vice of the goods themselves, or by their being made the subject of a general average sacrifice. At common law, all common carriers who contract to carry goods undertake absolutely, in the absence of express provisions to the contrary, that their ship is seaworthy at the commencement of the voyage, that they will proceed on the voyage with reasonable despatch, and without unnecessary deviation.

English law has traditionally, in this context, distinguished between common and private carriers. Even if this distinction<sup>40</sup> does exist in South African shipping law, it is submitted for the purpose of this discussion, that private carriers are party to contracts of affreightment in this context, for no carriers of coal from South African ports can be said to fall within the definition of a common carrier.

The liability of a private carrier differs from that of a common carrier, as set out above, in that he is excused liability where he and his servants have exercised reasonable care and diligence, and is thus only liable where loss or damage results from his negligence. Hence, a private carrier of coal is not liable for loss of, or damage to, a cargo of coal, unless the conduct of him and his crew falls short of reasonable care and diligence. It is suggested that the conduct and procedures set out in the Code<sup>41</sup>, constitute a standard of

care and diligence for a Master and his crew to adhere to, in order to avoid liability. Should a methane build-up, or spontaneous heating cause damage, without these procedures being followed, a shipowner/carrier is not obligated to carry a cargo of coal. In agreeing to the contract of affreightment, a shipowner/carrier accepts the duty of responsibility for the cargo, and should reasonably acquaint himself with the procedures and guidelines for transport of that cargo. Hence, a shipowner/carrier ignorant of these measures, is in fact negligent, for prudence would require him to investigate and familiarise himself with what constitutes a reasonable standard of care and diligence.

This common-law position is reinforced by the provisions of the Hague-Visby rules, incorporated in the Carriage of Goods by Sea Act<sup>42</sup>. Article III(1) and III(2) are entirely consistent with the more particular provisions of the Code<sup>43</sup>, in placing a duty of diligence on a carrier as follows:-

### *Article III*

1. *The Carrier shall be bound before and at the beginning of the voyage to exercise due diligence to:-*
  - a) *make the ship seaworthy;*
  - b) *properly man, equip and supply the ship; and*
  - c) *make the holds, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation.*
  
2. *Subject to the provisions of Article IV, the carrier shall properly and carefully load, handle, stow, carry, keep, care for and discharge the goods carried.*

As read with each other, these provisions have the effect of providing statutory obligations on a carrier. For example, if a carrier provides a vessel for carrying coal, in which the holds are defective, in that air can flow through the coal bulk, or the hatches do not open or close properly, then the vessel is not 'fit and safe' for the coal's "reception, carriage and preservation",<sup>44</sup> and the carrier has failed in his duty to "properly and carefully load, handle, stow, carry, keep, care for and discharge the goods carried".<sup>45</sup>

5

### Inherent Vice

Article IV(2) of the Act qualifies the liability of a carrier/shipowner for loss, of or damage to , goods carried, by a number of exceptions. Article IV(2)(m) is relevant to the shipping of coal, and may operate to relieve a carrier from liability for loss, or damage to, the coal carried.

Article IV(2)(m) excludes liability for "wastage in bulk or weight, or any other loss or damage arising from inherent defect, quality or vice of the goods". Scrutton<sup>46</sup> describes inherent vice, as "the unfitness of the goods to withstand the ordinary incidents of the voyage, given the degree of care which the shipowner is required to exercise in relation to the goods". Hence, such a defect is present, when the damage arises through changes in the goods; when such changes are the results of ordinary processes going on in the goods themselves, without the aid of adventitious causes introduced by the carrier. A carrier may take advantage of this exception, if the coal shipped on board is certified to be fit for carriage in the ordinary way, and all reasonable, diligent precautions<sup>47</sup> are taken, yet the coal still heats and/or emits methane spontaneously.

The conclusion this leads to is that providing the carrier is not in breach of his obligations, to provide a seaworthy ship, liability for damage occasioned by such inherent vice must lie with the shipper of the goods. This may seem to be an anomalous result, in the context of the discussion and conclusions earlier on the implied warranty of a shipper, not to ship dangerous goods on board the vessel of the carrier, since the implied warranty and its position in the sequence of responsibilities, and law of a shipment, becomes quite redundant if the cargo combusts spontaneously, and the shipper is nonetheless still held responsible. Orthodox wisdom, is to use fermenting fruit or grain<sup>48</sup> as an illustration of the inherent vice in a cargo. These, however, are not dangerous goods,<sup>49</sup> and hence such examples need not be consistent with the implied undertaking of a shipper not to ship dangerous goods on board. Rather, the conceptual uncertainty created by the implied warranty not to ship dangerous goods, and its relation to the concept of inherent vice, is made more logical and sound by carefully circumscribing the concept of inherent vice, of potentially dangerous goods.

For the shipment of coal, this implied undertaking of a shipper not to ship dangerous goods, applies to coal *currently* dangerous at the time of shipment. Inherent vice in a coal cargo, describes a different situation: where coal is perfectly safe and certificated to be so at the time of shipment, but that damage is caused by some 'factor X' unrelated to an act of commission or omission by the carrier which is in breach of his duty of reasonable diligence. This 'factor X' is the Inherent Vice of the coal cargo. A typical

example would be when coal which has been stockpiled for a long time before loading. It is certificated to be a non-hazardous cargo, but the organic components of the cargo might have broken down such that 3-4 weeks on a vessel which offloads part-cargoes at various ports, or waits at a roadstead, may be sufficient for spontaneous heating to damage the cargo and/or the vessel.

As a final comment on inherent vice of coal as a cargo, it should be apparent why spontaneous heating/methane emission cannot be generalised as an inherent vice of coal cargoes: Apart from the fact that coals most often are in no danger of such hazards, and that always characterising such occurrences as instances of inherent vice would be scientifically inaccurate and incorrect; if carriers could rely on this defence whichever a coal cargo, reacted hazardously, the standard of care provided on coal carrying vessels would be far lower, and less diligent, at a time when public policy and the world's coal industry is calling for greater responsibility and diligence in the shipment of coal. Instead, by establishing clearly from the outset of the voyage, as the cargo is loaded, that the cargo is warranted to be fit for carriage, a heavy responsibility falls on the carrier to be diligent and prudent in his duty to carry the coal safely. In this regard, the Code of Safe Practice discussed, provides a clear guideline on how the carrier can discharge this responsibility.

## 6 General Average Implication

All loss<sup>50</sup> arising from extraordinary sacrifices made, or expenses incurred for the preservation of the ship and cargo, comes within the general average, and must be borne proportionally by all who are interested<sup>51</sup>. Bamford defines general average as "*a legal relationship created by implication of law among all those with an interest in a common carriage venture, when at a time of imminent danger during the venture, a person with authority commits for the common benefit a voluntary and reasonable act of extraordinary sacrifice or expenditure, and the venture is not entirely lost*".<sup>52</sup> It is conventional wisdom that the danger must not arise through any default for which the interest claiming a general average contribution is liable in law. Hence, should the danger arise from the spontaneous combustion of coal, the cargo owner is not prevented for claiming contribution for sacrifice of the cargo, unless he was guilty of a breach of contract or duty in shipping it.<sup>53</sup> Similarly, in the instance of deviation necessitated by a breach of the warranty of seaworthiness,<sup>54</sup> the shipowner is prevented from claiming contribution in general average towards expenses at the port of refuge to which he deviates.



In the context of the shipment of coal, general average loss arises either through the damaging of cargo by fire<sup>55</sup> (directly or indirectly) or through a sacrifice of freight.

### **Damage caused by Fire**

Damage to the cargo which is on fire, by pouring water on it, or scuttling the ship to extinguish fire, gives rise to a claim for general average contribution by the owner of the cargo destroyed or damaged.<sup>56</sup> There must however, be a real fire, since it has been held<sup>57</sup> that damage to a cargo by pouring in water when the captain thinks there is fire, when in fact there is none, is not the subject of contribution, however reasonable his belief.

A case in point is the decision in Greenshields, Cowie and Company v Stephens and Sons.<sup>58</sup> Coal was shipped on board the plaintiff's ship under bills of lading which provided that average was to be adjusted according to the York-Antwerp Rules of 1890, by rule 3 of which, "Damage done to ..... cargo ..... by water ..... in extinguishing a fire on board the ship shall be made good as general average; except that no compensation shall be made for damage to such portions of the .... bulk cargo .... as have been on fire". The coal was carried in four separate holds, and during the voyage, fire broke out in three by reason of the spontaneous combustion of the coal. In order to extinguish the fire, water was thrown into the holds, damaging that part of the cargo which had not been ignited. The cargo owners claimed from the ship, contribution on general average in respect of damage done by the water. It was held that the tendency or liability of the coal to combust spontaneously, was no answer to the claim of the owner of the cargo. Lord Alverstone CJ stated the law clearly, in saying that:

*"unless there is negligence or some wrong-doing on the part of the cargo owner or shipowner, as the case may be, such as would make it inequitable for him to enforce a general average claim, the fact that the original cause of the sacrifice arose from some inherent defect in the cargo or ship, is no answer to the claim".*<sup>59</sup>

A further principle established in this case, which is of considerable relevance in such cases, is that the phrase "such portions of the bulk cargo as have been on fire" in the exception clause of rule 3 of the York Antwerp Rules, did not refer to physical divisions of the cargo by means of bulkheads, so as to constitute the entire contents of each hold one 'portion' within the meaning of the rule; but meant so much of the coal on board the ship as had actually been ignited lost its value, and could not therefore be considered to be sacrificed for the general good.<sup>60</sup>

Although not covered by any of the authorities, it must follow that should a discharge of necessity be effected, of cargoes, or portions of cargoes, on fire, where this is for the common good (with no negligence or wrong-doing present), the owner of the cargo is entitled to a general average contribution from the other interests in the adventure. Should the circumstances not permit the undamaged cargo to be re-loaded, and carried to its destination, any loss incurred in the sale of the cargo will similarly be the subject to a general average contribution.

### **Sacrifice of Freight**

A second scenario of General Average loss which is possible in the shipment of coal, is the Sacrifice of freight by a shipowner in preserving a portion of the cargo, when part of the cargo has ignited. This general average contribution lies against the cargo. The leading case on this point, is the decision of Pirie v Middle Dock Company.<sup>61</sup> Coal carried on board a vessel bound to Singapore took fire by spontaneous combustion, placing the vessel and cargo in immediate danger of total destruction by fire. However, by the discharge of the cargo at a nearby port en route to the port of discharge, the vessel and most of the cargo were saved from destruction. As described above, circumstances made it impossible to carry the cargo to its destination, and the coal was sold at that port. The vessel was, as a result of this sale, prevented from earning her freight by delivering the cargo to the port of destination per the bill of lading. It was held that the shipowner was entitled to a general average contribution from the cargo, on account of the freight lost. This decision must be distinguished from that of Iredale v China Traders Insurance<sup>62</sup> on the particular facts of this latter decision. The coal cargo on board a vessel bound for Esquimalt ignited, and the Master of the vessel after jettisoning some, put into Buenos Aires, where it was discovered that the coal could not be carried safely to its destination. The voyage was therefore abandoned, and the freight lost. It was contended that the abandonment involved in putting into port and discharging the rest of the cargo, was a general average act, and that there was a sacrifice of freight. The court rejected this argument, since the condition of the cargo at the time the master altered course for Buenos Aires, was such that it was impossible to carry it to its destination so as to earn the freight. Bigham J<sup>63</sup> stated that:

*"where the thing sacrificed is already valueless at the time of the general average act, there can be no claim to contribution. Nothing of value is sacrificed, and therefore there is nothing of value to contribute to. The freight in fact was lost by fire ..... and not by any general average act at all".*

While the abandonment and sale involved a loss of freight, it was effected at a time when the freight was already hopelessly lost, and cannot therefore be said to have been sacrificed at all. The loss of freight on this portion of the cargo was not a general average sacrifice.

However, the freight on the coal jettisoned was held to be a subject to contribution, for although it was subsequently established that the freight was wholly lost at that point in time, the circumstances as known to the Master did not point to that conclusion. Bigham J<sup>64</sup> concluded that the Master could properly be held to have "substituted a certain loss of part, for a probable loss of the whole, of the adventure, so as to give rise to a general average claim".

The point of distinction between the abandonment and sale in Pirie's case and that in Iredale, is that on a finding of fact, the pouring of water on the burning coal in Pirie's case involved a sacrifice of the freight on the remainder of the coal. In other words, the court found that at the time of the general average act, the freight of the coals which were burning might still possibly have been earned and was not, therefore, already lost. There was "a real sacrifice, and not a mere destruction and casting off of that which had become already lost and consequently of no value".<sup>65</sup> In contrast, the finding of fact in Iredale's case was that by the time of the putative general average act, the condition and circumstances of the cargo was such that the freight was not capable of being earned.

## 7 Insurance Implications of Damage and/or Jettison

In a shipping venture, those with an interest will typically insure their interest against loss from a certain peril, or range of perils. The most widely used forms are insurance of cargo, and insurance of the vessel ('hull and machinery') by those with the appropriate insurable interest. It is not required in this work, to discuss exhaustively, the law on these insurance policies, which can be found in any standard work on the matter. At this point, discussion will be limited to the Institute Hull Clauses, and Institute Cargo Clauses, in so far as they have relevance to the shipment of coal, and the risks inherent in such carriage.<sup>66</sup>

### **Institute Time Clauses (Hulls), 1983**

Clause 6 of the Institute Time Clauses (Hulls) enumerates the primary perils against which ships are insured. Relevant to the shipping of coal is clause 6.1.2, which provides that this insurance covers loss of, or damage to the subject matter insured, caused by fire or explosion. Hence, spontaneous combustion, or methane-induced

explosions (such as that mentioned earlier in the case of the *Berge Charlotte*), are covered by this policy, and loss of damage, is recoverable, subject to the 'Sue and Labour' clause (clause 13).

### **Institute Cargo Clauses**

There are 3 sets of Institute Cargo Clauses, (A, B and C). In general, the 'A' clauses are all-risks clauses, subject to named exceptions in clauses 4 to 7, the 'C' clauses are intended to provide for standard cover for major casualties, while the 'B' clauses hold the middle ground, comprising the 'C' clauses plus some additional named risks.

The Institute Cargo Clauses ('A') offer cover against "all risks of loss of, or damage to, the subject matter insured", (subject to clauses 4 to 7),<sup>67</sup> including general average and salvage charges incurred to avoid, or in connection with the avoidance of loss from any cause, except those specifically excluded under this policy.

Clause 4.1 excludes cover for loss, damage, or expense attributable to wilful misconduct of the Assured. Hence, if a coal cargo owner takes out a policy in this form, and ships on board, coal he knows to be reactive, in breach of his warranty not to ship dangerous goods on board, any loss, damage, or expense sustained by him as a result of this 'wilful misconduct', will not be covered. Clause 4.3 extends this exclusion further, to loss, damage or expense caused by inherent vice or nature of the subject-matter insured. Hence, where the Assured under this policy is the owner of the coal cargo, the policy only covers damage to the cargo, caused by the breach of the implied warranty of seaworthiness by the shipowner/charterer or his servants, or their negligence or misconduct in handling the cargo carried; or general average loss or charges incurred by the assured, which do not arise from his own wilful misconduct, or the inherent vice of the cargo. Institute Time Clauses B and C specifically provide for cover against risks including fire and explosion, jettison and general average, but clauses 4.1 and 4.4 provide the exclusions as above.

### **Inherent Vice as an Exclusion**

Clause 4.4 of the Institute Cargo Clauses (A), (B) and (C), exclude liability for loss, damage, or expense caused by inherent vice, or the nature of the subject-matter insured. In *Greenshields*<sup>68</sup> loss through inherent vice was defined as "... anything which by reason of its own inherent qualities was lost without negligence by any one". The reason why loss or damage due to inherent vice is not covered by such policies appears to be that there is no uncertainty as to such loss, that it is of an inevitable nature, and

accordingly cannot be regarded as a risk, or attributed to a peril.<sup>69</sup> This, however, is not entirely convincing, particularly in the case of shipping coal as a cargo, since the inherent vice of such cargoes may, (or usually will not) result in loss or damage, Dillon and van Niekerk<sup>70</sup> suggest that "in this sense, loss or damage from inherent vice is a fortuitous event or casualty and the reason for its exclusion from the scope of the ordinary cover could possibly be because it is not an extraneous cause of the loss or damage". Arnould<sup>71</sup> seems to accord with this view, in commenting that "the distinction is between damage caused by any external occurrence and damage resulting solely from the nature of the thing itself. Damage from inherent vice may be just as capricious in its incidence, as damage caused by perils of the sea". It is suggested that inherent vice (which may or may not cause loss or damage) should be distinguished from inevitability or certainty of loss or damage as defences to a claim under the policy.<sup>72</sup> This principle is particularly relevant in the case of a cargo of coal, for it has been shown in an earlier discussion on inherent vice, that not all cargoes are likely to heat spontaneously, and that in any event the legal concept of inherent vice cannot be applied to all instances of spontaneous combustion.

The effect of these exclusions clauses of the Institute Cargo Clauses, is that an extremely heavy responsibility is placed on the owner of a coal cargo wishing to insure the cargo under these clauses, to avoid shipping coal which is known to be dangerous, or in which the inherent vice of that coal<sup>73</sup> could cause damage to the cargo. Clearly, in the light of these exclusions, it is critically important to understand the nature and characteristics of coal to be shipped, and that the shipment of coal should not be lightly undertaken. It has been shown that as far as it is possible to make generalisations about this commodity, there are three scenarios in which coal cargoes cause damage: firstly, cargoes which are dangerous due to their history of a tendency to react spontaneously, may be shipped in breach of the shipper's warranty not to ship dangerous goods. Secondly, damage may be caused by the inherent vice of the goods, which must be a carefully circumscribed conception of Inherent Vice, as developed earlier.<sup>74</sup> Thirdly, damage may be caused by the breach of the implied warranty of seaworthiness by the carrier, or by the negligence or misconduct of his servants.<sup>75</sup>

### **Mutual Marine Insurance: P & I Clubs**

In general, a P & I Club provides its members with liability cover which is not provided under their hull policies. A condition of cover is that every entered vessel is deemed to be fully insured against all the risks included in the hull policy. This form of insurance is relevant to the liability of shipowners as carriers in respect of cargo. This is a result of the development of the Hague Rules, and its subsequent amendments, and their incorporation into national legislation.<sup>76</sup> These rules prescribe and restrict the rights

and immunities of the carrier liable for cargo carried. P & I Clubs provide cover for a carrier against liability for cargo claims for loss or damage resulting from the carrier's breach of his obligation to make his ship seaworthy and cargoworthy, and to properly load, carry, care for, and discharge goods carried in the entered vessel.

P & I cover also includes cargo's proportion of general average which cannot be recovered from cargo interests because of a breach of the contract of carriage, such as unseaworthiness which necessitate the general average sacrifice.

## NOTES

1. In this context, for 'shipowner', include also a charterer in the position of a shipowner.
2. Carver paragraph 623.
3. Clause 2 of the Gencon charterparty imposes liability for unseaworthiness only where this is caused by the "personal want of due diligence on the part of the Owners or their Manager".
4. No. 1 of 1986.
5. At p187.
6. As distinct from the duty of stowage.
7. [1905] 1 KB 697 at 706.
8. (1938) 60 L.R. 85.
9. 1874 L.R.9 CP390 (Ex Ch).
10. For further discussion of stowage and trimming in the context of the passing of ownership, see Chapter 5.
11. At 199.
12. See references to trimming in the Code (Appendix A).
13. Appendix A.
14. For example, F.O.B.T. (Free on board, trimmed) or F.O.B.S. (Free on board, stowed).
15. See Chapter 5 for more on this.
16. See Clause 8 in the standard NYPE form.
17. 1 of 1986.
18. s2 of the act.
19. Article III(1)(a-c) as read with Article IV.
20. At 65.
21. This duty applies similarly to a charterer in the position of the shipper in a contract of carriage.
22. [1910]2 K.B.94.
23. See Atkin J in Mitchell, Cotts v Steel [1916]2 K.B. 610 at 614; Bamford v Goole.

24. This common law position is reinforced by the Articles IV(2)(q) and IV(3) of the Hague-Visby rules, as included in the Carriage of Goods by Sea Act No. 1 of 1986.
25. `Supra.
26. p841.
27. (1856)26 LJQB 49.
28. at 54.
29. (1878)3 Ex D 282.
30. Acatos v Burns (supra); Bamford v Goole and Sheffield Transport Co. at 104; Mitchell, Cotts v Steel at 613.
31. This should be seen in the light of earlier discussion, in which it was concluded that the complexity of the chemical properties of coal, and the spontaneous heating process, make pigeon-holing the coals as safe, or not, inaccurate.
32. See (infra) the discussion on inherent vice.
33. 4ed at P443.
34. [1908]1 K.B. fl.
35. Supra, at 486.
36. "Discharge of Necessity".
37. It has never, in recent memory, happened that coal discharged in these circumstances, has been loaded back on to a vessel proceeding to the destination per the Bill of Lading. The handling and storage costs, and danger of contamination and/or degradation prohibit this.
38. s1(a).
39. 18ed, p444.
40. For more on this distinction, see Chorley and Giles at p166, and Scrutton p198.
41. Code of Practice for the Safe Handling and Ocean Transport of South African Coal.
42. 1 of 1986. Article IV(3) states that:  
  
"the shipper shall not be responsible for loss of damage .... sustained by the carrier or the ship, arising or resulting from any cause without the act, fault, or neglect of the shipper, his agents, or servants".
43. Code of Practice - see n41.



44. Article III(1)(c).
45. Article III(2). This overlaps with the duty of cargoworthiness discussed (supra).
46. at 224.
47. As discussed earlier in the context of Act 1 of 1986.
48. See Carver and Scrutton.
49. Chapter 1.
50. See Chapter 4.3 for an illustration of the consequences, or types of damage or loss resulting from a coal cargo heating, or emitting methane.
51. Per Lawrence J, in Birkley v Presgrave (1801) 1 East 2200 at 228.
52. At 349.
53. See discussion (supra).
54. For example, by providing a vessel unfit for the shipment of coal, due to the hold allowing air to ingress through the coal bulk.
55. Scrutton at 278.
56. Although the most advisable method of extinguishing a fire in a hold is to batten the hold, and use carbon dioxide gas or steam; in most cases water has been used, giving rise to general average loss.
57. Watson v Fireman's Fund Company [1922] 2 KB 355.
58. [1908] AC 431.
59. per Lord Alverstone CJ at 57-8.
60. Goodacre at 568 raises the issue of modern fire-fighting methods such as the use of carbon dioxide gas, resulting in heavy smoke forming and being driven to other parts of the cargo. It would, he contends, be for surveyors to establish whether a commodity was inevitably smoke-damaged by the fire itself, or whether the fire, resulted in the smoke damage.
61. (1881) 44 L.T. 426.
62. [1899] 2 Q.B. 356.
63. at 358.
64. at 360.
65. Pirie's case; Bigham J at 430.

66. For a clear, concise description of the history, current law, and forms of marine insurance policies, see Chorley and Giles at 510 et seq. The position of the applicable law is discussed by Staniland in LAWSA Vol 12 at p293 et seq.
67. Per clause 1.
68. At 150.
69. Sassoon - C.I.F. and F.O.B. Contracts, 2ed at 180-1.
70. At 150.
71. Paragraph 762.
72. For this argument, I have followed the lucid analysis of Dillon and van Niekerk at p149-150.
73. See discussion (supra) on Inherent Vice.
74. Chapter 4.5.
75. Chapter 4.1.
76. Act 1 of 1986.

## CHAPTER 5

### *FREE ON BOARD SALES*

#### 1. Problems of F.O.B. Sales of Coal

This Chapter outlines and discusses the sale and shipment of coal which is typically done on F.O.B. or F.O.B.T. terms. Each has its own characteristics and rules for the allocation and transfer of the responsibilities and rights of the parties to the sale.

The nature and organisation of the international coal market is such that commodity traders are almost always involved in the transaction, as 'middlemen' interposed between the producer and consumer. These traders purchase coal from producers on a principal to principal basis, and then sell the commodity to the ultimate consumer for a profit. The typical scenario for the sale of coal from a South African producer is as follows: Producer A agrees with Trader X, to sell 100 000 mt of coal on a F.O.B. basis on the understanding<sup>1</sup> that the coal will be placed into a Power Utility 'Y' in Portugal. Trader X, who buys the coal F.O.B., arranges for a vessel to be Chartered, and on-sells the cargo on a C.I.F. basis to company 'Y' in Portugal.

The reasons for the preponderance of F.O.B. sales by producers, are all rooted in commercial pragmatism. Mining companies generally know little of shipping, and the 'Shipping Department' most profess to have, are no more than logistical co-ordination centres, responsible for transport from the colliery to the ship's rail. From a combination of ignorance and indifference, mining companies view the shipping of coal as some specialised, esoteric procedure fraught with risks, which is best left to traders to worry about. Trading companies have identified this gap in the market, and developed specialised, highly informed shipping departments to charter their own vessels. In the competitive, complex International market, \$0,50 per ton saved through effective and efficient chartering is often the difference for a trader between profit and loss, or success and failure with a deal.

At this point, this might seem an ideal situation, satisfying both parties' agenda. The producer sells the coal F.O.B., and according to the traditional formulation, risk passes to the buyer/trader as the coal 'crosses the ship's rail'. The latter party, from that moment, assumes the property and risk of that cargo. However, this situation has significant drawbacks, which do not satisfy public policy, nor (ultimately) commercial sense: Traders, with no vested interest in the coal, and only an immediate interest in making as much money as possible from the cargo itself, tend to contract for the

cheapest charter available, which often involves the oldest vessels available, which are in poor condition, even to the extent that their seaworthiness is questionable. While the Richards Bay Coal Terminal will exclude the worst of these decrepit pensioners of the world's bulk cargo fleet, ports such as Maputo are more accommodating. In the past decade, most instances of South African coal becoming hazardous during a voyage, involve coal shipped out of Maputo.

Apart from such extreme scenarios, the more usual problem resulting from the system of sales described, is that should the coal loaded on board trader X's vessel heat spontaneously, damaging the other cargo, or vessel itself, trader X duly collects an insurance payout, and regards the event as merely another entry in its' trading account. However, the ramifications of this extend further than the loss of a cargo for the producer itself, and its national industry. The heating of the cargo and its loss, echoes resoundingly throughout the coal and shipping industries, with traders, shippers, and insurers wary of buying that coal. The marketing implications of this may be such that the future of producer itself is placed under question. The insurance implications of this is that the shipping of that coal in particular, and coal in general, is regarded as a greater risk, with the consequent increase in premiums as insurers realise the extent of the potential loss of such cargoes. As the C.I.F. delivery of that coal to an end-user becomes more expensive, so that coal becomes a less competitive, viable purchase. Ultimately, the coal producer suffers most through such an occurrence, as it bears 'market reputation responsibility. With such F.O.B. sales, there is at the passing of the cargo over the ship's rail, a divergence of legal risk, from the risk of losing reputation in the market.

A further problem associated with F.O.B. sales, is that by using a Bill of Lading as a document of title, the trader can in fact sell that cargo to another party other than that intended by the contract of purchase with the producer of coal. The producer's ownership in the cargo passed to the trader as the cargo passed the ship's rail, and hence the producer cannot prevent this taking place. In the circumstances, this scenario may well constitute a breach of the contract between the trader and the producer, entitling the latter to terminate this contract. However, the fact that coal is sold into a market other than the intended, may have considerably damaging consequences for that producer. For example the Producer could have a restraint of trade agreement preventing the sale of coal into a certain country, and it actually does get placed there through the agency of a trader. The relationships, and market networks built by that producer would be damaged irretrievably. Hence, the tenuous chain of risk and ownership consequent upon F.O.B. sales is potentially damaging to an F.O.B. seller of coal.

Finally, a disquieting feature of the F.O.B. sales of coal, is that the shipper of the coal on board the carrier's vessel is the trader. Can that shipper/trader, not possessed of the same knowledge of that coal as the producer and F.O.B. seller, really warrant that the goods shipped on board are not dangerous? It is the F.O.B. seller (who is not the shipper) who has brought the coal to the loading port, and obtained certificates from the South African Bureau of Standards (or an equivalent authority) that the coal is fit for shipment.

Unless producers become the shipper and charterer of a vessel in a venture of carriage, and take a more active role in assuming responsibility for the cargo shipped on board, that producer will continue to risk its' reputation and future on the care of a trader/shipper. (Who, as explained, has not the same vested interest in the product, nor the knowledge of that product's characteristics). The overwhelming conclusion is that the practice of F.O.B. sales is one fraught with hazards for a producer.

Producers, by becoming involved as C.I.F. sellers, can ensure the safe shipment of their coal. While few producers are big enough to warrant owning their own vessels, a recent article in a shipping journal<sup>2</sup> illustrates the potential control producers could exert over the bulk shipment of their coal. Australian minerals giant, BHP, owned a Cape size bulk carrier, which after 19 years, no longer met the exacting standards of BHP's own chartering department. BHP sold the vessel for scrap, only to discover that the shipbreaker which purchased the vessel, resold it for further trading. BHP's chartering department has decided to blacklist the vessel, and has requested its customers and other producers to follow suit. This example suggests that the problems of F.O.B. sales, would disappear if other producer's followed BHP's example.

## 2. Free On Board Stowed Or Trimmed<sup>3</sup>

It is quite common that coal loaded on board under F.O.B. sales, are in fact sold F.O.B.T./F.O.B.S. (free on board trimmed, free on board stowed). The purpose of such terms is to place the responsibility for their performance on the seller, rather than leaving it to the buyer. Since there are included in the contract of sale, it is clear in such cases that the parties intend them to be enforced, by use of the principles of delivery, risk and property in goods. However, the law on these terms has not been decided, and since they are commonly inserted in contracts, discussion on these is appropriate.

## **Stowing and Trimming**

Stowing and Trimming are processes which must be properly executed prior to the shipment of many bulk cargoes. Stowing involves ensuring that the cargo is positioned on board the vessel in a way which renders it safe during the proposed voyage. For example, coal should not be stowed near parts of the ship liable to generate heat, for this can damage the cargo, placing it and the vessel itself in danger. In addition, the distribution of the material must take account of stability and stresses, and the vessel must be loaded so as to ensure the balance of the material throughout the voyage. Trimming, which is particularly common on contracts for the sale is particularly common in contracts for the sale and shipment of coal, involves the levelling of a cargo

during, or shortly after loading, so that it is evenly distributed in each hold, and throughout the ship as a whole. This process not only ensures the stability of the vessel and reduces stresses on its structure, but also allows the holds to be more efficiently filled. Most importantly however, trimming a cargo of coal reduces the likelihood of spontaneous heating or combustion resulting from 'hot-spots' forming in the coal bulk, for a concentration of coal in pockets in a part of the hold, can lead to dangerous levels of heat. An untrimmed coal cargo (particularly when heating spontaneously is susceptible to trapped pockets of methane forming, which can have disastrous consequences.

While it is true that to an extent, the ultimate responsibility for stowing and trimming will fall on the shipowner, the expenses of, and responsibility for stowing and trimming may be shifted from the buyer (who as a trader, would have chartered the vessel) to the seller. In an ordinary F.O.B. contract, the seller's responsibility for (and risk in) the goods terminates as they cross the ship's rail; hence the costs and responsibility of stowing and/or trimming therefore accrue naturally to the buyer. However, the express insertion of F.O.B.T./F.O.B.S. in a contract, evidences the intention of the parties to shift these costs and responsibilities to the seller.

In a standard F.O.B. contract, the seller's duty is to deliver the goods on board, and neither risk nor property will normally pass before shipment, in the case of risk, and the exchange of documents, in the case of property. The corollary of this is that if the seller does not get the goods on board, he has not made delivery of the goods.

Reynolds argues that the law should be that these principles are extended to account for stowing and trimming, so as to delay delivery, risk, and the passing of property. This would suit the buyer, who could reject goods that were not stowed or trimmed, as well as giving him a means of ensuring these processes were completed satisfactorily. The seller, having contracted to stow or trim, is entreated to do no more than perform his contractual obligations.

While there certainly is some merit in these arguments of Reynolds', this position must not be supported. Consider Reynolds' assertion that the buyer could reject goods that were not properly stowed or trimmed. Apart from the fact that Reynolds' formulation does not provide a guideline for what constitutes completed loading or stowing, even if loading or stowing have not been completed, is the F.O.B. buyer really in a position to reject the goods? Apart from the costs of unloading and stockpiling the material, the costs of the charter and obligations to the eventual customer for the coal suggest that rejection is not a viable option for the material. Instead, it is submitted that F.O.B.S./F.O.B.T. refer only to who is to pay for the function of stowing or trimming. This is surely the most logical approach. To meddle with the 'passing of the ship's rail' formulation entrenched on the law of Free on Board sales, would be to invite confusion and place a penumbra of uncertainty around the completion of delivery, and passing of risk and ownership in the cargo. For example, if the vessel departs, despite the absence

of stowing/trimming, according to Reynolds' theory, the coal belongs to the seller still, as delivery has not taken place, nor has property or risk in the goods passed to the buyer. The escape being lost in this maze of legal confusion, Reynolds suggests that the buyer should be said to have accepted an earlier delivery, at the moment of sailing; which, apart from being a rather extraordinary provision, defeats the entire purpose of his theory. In any event, surely stowing and trimming are physical processes more consistent with the obligations of a shipowner, who after all is under a duty to supply a seaworthy, and cargoworthy vessel. What are stowing and trimming, if not incidental to the duties of care placed upon a shipowner in the transit of a cargo? He, after all, is possessed of the expertise in dealing with cargoes in general and that vessel in particular.

To follow Reynolds suggestion, is to entertain a situation where it may arise that the goods have not legally been delivered to the buyer, even when the cargo is on a vessel chartered by the buyer, and the stowing/trimming work is being done by the crew itself, or stevedores contracted to the ship. (A contract to which the buyer is not party).

In conclusion, the terms F.O.B.T./F.O.B.S. must only be construed as affecting the payment for the stowing and trimming processes. To remove the responsibility for completing these processes, and alter the well-established doctrines of F.O.B. Sales, would be most imprudent.

## NOTES

1. For reasons of Marketing Strategy and control over markets, it is most unusual that producers sell coal without an assurance as to the customer for the cargo. The producer is, most often, involved in an indirect relationship with the end-user.
2. "Tradewinds" Volume 5, No. 33 (August 19, 1994) page 1.
3. For this section, I have drawn upon an article by Barney Reynolds; [1994] Lloyds Maritime and Commercial Law Quarterly, p119 et seq.



## CHAPTER 6

### CONCLUSIONS

In this document, the characteristics of coal cargoes have been illustrated, and shown to be difficult to categorise, or pigeon-hole precisely, for legal purposes which tend to have a dogmatic approach. Coal cannot be said to be a dangerous good, nor is it not a dangerous good. Similarly, it is logically and scientifically incorrect to indiscriminately categorise all problems with coal cargoes, as resulting from the inherent vice of coal. To hold otherwise, would be counter to public policy, and industry practice. A circumscribed application of the concept of inherent vice has been proposed.

Instead, a pragmatic legal approach to the shipment of coal cargoes has been suggested, which takes account of this complexity, but places great emphasis on the implied warranty of a shipper not to ship dangerous goods, and the duty of a shipowner/charterer to provide a ship that is both seaworthy and cargoworthy. If these obligations are observed by the parties to the sale and carriage of coal, in conjunction with the Code of Safe Practice for the Safe Handling and Ocean Transport of South African Coal, then it is highly improbable that carriage of coal cargoes will involve any dangers.

Consistent with this, it has been suggested that coal producers in South Africa should for their own benefit, and that of the industry as a whole, play a more active role in the carriage of coal, by moving towards increased use of CIF Sales. The divergence of legal risk, and the risk of losing market reputation, makes this desirable.

The Code, which has been referred to with approval in this thesis, is based on the International Code of Safe Practice for Solid Bulk Cargoes, 1991 and as such represents a substantial improvement on its predecessor. It is proposed that the contents of this Code, be adopted into South African Legislation. A separate Act is not necessary, and instead the contents of the code should be included as a chapter in the Schedule 2 to the Merchant Shipping Act 57 of 1951. The Chapter VI, (Carriage of Grain) provides a precedent for provisions particular to a certain cargo, being included in legislation.

Apart from reasons of responsibility to the Coal Mining and Shipping Industries, this would also indirectly assist in preserving competitive chartering rates and insurance premiums. In this regard, the reputation Maputo has, for allowing questionable cargoes to be shipped, has prevented this port becoming a major coal shipping centre, even though the Matola and McMyller terminals are capable for approximately 400 000 mt throughput per annum. Richards Bay Coal Terminal has established stringent systems of quality control, and acquired an excellent reputation for shipping safe cargoes. Formally legislating the provisions contained in the Code would ensure that South African coal is shipped safely in the future.

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