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WORLD MARITIME UNIVERSITY

Malmö, Sweden

**STUDY ON MAJOR LEGAL ISSUES OF CAR-
RIAGE OF DANGEROUS GOODS BY SEA**

By

QI SHAOJIANG

The People's Republic of China

A dissertation submitted to the World Maritime University in partial
Fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE

In

MARITIME AFFAIRS

(MARITIME LAW AND POLICY)

2013

DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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ABSTRACT

Title of Dissertation: **Study on Major Legal Issues of Carriage of Dangerous Goods by Sea**

Degree: **MSc**

This dissertation focuses on major legal issues of carriage of dangerous goods by sea. Due to the particular features and high risk of dangerous goods during the process of transportation, dangerous goods transportation by sea has always caught the public eye. Nowadays, due to technological development and increasing volume of dangerous goods trade, concerns relating to its legal issues have been seen as a critical matter in the shipping industry.

This study discusses the present situation and the trend of maritime dangerous goods legislation first, and then, looks into the various definitions of dangerous goods in different conventions and regulations. The argument largely focuses on the critical issue that there are no unified definitions across various laws. Therefore, this research will examine a definition of dangerous goods in order to analyze the major legal issues of carriage of dangerous goods by sea.

In regards to legal issues of shipper and carrier, the thesis focuses on their qualification, rights, obligations and liabilities respectively. By comparing the differences among four regulations, namely, Hague Rules, Hamburg Rules, Rotterdam Rules and China Maritime Code (and any applicable Chinese national laws), clarification of the foregoing topic is presented. The study concludes the need of amendment of China Maritime Code in terms of carriage of dangerous goods by sea.

KEYWORDS: Dangerous Goods, Right, Responsibility, Liability

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES AND FIGURES	x
LIST OF ABBREVIATIONS.....	xi
CHAPTER I INTRODUCTION.....	1
1.1 The features of dangerous goods	1
1.2 Purpose and Structure of the Dissertation	4
CHAPTER II OVERVIEW OF THE LAW NORM ON THE ISSUES OF DANGEROUS CARGO TRANSPORTATION AT SEA	6
2.1 Overview of legislation issues.....	6
2.2 The present situation on maritime dangerous goods legislation.....	8
2.2.1 Legal norms on the rights and obligations under maritime dangerous goods carriage contract	8
2.2.2 Technical legal norms	10
2.3 Developing trend of maritime dangerous goods legislation.....	14
2.4 Definition of dangerous cargo	15
2.4.1 Types of definition	15
2.4.2 Definition in international convention	16
2.4.3 The definition of dangerous goods in this paper	19

CHAPTER III THE LEGAL ISSUES OF THE SHIPPER IN THE LEGAL RELATIONS OF DANGEROUS GOODS TRANSPORTATION AT SEA	22
3.1 The legal right of the dangerous goods shipper.....	23
3.1.1 The right of requiring a carrier to transport cargo in safety	23
3.1.2 The right of claim.....	25
3.2 Special right of the shipper of other cargoes shipped on the same ship.....	27
3.2.1 The right to be informed	27
3.2.2 The right of claim.....	28
3.3 Obligation of dangerous cargo shipper.....	28
3.3.1 Obligation of providing dangerous cargo as per contract	29
3.3.2 Obligation of providing necessary documents needed in transportation .	29
3.3.3 Obligation of packaging properly for dangerous goods.....	31
3.3.4 Obligation of marking and labeling properly dangerous goods.....	34
3.3.5 Obligation of notification.....	36
3.4 Liability of dangerous goods shipper	39
3.4.1 Basis of liability of dangerous goods shipper	40
3.4.2 Specific content of dangerous goods shipper's liability	41
CHAPTER IV THE LEGAL ISSUES OF THE CARRIER IN THE LEGAL RELATION OF DANGEROUS GOODS TRANSPORTATION AT SEA	42
4.1 The right of dangerous goods carrier.....	42
4.1.1 The right of refusal to carry	42
4.1.2 The right of disposal.....	44
4.2 Obligation of dangerous goods carrier	47
4.2.1 Obligation of exercising due diligence to make the ship seaworthy	48

4.2.2	Obligation of managing dangerous goods.....	49
4.2.3	Obligation of issuing B/L.....	50
4.3	Liability of dangerous goods carrier.....	50
4.3.1	Basis of liability of dangerous goods carrier.....	50
4.3.2	Relationship between privilege of dangerous goods carrier and its violation of seaworthiness obligation.....	51
CHAPTER V LEGAL ISSUES OF CARRIAGE OF DANGEROUS GOODS BY SEA IN CHINA.....		52
5.1	Legislation situation of maritime dangerous goods in China.....	52
5.1.1	Overview of maritime dangerous goods legislation in China.....	52
5.1.2	Consolidation to International legislation: China's response.....	53
5.1.3	Technical legal norms of maritime dangerous goods in China.....	53
5.2	Legal concerns of the shipper in China	55
5.2.1	The scope of dangerous goods shipper	55
5.2.2	Legal qualification of dangerous goods shipper in China maritime law system.....	56
5.2.3	Legal right of dangerous goods shipper in China maritime law system ..	57
5.2.4	Obligations of dangerous goods shipper in China maritime law system .	58
5.2.5	The liability of dangerous goods shipper in China maritime law system	62
5.3	Legal concerns of the carrier in China	63
5.3.1	The scope of dangerous cargo carrier	64
5.3.2	Legal qualification of Dangerous cargo carrier in China maritime law system.....	64
5.3.3	Legal right of dangerous goods carrier in China maritime law system ...	66

5.3.4 Obligations of dangerous goods carrier in China maritime law system ..	67
5.3.5 Liability of dangerous goods carrier in China maritime law system	68
CHAPTER VI CONCLUSION	70
REFERENCES	74
APPENDICES	79

LIST OF TABLES AND FIGURES

Figure 1.1	Dangerous goods transport flows in the Baltic Sea region	2
Table 1.1	Dangerous goods marine and inland waterways incidents and accidents in the Baltic Sea regions between 2001 and 2006	3
Figure 1.2	China Seaborne Liquid Gas Imports, China Seaborne Crude Oil Imports, China Seaborne Coal Imports Liquid Gas	4
Figure 3.1	Relationship between Shipper, Carrier and Other Stakeholders	23
Figure 3.2	The perils of packing	32
Figure 3.3	Dangerous goods lables in IMDG Code	34
Table 5.1	Main national standards of dangerous goods in China	54

LIST OF ABBREVIATIONS

CMSA	China Maritime Safety Administration
UNCETD	United Nations Committee of Experts on the Transport of Dangerous Goods
GB	China National Standard
B/L	Bill of Lading
FOB	Free On Board
SOLAS	Safety of Life at Sea
IMDG Code	International Maritime Dangerous Goods Code
Hague Rules	International Convention for the Unification of Certain Rules of Law relating to Bills of Lading
Hamburg Rules	United Nations Convention on the Carriage of Goods by Sea
Rotterdam Rules	United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea
Hague-Visby-Rules	International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading
CMI	COMITE MARITIME INTERNATIONAL
IMO	International Maritime Organization
ECOSOC	United Nations economic and social council
UNCETDG	United Nations Committee of Experts on the Transport of Dangerous Goods
COGSA	Carriage of Goods by Sea Act
MARPOL 73/78	Regulations for the prevention of pollution by harmful substances carried by sea in packaged form
IMSBC Code	International Maritime Solid Bulk Cargoes Code

IBC Code	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
IGC Code	International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk
MOT	Ministry of Transport
NVOCC	On-vessel Operating Common Carrier
COW	Crude Oil Washing
CINS	Cargo Incident Notification System
PSN	Proper Shipping Name

CHAPTER I INTRODUCTION

1.1 The features of dangerous goods

With the improvement of science and technology and rapid development of social economics, more and more dangerous articles are involved in various fields of industries. The Dictionary published by the Shanghai Communication University Press explains dangerous goods as “the articles which are liable to combustion, explosion, corrosion, toxics, and radioactivity, as well as give rise to human casualty and property loss, shall take special protecting facilitates and measures” (Shanghai Communication University, 2005).

Dangerous goods are known as the following features: Firstly, there exists many categories of dangerous goods, nevertheless more and more new dangerous goods come out every year. Secondly, dangerous goods are widely used across various industries. In light of the development of the chemical industry, new processes applied in the industries, such as metallurgical industry and machine building industry, and light textile industry (i.e. production of synthetic fiber). A wide use of pesticides and chemical fertilizers is, needless to say, remarkable. Dangerous articles have spread to all sectors related to the lives of human beings. Thirdly, they are of danger and strong harmfulness. Dan-

gerous goods are likely to cause explosion, combustion, toxicity, and corrosion, and liable to contribute to major accidents threatening the safety of person and property during the process of carriage, storing and custody. At the same time, most dangerous goods are of multi-nature, for example, methylbenzene is flammable and toxic, which allows it more dangerous and complex to properly handle, thus it will affect the ways in which workers prevent possible accidents. One of the key elements to avoid incidents relating to dangerous goods transport is to make both shipper and carrier understand their roles in terms of their legal rights and obligations. In general, dangerous goods are transported by road, rail and sea. The amount of dangerous goods carried by each mode of transport varies depending on areas of item locations. For example, in the Baltic Sea region, Figure 1.1 shows a variation of transportation modes of dangerous goods.

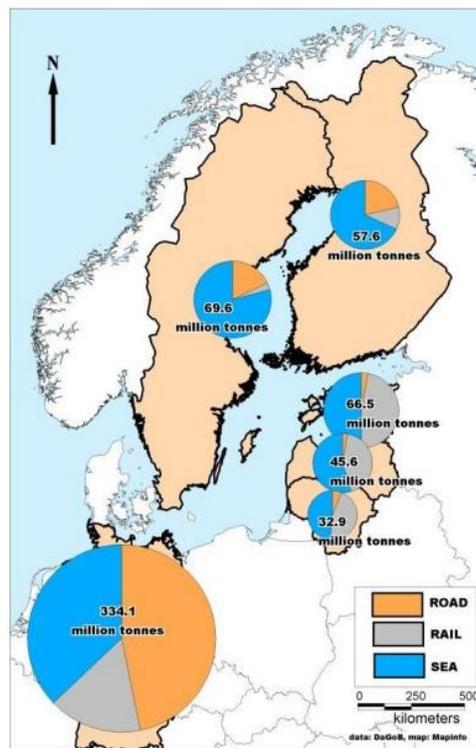


Figure 1.1: Dangerous goods transport flows in the Baltic Sea region
Source: (Suominen & Suhonen, 2007)

Nevertheless, sea transportation of dangerous goods in the Baltic Sea region is generally the primary method, and the related safety issues by sea transport arise naturally.

In the field of dangerous goods transportation, maritime dangerous goods transportation should draw more attention compared with other modes of transportation. The main reasons behind this argument are, firstly, the amount of dangerous goods delivered around the world by sea is unduly larger than by other means; secondly, dangerous goods transportation at sea can involve huge environmental risks, such as pollution and toxic effect on sea life; thirdly, in practice, maritime dangerous goods accidents happen occasionally (See Table 1.1); and fourthly, legal relation of maritime dangerous goods carriage is unique, compared with that of other transportation modes, as the imbalance of the legal status of shipper and carrier under the maritime dangerous goods carriage contract (i.e. asymmetry) can create an issue.

Table 1.1: Dangerous goods marine and inland waterways incidents and accidents in the Baltic Sea regions between 2001 and 2006

Year	Total	Fatalities
2001	6	0
2002	10	0
2003	5	4
2004	7	1
2005	9	0
2006	16	0

Source: (Suominen & Suhonen, 2007)

In summary, be it in the matter of legal provisions or practical operation, maritime dangerous goods carriage appears to be a unique topic of study, which has served an ongoing debate in the shipping industry. Therefore, it is necessary to research more on this issue which will be explored in this dissertation.

1.2 Purpose and Structure of the Dissertation

With the flourishing development of international trade, the western developed countries will transfer their dangerous goods production processing industries to developing countries, which implies that dangerous goods transport generally presents a trend of unidirectional flow. China, as the largest developing country in the world, has become an important distribution center of maritime dangerous goods, and thus research on legal status in China in terms of dangerous goods transportation by sea has great necessity.

Figure 1.2 shows the trend of 3 kinds of Chinese seaborne dangerous goods import trends, liquid gas, crude oil and coal.

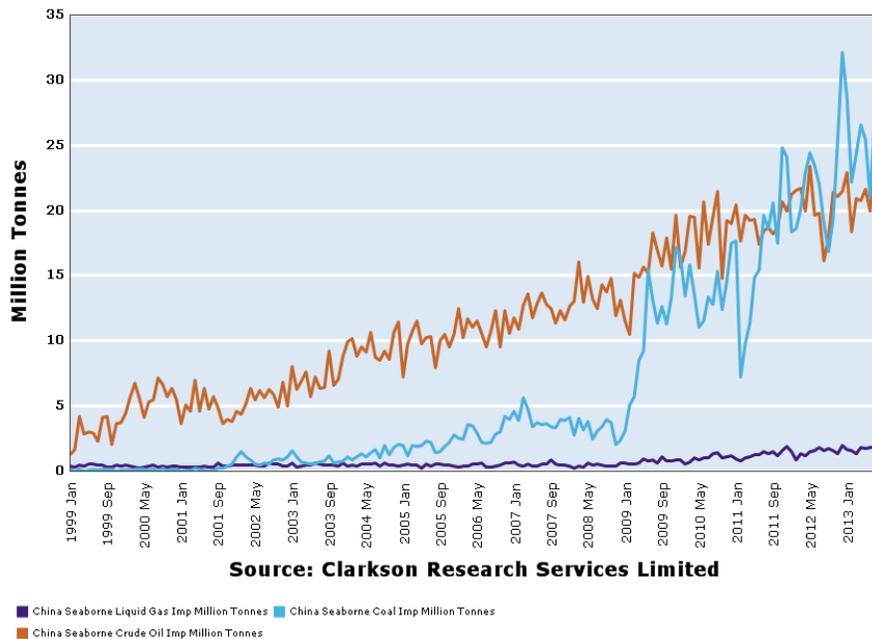


Figure 1.2: China Seaborne Liquid Gas Imports, China Seaborne Crude Oil Imports, China Seaborne Coal Imports Liquid Gas (CLARKSONS, 2010)

At present, Chinese maritime law theory research mainly focuses on the issues of the

carriage of dangerous goods safety supervision and management, the carriage of dangerous goods damages compulsory insurance, and the rights and obligations of the parties to a contract of carriage of dangerous goods by sea.

This dissertation aims to bridge the international regulations relating to dangerous goods by sea and Chinese national laws. It begins with an overview of the characteristics of dangerous goods by sea. By applying comparative analysis method, , the study focuses on discussing the definitions of dangerous goods, present situation, development trends of legislation on dangerous goods transportation by sea, and finally legal relations of shipper and carrier of dangerous goods. Based on the analysis and discussion, this study will further contribute to suggest the improvement of the maritime legislation in China in maritime dangerous goods transport.

CHAPTER II OVERVIEW OF THE LAW NORM ON THE ISSUES OF DANGEROUS CARGO TRANSPORTATION AT SEA

2.1 Overview of legislation issues

Commercial law, also known as business law, is the body of law that applies to the rights, relations, and conduct of persons and businesses engaged in commerce, merchandising, trade, and sales. It is often considered to be a branch of civil law and deals with issues of both private law and public law. Commercial law includes within its compass such titles as principal and agent; carriage by land and sea; merchant shipping; guarantee; marine, fire, life, and accident insurance; bills of exchange and partnership. (Commercial law, 2013) Obviously, the issues of dangerous goods transportation fall within the scope of commercial law.

With social development and scientific and technological improvement, new dangerous goods emerge endlessly. Due to their peculiar natures, dangerous goods are likely to come up through accidents during the process of transportation. In the case of dangerous goods accidents, there usually occurs serious personal injury even death, as well as property damage and environmental pollution. Besides, in terms of some kinds of dangerous cargoes, transportation conditions are critical yet not easy to control under a sta-

ble condition during the course of transportation. This leads to draw increasing attention to dangerous cargo transportation. In addition, due to the inherent risks of the shipping industry, dangerous cargo transportation at sea has raised serious concerns in the legal fields in wider maritime communities.

In regards to the regulation of dangerous goods transportation, it can go through a process from a completely unregulated stage to a totally banned stage or, in some cases, to a period of opening the system step by step. At the beginning period of merchant shipping, undoubtedly dangerous goods transportation existed at sea. However it did not come into the public's awareness. At that time, dangerous cargo was limited in terms of its type and the quantity was smaller than it is today. It was not until the late 19th century, considering some dangerous cargoes could threaten the safety of ship and personnel, that the United Kingdom banned some forms of dangerous cargo to be transported at sea, which was practical at that time when shipping technology level was relatively low. With the development of the shipping industry and improvement of shipping, especially during the period of the Second World War, the ban on dangerous cargo transportation at sea was bound to be lifted for the needs of war.

In those days, the Convention on the Safety of Life at Sea (SOLAS) primarily banned, in principle, dangerous cargo transportation at sea, while it did not specify the banned categories. At the same time, SOLAS regulated that contracting governments should clarify the category of dangerous cargoes permitted to be transported at sea and their corresponding measurement. Thus, such regulations could also be interpreted as permitting the transport of dangerous cargo at sea in the case that appropriate measurement has been taken. In this condition, individual countries made relative regulations. Because individual countries made different standards on the definition of dangerous cargo, marks and labels, package, stowage and other terms, dangerous cargo transportation at sea ran into certain difficulties. Aiming to enhance the management of dangerous cargo

transportation at sea, the International Maritime Dangerous Goods Code (IMDG Code) was adopted in 1965. China ratified the IMDG Code in 1982.

In terms of international regime for carriage of goods by sea, “at the turn of the last century, the international community recognized that for international trade to flourish it would be essential to create an international legal regime that could accommodate two purposes: (i) flexibility to allocate risks in line with their commercial needs, and, (ii) prevention of abuse and protection for the parties in a weaker bargaining position. This led to the drafting and implementation of the Hague Rules in 1920s, which was the first ever international convention to unify certain rules relating to bills of lading and set forth a minimum protection for the cargo interests” (Nikaki & Soyer, 2012), and was the earliest regulation concerning dangerous cargo transportation at sea.

2.2 The present situation on maritime dangerous goods legislation

Dangerous goods transport regulations are recognized as an important part of the law of transport of goods by sea. In view of the huge risks and hazards of dangerous goods, international society and various countries in the world, however, legislate on dangerous goods carriage management in different degrees. From the perspective of the nature of legal norms, it can be divided into legal norms on the rights and obligations of the parties (in the following section, 2.2.1) and technical legal norms (in the section 2.2.2).

2.2.1 Legal norms on the rights and obligations under maritime dangerous goods carriage contract

(1) Hague Rules

At the beginning of the 20th century, countries continued to strengthen economic ties, and the amount and type of dangerous goods by sea increased greatly. Correspondingly dangerous goods transportation accidents became more significant. According to the re-

ality, article 4.6 of the Hague Rules provides special rules for the carriage of dangerous goods, which clarified, as the carrier, how to deal with dangerous cargoes and what liability the carrier should have in two situations on the bases of whether the carrier “consented with knowledge of their nature and character”¹. Besides, provision 2 of Article 2 regulated “Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from:...(m) Wastage in bulk or weight or any other loss or damage arising from inherent defect, quality or vice of the goods....”. The Hague-Visby-Rules 1968, however, did not make amendment on the provisions of the Hague Rules concerning the transportation of dangerous cargo at sea.

(2) Hamburg Rules

The Hamburg rules, on the basis of the Hague Rules, made further detailed descriptions in terms of the rights and obligations of both shipper and carrier, of which Article 13 “Special rules on dangerous goods” specified that the shipper must mark or label in a suitable manner dangerous goods as dangerous and inform the carrier or the actual carrier of the dangerous character of the goods and, if necessary, of the precautions to be taken. Undoubtedly, these provisions are a non-negligible progress in the matter of adjusting the legal relationship of dangerous cargo transportation at sea.

(3) Rotterdam Rules

The Rotterdam Rules (formally, the United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea) is a treaty comprising international rules that revise the legal and political framework for maritime carriage of goods.

¹ Article 4.6 of Hague Rules: Goods of an inflammable, explosive or dangerous nature to the shipment whereof the carrier, master or agent of the carrier has not consented with knowledge of their nature and character, may at any time before discharge be landed at any place, or destroyed or rendered innocuous by the carrier without compensation and the shipper of such goods shall be liable for all 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.

The convention establishes a modern, comprehensive, uniform legal regime governing the rights and obligations of shippers, carriers and consignees under a contract for door-to-door shipments that involve international sea transport (Rotterdam Rules, 2013).

Article 32 of the Rotterdam Rules “Special rules on dangerous goods” made full provisions on special obligation and responsibility of the shipper and the first conceptual definition of dangerous goods with the scope of international treaties as “goods by their nature or character are, or reasonably appear likely to become, a danger to persons, property or the environment”. At the same time, it is regulated in Article 15 “Goods that may become a danger” that carrier may take some reasonable measures “if the goods are, or reasonably appear likely to become during the carrier’s period of responsibility, an actual danger to persons, property or the environment”. Compared with the regulations described in the foregoing rules where only when actual danger caused by dangerous goods exists may measures be taken, in this provision it is regulated that the carrier or performing party may do so even in the circumstances that the danger appears in objective opinion. Suffice to say, this provision is a breakthrough in terms of prerequisite of disposing dangerous goods.

2.2.2 Technical legal norms

Following the legal norms on the rights and obligations under maritime dangerous goods carriage contract, technical legal norms provide a different perspective on the issue of dangerous cargo transport.

It is viewed that dangerous goods have certain physical and chemical characteristics with numerous technical factors. Many countries, including China, and international organizations have formulated the corresponding technical legal norms to adjust the maritime transport of dangerous goods, which are, arguably, prominent characteristics of dangerous cargo transportation distinguishable from other items. These technical legal

norms have also played a very important role in the safety of dangerous goods transportation.

The need of developing technical legal norms on dangerous cargo transportation was becoming an issue in the international maritime community. With the vigorous development of the international maritime industry, the quantity and scale of international maritime dangerous goods are increasing, from which the accidents and the losses became critical. As a result, CMI (COMITE MARITIME INTERNATIONAL), IMO and other international organizations developed a large number of international conventions on maritime dangerous goods. These conventions are authoritative and on the basis of successful experience of dangerous cargo management in various countries and international organizations, accepted by the international society widely, and make dangerous cargo management and maritime transport as far as possible comply with the unified, standardized principle, which promoted the development of dangerous goods transportation by sea.

Several international legislations are to be discussed in order to highlight how the international maritime community has responded to this issue. Such legislations include (1) UN Recommendations on the Transport of Dangerous Goods - Model Regulations; (2) International Maritime Dangerous Goods Code (IMDG Code); (3) International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974); and (4) International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78 Convention).

(1) UN Recommendations on the Transport of Dangerous Goods - Model Regulations (UNECE, 2013)

According to the need of cargo transportation, the United Nations economic and social council (ECOSOC) created the United Nations Committee of Experts on the Transport

of Dangerous Goods (UNCETDG) in 1954. In 1956, UNCETDG, according to the development of new technology and material, the requirements of the modern transportation system, and especially to ensure the safety of person, property and environment, while reducing obstacles to dangerous goods international trade, compiled UN Recommendations on the Transport of Dangerous Goods and entitled UN Recommendations on the Transport of Dangerous Goods - Model Regulations since its tenth revised edition.

In addition, in order to make the proper classification of dangerous goods, the commission also compiled Recommendations on the TRANSPORT OF DANGEROUS GOODS- Manual of Tests and Criteria. The manual introduced certain types of dangerous goods classification methods of the United Nations, and is considered the most helpful to obtain the required information in order to make appropriate test methods and programs for classification of substances and articles. Widespread adoption of the Orange Book make the carrier, the shipper and the inspection authorities benefit a lot from simplified transportation, loading and unloading and inspection procedures.

(2) International Maritime Dangerous Goods Code (IMDG Code)

On September 27, 1965, the IMDG Code was adopted by the international maritime organization a. 81, (IV) resolution, including four volumes plus one supplementary volume. After repeated revision, from the 30th amendment, the IMDG Code consists of 3 volumes.

The IMDG Code, based on the nature and characteristics of each type of dangerous goods, has made detailed provisions on marking and labeling, consignment procedures, stowage, packaging and related segregation protection, and fire protection measures, which played an important role on the implementation of SOLAS 1974 and MARPOL 73/78 convention, ensuring the safety of ships carrying dangerous goods and preventing marine pollution.

From January 1, 2004, the main part of the IMDG Code became mandatory under the SOLAS convention, namely the packaging forms of maritime dangerous goods and the marine pollutant started to carry out a unified code on the safety of global maritime shipping. It is important to note that there is still a part of the content that is recommendatory, such as the rules in the section 2.3.3 about the provisions of "determination of flash point".

All packaging, labels, stowage of dangerous goods and other matters shall strictly abide by the requirements of the relevant entering and leaving port state and IMDG Code. What requires attention regarding to the IMDG Code is that it is only applicable to packaged dangerous goods. Bulk liquid chemicals and bulk liquefied gas transportation is bound by other relevant international or domestic rules.

(3) International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974)

SOLAS 1974 was adopted by the IMO at the international conference for the safety of life at sea convention on November 1, 1974 in London, and took effect on May 25, 1980. It is one of the most important conventions among various international conventions related to safety at sea.

Chapter VII of SOLAS convention "Carriage of dangerous goods" regulates dangerous goods safety transportation, including "Carriage of dangerous goods in packaged form", "Carriage of dangerous goods in solid form in bulk", "Construction and equipment of ships carrying dangerous liquid chemicals in bulk", "Construction and equipment of ships carrying liquefied gases in bulk" and "Special requirements for the carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes on board ships".

(4) International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78 Convention)

Annex III of MARPOL 73/78 “Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form”, unless expressly provided otherwise, apply to all ships carrying harmful substances in packaged form in terms of packing, marking and labeling, documentation, stowage, quantity limitations, exceptions and port state control on operational requirements.

2.3 Developing trend of maritime dangerous goods legislation

With the increasing freight volume of dangerous cargo by sea, dangerous cargo currently has a more important position in the field of marine transportation; consequently more attention has been drawn on legislation thereon. Generally, the legislation of dangerous cargo transportation follows three trends, which are, definitions are becoming clearer, more focus is placed on environmental protection issues and the legal status of respective parties is becoming clarified.

Firstly, the definition of dangerous goods requires further clarification in the legal relation. The Rotterdam Rules presented a conceptual definition, which is not just to describe simply or introduce other definitions from technical documents. It could be deemed as a beneficial attempt.

Secondly, more focus has been placed on the issues of marine environmental protection. In the earlier stage of legislation, only interests but not environmental issues drew the attention of human beings. With environmental pollution getting worse, international society has enhanced environmental protection awareness, especially with regard to the maritime environment. It is realized that in the event of an accident involving dangerous goods, the marine environment would suffer serious impacts, which was reflected in the

legislation. Both shipper and carrier are urged to operate dangerous cargo that is apt to cause marine pollution more cautiously.

Thirdly, the legal status of respective parties in the legal relation of international dangerous cargo transportation is more clarified. Furthermore, the rights and duties as well as the allocation of liability of both shipper and carrier is sought to be reasonable. As to the liability of shipper and carrier under the contract of dangerous cargo transportation at sea, the scope of right and duty became, as a consequence, clearer and more reasonable.

2.4 Definition of dangerous cargo

In line with the development of both international and national legislations on dangerous cargo transport, it is important to define what dangerous cargoes are and to what extent such dangerous cargoes impact on the rights and obligations of shippers and carriers. Any ambiguity in definitions of dangerous cargoes may result in confusion and misinterpretation when discussing the rights and obligations of shippers and carriers.

2.4.1 Types of definition

Presently, there are three kinds of definition on dangerous cargo in international convention and domestic law: enumerated type definition, descriptive definition and conceptual definition.

Enumerated type definition is the most widely used currently, for example, in respect of international treaties, IMDG Code, SOLAS 1974, the MARPOL 73/78. In the field of Chinese domestic law, Hazardous Chemical Materials Safety Management Regulations set forth the categories of dangerous cargoes including explosives, compressed and liquefied gases, flammable solids, flammable liquids, spontaneous combustion articles and combustible articles when wet, oxidizing materials and organic peroxides, toxic materials and corrosive substances. Some other regulations, like Safety Management Regula-

tions of Dangerous Cargoes in Port, also list the categories of dangerous goods. To define dangerous goods in this way could clarify the scope of dangerous goods and make regulations more operable in real practice.

Descriptive definition was embodied in the Hague Rules and 1999 the Carriage of Goods by Sea Act ("COGSA") (Full-text of U.S. Senate COGSA '99 (September 24, 1999), 1999). Abstract as it is, this type of definition could not give an accurate range of dangerous cargo. Consequently, during the process of litigation, whether the cargo could be categorized as dangerous cargo depends on the judge's discretion to a great extent. In this context, the case exists that the same kinds of goods that lead to an accident may get different results of judgment from judges. Undoubtedly, this is not beneficial for international society to set up a uniform management regime worldwide.

Conceptual definition is mainly embodied in the Rotterdam Rules. This type of definition is an attempt to define dangerous goods and has a positive effect to some extent. Inevitably, it has defects; for example, it's hard to delimitate the range, and in a certain degree relieve the duty of the carrier on cargo stowage, transfer and custody in practice.

Depending on which definition is used, there seems to be a gap among these rules and the next section will examine each definition and refer to the limitations.

2.4.2 Definition in international convention

(1) The Hague Rules and Hague-Visby Rules

The Hague Rules and Hague-Visby Rules do not define what dangerous goods are, but, in Article 4.6, give an indirect definition when regulating the rights and obligations under the maritime dangerous goods carriage contract, which says "goods of an inflammable, explosive or dangerous nature". This is a kind of descriptive definition of dangerous

goods from their nature, which is not very accurate. At the same time, the word “or” in this definition also makes it ambiguous and may lead to misunderstanding. It seems that “inflammable” and “explosive” are not dangerous nature. Referenced by article 307 of China Contract Law (Standing Committee of the National People's Congress, 1999), the statement could be “goods of an inflammable, explosive or other dangerous nature”. The Hamburg Rule does not involve a dangerous goods definition.

(2) International Maritime Dangerous Goods Code

In 1965 the first edition of the International Maritime Dangerous Goods Code (IMDG Code) came out. In the IMDG Code, dangerous goods are divided into nine categories, i.e. “①explosives, ②gases (flammable gases; nonflammable and nontoxic gases; toxic gases), ③flammable liquids, ④Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases, ⑤Oxidizing substances and organic peroxides, ⑥Toxic and infectious substances, ⑦Radioactive material, ⑧Corrosive substances⑨Miscellaneous dangerous substances and articles (Class 9) and environmentally hazardous substances”. Besides, marine pollutants are also discussed in the IMDG Code. This is a kind of Enumerated type definition from a perspective of dangerous goods categories, which is not comprehensive but has a significant influence on how to define dangerous goods, exerts an important role in maritime dangerous goods transportation, and receives recognition widely in the shipping industry around the world. China began to carry out the IMDG Code in its shipping industry from October 1st 1982.

In addition, a series of IMO conventions also touch the issues of dangerous goods classification and definition, such as chapter VII of International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974), Annex III of International Convention for the Preven-

tion of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78 Convention) "Regulations for the prevention of pollution by harmful substances carried by sea in packaged form", International Maritime Solid Bulk Cargoes (IMSBC) Code, International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) and International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel , Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code).

(3) The Rotterdam Rules

The Rotterdam Rules, of which Article 32 refers to dangerous goods as “goods by their nature or character are, or reasonably appear likely to become, a danger to persons, property or the environment”. This is the first time dangerous goods have been given a conceptual definition in a convention in international society.

This definition is a breakthrough for descriptive definitions and enumerated type definitions before, and goods that will be a danger to the environment are also involved in the category of dangerous goods, which helps us to correct define dangerous goods.

To sum up, from the point of international conventions on dangerous goods, none of the unified definitions of dangerous goods has been accepted by a number of countries on an international level. In addition to the Rotterdam Rules, to the question “what is dangerous cargo?”, international conventions did not give a positive answer, but use a dangerous goods directory to identify dangerous goods. At present, in the practice of international ocean shipping, IMDG rules as well as some other dangerous goods directories have become main the basis for judgment of dangerous goods.

2.4.3 The definition of dangerous goods in this paper

At present, the scope, type and quantity of dangerous goods are presenting the trend of escalation, and in some cases, even illegal goods are taken into the category of dangerous goods. In this case, the author thinks that to definite dangerous goods, we should make clear the following issues.

(1) Emphasizing the danger and harmfulness

Due to dangerous goods having strong technical features, we should emphasize the danger and harmfulness, which mainly comes from the physical and chemical characteristics of the goods. Seen from the present, the vast majority of dangerous goods belong to this type, which has been generally acknowledged in the maritime law theoretical circle and the shipping industry, undoubtedly. It should be noted that danger and harmfulness do not necessarily have to cause actual danger, so long as the possibility of danger is present.

(2) Paying attention to environmental damage

Dangerous cargoes can be, by nature, harmful to ships, onboard goods, crew and the marine environment. Especially, harm to the marine environment has received more and more attention. Once an accident happens, for example, leaked oil, chemicals and other dangerous cargo enter into the sea, and damage marine biological resources, endanger human health, impair fishing and tourism, and damage sea water and marine environmental quality (Cai, 2003). Hence, taking the goods liable to pollute the marine environment into the dangerous cargo system is imperative.

In 2004, China began to implement the Ship Carrying Dangerous Goods Safety Supervision and Management Regulations, of which article 36 have goods liable to pollute the marine environment listed in the category of dangerous goods. That is to say, a ship car-

rying goods harmful to the environment listed in the MARPOL 73/78 convention will comply with the concerning regulations of dangerous goods transportation management also in China, which is a significant change in the legislation.

Article 32 of Rotterdam Rules considers the goods that are a danger to the environment as dangerous goods also, which shows that the international community has reached broad consensus on this issue.

(3) Dangerous goods exceed the scope of some lists

Dangerous cargo includes but is not limited to the goods specified in the IMDG rules and dangerous goods listed in the directory of goods from all over the world. At present, the dangerous goods identification mainly refers to the IMDG rules and the dangerous goods directory built in various countries. While any enumerated type provisions could not be exhaustive, at the same time, because dangerous cargo term is growing, the original directory cannot cover all the dangerous goods.

For dangerous goods that were not included in the directory, both parties under the carriage contract are required to identify such goods carefully on the basis of the definition of dangerous goods, avoiding an accident during the voyage.

In addition, in the case that a catalogue of dangerous goods in a particular country defines a kind of goods as dangerous goods material, when exporting to the country, even if this material is not specified in the IMDG rules, those goods should also be clearly classified as dangerous goods.

(4) Illegal goods issues

The transport of drugs, guns and other illegal goods may cause port state citing in violation of the law mandatory provisions to penalize the carrier or the shipper, such as de-

taining the ship, or the ship's goods and criminal penalties, which bring huge loss, from a broader perspective. This is a kind of danger not related to the physical or chemical characteristics of goods, but arises from the violation of legal provisions. In this context, the author thinks that the transport of illegal goods should not be deemed as dangerous goods.

(5) Determining in dispute

Given the strong physical and chemical characteristics of dangerous goods, in case both shipper and carrier in the process of contracting are unable to decide whether a good belongs to dangerous goods, the author suggests the identification should be conducted by the maritime safety administration (MSA)², in order to avoid affecting the smooth progress of maritime transport. The maritime safety administration is the national maritime administration authority, has been engaged in management of dangerous goods for a long time, and has professional staff engaged in this field of work. In China, the ministry of transport (MOT) has set up a consulting center for dangerous goods transport, which is, in addition, specialized in research work on dangerous goods. In case a dispute arises on whether goods belong to the dangerous goods category after an accident, identification can be carried out by the maritime court in turn as per concerned maritime conventions or laws, such as article 68 of the China Maritime Code.

² The name of the authority could be various in different countries.

CHAPTER III THE LEGAL ISSUES OF THE SHIPPER IN THE LEGAL RELATIONS OF DANGEROUS GOODS TRANSPORTA- TION AT SEA

The dangerous goods shipper is often the cargo owner or a person who has close relations with the cargo owner, who is one of the parties of the contract of carriage of dangerous goods by sea. In view of the particularity of dangerous goods transportation by sea, international conventions and maritime laws from all over the world provide special rights, obligations and responsibilities to dangerous goods shippers, of which obligations and responsibilities are more, which is an important feature of the carriage of dangerous goods.

So far, a considerable contributor to accidents involving the carriage of dangerous goods is the violation of the statutory obligations of shipper. The Cargo Incident Notification System (CINS) organization released the latest data in 2013, reporting that 24 per cent of cargo incidents are due to misdeclaration of cargo while a further 37 per cent are due to poor or incorrect packing. Their analysis further revealed that 80 per cent of the substances involved in these incidents are dangerous goods. Among all, nearly half relate to leakage and a quarter was reported as misdeclared. 8 per cent of the reported incidents involved fire or explosion. It is worth noting, however, that the reports of incidents relat-

ing to misdeclared cargo represent a marked increase in the first four months of 2013 compared with the previous 18 months. (CINS sees sins at sea, n.d.)

It is, therefore, increasingly important to understand the legal rights and obligations of dangerous goods shipper. The relationship between shipper, carrier and other stakeholders (i.e. consignee and freight broker) is shown in the Figure 3.1. This chapter responds to the need for clarification of the legal issues of dangerous goods shippers.

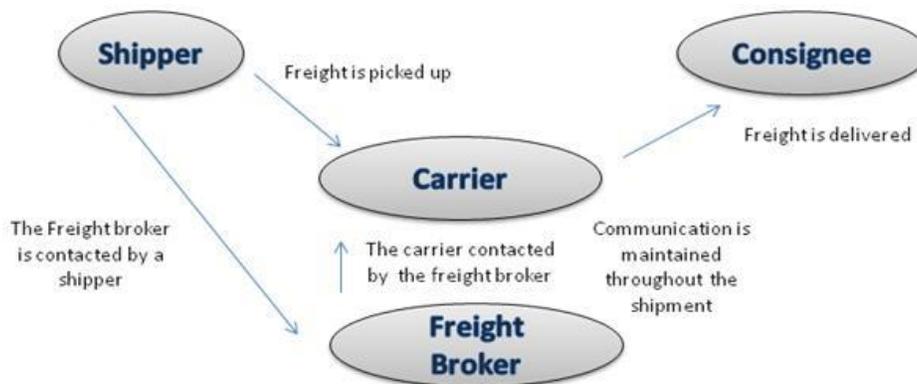


Figure 3.1: Relationship between Shipper, Carrier and Other Stakeholders
Source: (<http://www.cheapshipping.com/what-is-a-freight-broker-or-a-freight-forwarder/>)

3.1 The legal right of the dangerous goods shipper

Legal rights refer to rights which exist under the rules of legal systems or by virtue of decisions of suitably authoritative bodies within them (Legal Rights, 2013). This section covers the right of requiring a carrier to transport cargo in safety and the right of claim.

3.1.1 The right of requiring a carrier to transport cargo in safety

As one party of a cargo transportation contract, dangerous cargo shippers have the right to require the carrier to transport the cargo to the discharging port as per the contract.

The biggest beneficiary of safety transportation is the shipper. "The law gives the shipper the right of requiring safe carriage, which is protected as the most fundamental and most important right of the shipper in a carriage contract, as long as there are no legal exemptions of the carrier and no issues which make shipper lose his rights, the right to require transportation safety of the shipper is concerned and protected by law" (Ni, On legal relationships in marine transportation of hazardous goods, 2004). To deliver the dangerous cargo from one port to another in good condition is the fundamental purpose of a marine dangerous cargo transportation contract.

Safety, undoubtedly, is the basis and prerequisite of marine cargo transportation, as the key point differing from ordinary cargo transportation as well. The importance of safety embodied in two characteristics of dangerous cargo transportation, which are high risk and the fact that one hundred percent safety cannot be ensured.

The first point is high risk. During the process of cargo transportation at sea, once an accident happens, not only the dangerous cargo itself but also the ship, persons, environment and other cargo carried onboard could be impacted. However, in the case of ordinary cargo, an accident may not usually cause damage to the ship and other properties onboard the ship.

The second point is the shipper could not request the carrier to ensure the dangerous cargo to be a hundred percent safe. That is, the right of the shipper on requiring the carrier to transport dangerous cargo in safety is limited by the right of the carrier regarding dangerous cargo disposal. For example, The Hague Rules regulated "the carrier, master or agent or the carrier may at any time land the dangerous goods at any place, or destroyed or rendered innocuous without compensation". In this respect, the Hamburg Rules have similar regulations to the Hague Rules. While the Rotterdam Rules have a relatively broad regulation regarding this issue compared with the Hague Rules and Rotterdam

Rules. Many countries' domestic laws have similar regulations as well. This could be deemed as well accepted special regulations based on the character of dangerous cargo transportation. Above all, it is easy to find out how important safe transportation is.

3.1.2 The right of claim

When the dangerous cargo carrier is in violation of the provisions of the contract of carriage of goods by sea or the rule of law, causing dangerous goods to suffer losses, the shipper of the dangerous goods shall have the right to claim damages from the carrier or the actual carrier. This is an extremely important right of a dangerous goods shipper.

The provisions in terms of right of claim could be found in various regulations. Take the Hague Rules, for example; Article IV says, "Neither the carrier nor the ship shall be liable for loss or damage arising or resulting from unseaworthiness unless caused by want of due diligence on the part of the carrier to make the ship seaworthy and to secure that the ship is properly manned, equipped and supplied, and to 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 in accordance with the provisions of paragraph 1 of Article 3..."³.

Article 5.7 of the Hamburg Rules shows, "Where fault or neglect on the part of the carrier, his servants or agents combines with another cause to produce loss, damage or delay in delivery, the carrier is liable only to the extent that the loss, damage or delay in delivery is attributable to such fault or neglect, provided that the carrier proves the amount of the loss, damage or delay in delivery not attributable thereto."

Article 17 of the Rotterdam Rules regulates that, "The carrier is liable for loss of or damage to the goods, as well as for delay in delivery, if the claimant proves that the loss,

³ Hague Rules, Article 4.1

damage, or delay, or the event or circumstance that caused or contributed to it took place during the period of the carrier's responsibility as defined in chapter 4.”⁴.

Although the shipper was awarded the right of claim by law, when exercising the right of claim certain prerequisites should also comply. Firstly, the contract of carriage of dangerous goods at sea should be valid. Secondly, the carrier failed to properly fulfill the provisions of applied laws or the agreement reached in the contract. Thirdly, the shipper suffered a loss because the carrier failed to fulfill its responsibility. Fourthly, the carrier was not in a situation of exemption. The shipper of ordinary cargo is able to claim compensation when conforming with the foregoing 4 points, but as to dangerous goods, the right of claim of the shipper is limited by the right of appeal. That is, when the carrier is exercising the right of disposal of dangerous goods as per applied law, the shipper cannot exercise the right of claim on cargo damage. For example, Article 4.6 of the Hague Rules says if dangerous goods became a danger “...they may in like manner be landed at any place, or destroyed or rendered innocuous by carrier without liability on the part of carrier...”. In this regard, the Hamburg Rules has rules with same meaning, basically that “...the goods may at any time be unloaded, destroyed or rendered innocuous, as the circumstances may require, without payment of compensation.”⁵, while, compared with the Hague Rules and Hamburg Rules, the Rotterdam Rules have more broad limitations on the right of disposal, that is “if the goods are, or reasonably appear likely to become during the carrier's period of responsibility, an actual danger to persons, property or the environment”, “the carrier or a performing party may decline to receive or to load, and may take such other measures as are reasonable, including unloading, destroying, or rendering goods harmless”.⁶ Basically all present codes have similar regulations on the right of disposal, among which the Rotterdam Rules do not clarify whether the carrier

⁴ Rotterdam Rules, Article 17.1

⁵ Hamburg Rules, Article 13

⁶ Rotterdam Rules, Article 15

should pay compensation, while the other codes all state clearly that the carrier has no liability on the payment of compensation.

The right of claim of the shipper on the dangerous cargoes, compared with normal cargoes, is limited more by the right of disposal of the carrier, which is mainly due to the distinctiveness of dangerous cargoes transport and aim to deduce the losses when in danger. Actually, even though codes have regulations on the right of disposal, the carrier has more risk-sharing during the process of dangerous cargo transportation at sea. For example, in the case that the shipper gives false information on the dangerous cargo, which leads to a fire onboard the ship due to incompatibility of the dangerous cargo and other nearby cargoes and finally causes total loss, usually the value of the ship is overweighs the shipped dangerous cargo. At this time, the carrier should manage to claim the huge loss from the shipper, but it may be difficult if the shipper or his agent is dishonest, and can declare bankruptcy to end his duty.

3.2 Special right of the shipper of other cargoes shipped on the same ship

As to the special right of the shipper who has cargo on the same ship with dangerous goods, there are no clarified regulations in present laws or conventions. Here this paper attempts to make a simple analysis and sort them into two rights, which are right to be informed and right of claim. This section covers the right to be informed and the right of claim.

3.2.1 The right to be informed

The other cargo shipper should have the right to be informed who the shipper is of the dangerous goods onboard the same ship, and the quantity and quality of the goods after they are loaded, to be able to make a claim after an accident happens. At the same time,

the other cargo shipper could require withdrawal of cargo to be shipped, but should compensate the carrier.

3.2.2 The right of claim

The right of claim of the other cargo shipper could be divided into two sorts, the right of claim to the carrier and the right of claim to the dangerous goods shipper.

As to the right of claim to the carrier, the carrier shall be liable for the loss of the shipper due to reasons not entitled to exoneration, if the cargo is not transited to the destination safely. As to the right of claim to dangerous goods shipper, because there is no contractual relationship between other cargo shippers and the dangerous cargo shipper, once a dangerous goods accident happens and causes the loss of the other cargoes, the shipper of the other cargo can require the shipper of the dangerous goods to hold joint liability based on the tort theory.

To conclude, the interest of the shipper whose cargo is shipped onboard the same ship does not get protection by law. In this context, it may need to be taken into consideration when amending laws and conventions to protect the interest of other cargo shippers, and set up a regime of the right to be informed and provide sufficient legal basis for the right of claim of the other cargo shippers.

3.3 Obligation of dangerous cargo shipper

In its original sense, the term obligation was very technical in nature and applied to the responsibility to pay money owed on certain written documents that were executed under seal. Currently obligation is used in reference to anything that an individual is required to do because of a promise, vow, oath, contract, or law. It refers to a legal or moral duty that an individual can be forced to perform or penalized for neglecting to perform. (<http://legal-dictionary.thefreedictionary.com/obligation>) This section covers the obliga-

tion of providing dangerous cargo as per contract; the obligation of providing necessary documents needed in transportation; the obligation of packaging properly for dangerous goods; the obligation of marking and labeling properly dangerous goods; and the obligation of notification.

3.3.1 Obligation of providing dangerous cargo as per contract

Article III provision 5 of the Hague Rules regulates that “the shipper shall be deemed to have guaranteed to the carrier the accuracy at the time of shipment of the marks, number, quantity and weight, as furnished by him”; Article 17 provision 1 of the Hamburg Rules states that “the shipper is deemed to have guaranteed to the carrier the accuracy of particulars relating to the general nature of the goods, their marks, number, weight and quantity as furnished by him...”; Article 27 provision 1 of the Rotterdam Rules clarifies that “unless otherwise agreed in the contract of carriage, the shipper shall deliver the goods ready for carriage...”.

3.3.2 Obligation of providing necessary documents needed in transportation

The Article 29 of Rotterdam Rules “Shipper’s obligation to provide information, instructions and documents” requires “the shipper shall provide to the carrier in a timely manner such information, instructions and documents relating to the goods that are not otherwise reasonably available to the carrier, and that are reasonably necessary”.

Due to the fact that dangerous goods could bring huge damage once an accident happens, they are supervised more strictly in various countries and it will be more complex when going through the customs. At the same time, there are many kinds of dangerous cargoes to be transported around the world and the requirements of supervision in different places could not be same, so certificates to be presented by the shipper in different place should not be lumped together.

In general, the shipper of dangerous cargo should present the following documents:

(1) Description for Dangerous Material or Technical Description of Dangerous Goods in Packaged Form: One of the two documents shall be presented in several copies along with the shipping order, in which the name of the commodity, synonym, formula, performance, packing, cautions during transportation, and first aid and defenses shall be comprised, for the reference of port operation, cargo handling and carriage. In case of some dangerous goods not otherwise specified in the IMDG Code to be shipped, another document shall be presented which could be named Dangerous Goods Appraisal Table.

(2) Declaration on Safety and Fitness of Dangerous Goods authorized by MSA when shipped, by which the ship agency goes to MSA, after making a stowage plan, to get the Declaration Form for Dangerous Goods Carried by Ship. Only after the Port authority has received the Declaration Form authorized by the MSA shall it permit the ship to load dangerous goods.

(3) Dangerous Goods Package Fitness Certificate issued by commodity inspection and quarantine authority after going through all necessary tests. This certificate will be valid only after verification of the port authority and the port operating zone will allow the dangerous cargo to enter the port operating zone by virtue of the stamped certificate and to be loaded onboard.

(4) After the dangerous goods are loaded into a container, a Container Packing Certificate should be issued with several copies, which should be delivered to the port authority, the ship, the ship agency and the MSA. What calls for special attention is that a Tank Container Inspection Certificate should be provided in the case of bulk dangerous cargo to be transported in a tank container.

3.3.3 Obligation of packaging properly for dangerous goods

Apart from the obligation of providing necessary documents, the dangerous cargo shipper needs to comply with proper packaging for their cargos. The provisions on the duty of the shipper in terms of packaging could be found in article 27 of the Rotterdam Rules:

1. Unless otherwise agreed in the contract of carriage, the shipper shall deliver the goods ready for carriage. In any event, the shipper shall deliver the goods in such condition that they will withstand the intended carriage.
2. The shipper shall properly and carefully perform any obligation.
3. When a container is packed or a vehicle is loaded by the shipper, the shipper shall properly and carefully stow, lash and secure the contents in or on the container or vehicle, and in such a way that they will not cause harm to persons or property.

In real practice, incidents involving dangerous goods caused by improper packaging are not uncommon. Obviously, proper package is of utmost importance to the safe carriage of dangerous goods. While by now there is no uniform standard on so called “proper”. One of the viewpoints is “proper” should depend on particular circumstances concluding the category of the cargo and the method of carriage. The so called proper should be measured by the standard of safe transportation and facilitation of handling. To be specific, packaging should be undertaken under the contract or standard concerned. In exceptional circumstances, packaging should follow the standard based on certain dangerous goods or voyage safety transportation and handling (Mo, 1999). Another viewpoint is that proper packaging should be conventional or normal packaging, which, under normal custody and transportation condition, could protect cargoes from almost all the slight damage. (Yin, 2000)

According to the arguments relating to the word, ‘proper’, it is not practically possible to have one single standard of what ‘proper’ should be, because the standard of “proper” should be different depending on various cargoes. Generally, proper packaging should be capable of withstanding the usual possible circumstances and foreseeable risk, and it is not necessary that the packaging be able to withstand all risks, which is also an unpractical and excessive standard.



Figure 3.2: The perils of packing
Source: <http://www.hazardouscargo.com/>

The IMDG Code as an international regulation provides clarified rules on dangerous goods packaging with regard to materials, and strengths, while the basic standard of which is solid and in good condition and of the capability to withstand normal risk in the process of cargo handling and carriage. For packing purposes, substances other than those of classes 1, 2, 5.2, 6.2 and 7, and other than self-reactive substances of class 4.1, are assigned to three packing groups in accordance with the degree of danger they present:

Packing group I: substances presenting high danger;

Packing group II: substances presenting medium danger; and

Packing group III: substances presenting low danger.⁷

In the business of international dangerous cargo transportation by sea, the standards on packaging in the IMDG Code could be used as the common standard of determining whether it is proper or not.

With the development of the modern shipping industry and popularization of container use, container cargo occupies a high proportion of the shipping market. Due to the particularity of container transportation, the container as the package may be provided by the shipper or carrier, which makes it necessary to categorize the main body of commitment on packaging.

Firstly, in the case that the carrier provides the container to package the dangerous cargoes, the shipper should have the obligation on the package of the cargo stowed in the container to withstand the risk of container transportation. While, as to whether the container itself could resist the risk of transportation or loss during transportation due to the poor quality of the container should be within the responsibility of the carrier. At that time, the container should not be deemed as a package but an extension of the ship, which supplements the function of the ship.

Secondly, when the shipper themselves provide containers for cargoes, the container should be looked on as a part of the package. At that time, the shipper should be responsible for making sure that the container conforms to the shipping requirement and the loss arising from container. While, even though containers are provided by the shipper, the obligation of the carrier on looking after the container could not be exempted.

⁷ See IMDG Code, 2.0.1.3

3.3.4 Obligation of marking and labeling properly dangerous goods

Dangerous cargo shippers are, furthermore, obliged to mark and label properly dangerous goods. Maritime dangerous goods must be marked and labeled clearly, mainly considering dangerous goods with inflammable, explosive, corrosive, radioactive, or poisonous features, which are very dangerous. An eye-catching logo may draw the attention of related staff in the process of transportation, loading and unloading, and storage of

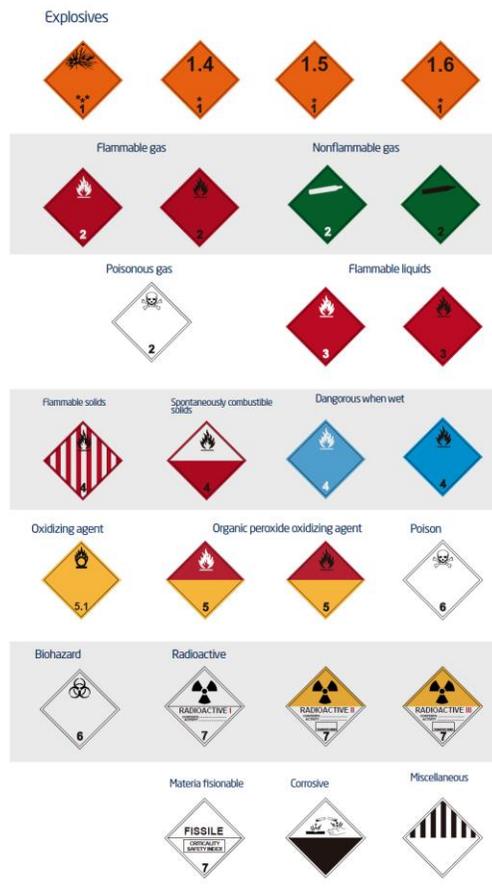


Figure 3.3: Dangerous goods labels in IMDG Code
Source: (Dangerous goods labels, 2011)

dangerous goods, having the effect of a public announcement and warning to avoid an accident happening. That is to say, the shipper shall mark the proper shipping name and label in a uniform way for each of the dangerous cargo containers, so as to show to the public the nature of the dangerous goods inside.

As to the regulations on dangerous goods marking and labeling, international conventions have different rules. The Hague Rules has no explicit statement that the shipper shall be liable for the marking and labeling of the dangerous goods, while article 4 of the Hague Rules says “Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from... (o) Insufficiency or inadequacy of marks...” Obviously, the shipper should mark or label the goods. It could be said that, different from the Hague Rules, the Hamburg Rules have an explicit statement in article 13, which is “The shipper must mark or label in a suitable manner dangerous goods as dangerous.” Article 32 of the Rotterdam Rules (Special rules on dangerous goods) also regulate that “the shipper shall mark or label dangerous goods in accordance with any law, regulations or other requirements of public authorities...”.

On the contrary, in case the shipper does not carry out its obligations, laws should clarify the responsibility. Generally speaking, the majority of the laws have exemption provisions just like the Hague Rules, while the Rotterdam Rules have more clarified regulations, of which article 32 describes, “The shipper shall mark or label dangerous goods in accordance with any law, regulations or other requirements of public authorities that apply during any stage of the intended carriage of the goods. If the shipper fails to do so, it is liable to the carrier for loss or damage resulting from such failure”. This rule is very clear and complies with the real practice of the shipping industry. If the duty of marking or labeling for dangerous goods is regulated as an exemption just as normal cargoes, it is not enough to embody the importance of the marking or labeling for dangerous goods.

Article 32 of the Rotterdam Rules states the shipper shall mark or label dangerous goods, but does not mention packaging in this provision, while article 27 points out that the shipper shall deliver the goods ready for carriage. Although it does not mention proper packaging, it points out that the goods shall be in such condition that they will withstand the intended carriage. These sort of regulations indicate more clearly and substantially the standard of packaged cargo that should be reached and is of more genuine meaning.

3.3.5 Obligation of notification

(1) Relative regulations in different Rules

The Hague Rules do not clarify that the shipper has the obligation of notification, while in article 4.6, there are two quite different regulations based on whether the carrier, master or agent of the carrier has consented with knowledge or not of dangerous goods' nature and character:

When the carrier party has consented with knowledge, goods may at any time before discharge be landed at any place, or destroyed or rendered innocuous by the carrier without compensation; If goods shipped with such knowledge and consent shall become a danger, 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.

Hamburg Rules

The Hamburg Rules point out that the shipper must inform the carrier or an actual carrier of the dangerous character of the goods where the shipper hands over the dangerous goods⁸. While if the carrier or actual carrier wants to exercise the right of disposal for the reason that the shipper failed to inform, the carrier or actual carrier shall also not

⁸ Hamburg Rules article 13.2

otherwise have knowledge of their dangerous character. Article 32 of the Rotterdam Rules clarifies the liability of notification of the shipper, of which the regulation about the time to inform is different from the Hamburg Rules. The Rotterdam Rules declare that the shipper shall inform the carrier before they are delivered⁹.

All these kinds of provisions in any regulation or convention have taken the character of dangerous goods transportation by sea into consideration. Giving false information or hiding the truth when informing the carrier or relative party can result in disastrous consequences.

The Hague Rules, Hamburg Rules and Rotterdam Rules do not clarify what method should be followed to fulfill the obligation of notification.

(2) The time to inform

As for when to inform the carrier or performing party, the Hamburg Rules regulate that the time should be when the shipper hands over the dangerous goods to the carrier or an actual carrier (Article 13); while the Rotterdam Rules require that it shall be before the goods are delivered to the carrier or a performing party (Article 32). China Maritime Code and most other conventions or domestic laws do not clarify the time to inform. Such discrepancy is problematic and the notification obligation fulfilled before dangerous goods are loaded is considered to be appropriate so that the carrier has enough time to sufficiently prepare the loading and carriage of the dangerous goods. Indeed, when the shipper and carrier sign the contract of carriage, the shipper has the obligation to declare the nature and character of dangerous goods to be transported as well as the requirement on the carriage conditions needed, so that the carrier considers comprehensively whether he/she has the ability to transport the goods. One point that should be noted is that the obligation of notification here is not the responsibility of explaining the characteristics

⁹ Rotterdam Rules 32(a)

of the cargo when the contract is signed. The result of not fulfilling the obligation of notification is compensation for the losses of the carrier, while not explaining the information of dangerous goods when signing the contract is concerns the validity of the contract.

(3) The items to notice

As to the items that the shipper should notify to the carrier, laws or conventions usually have detailed regulations. For example, The Hamburg Rules requires the dangerous character of the goods and of the precautions to be taken if necessary be informed. Article 32 of the Rotterdam Rules states that the dangerous nature or character of the goods shall be informed, and according to article 28 that “The carrier and the shipper shall respond to requests from each other to provide information and instructions required for the proper handling and carriage of the goods if the information is in the requested party’s possession or the instructions are within the requested party’s reasonable ability to provide and they are not otherwise reasonably available to the requesting party”. This regulation applies to normal cargoes including dangerous goods also of course.

(4) The subject and object of notification

As to the subject and object of notification, undoubtedly, the obligation of notification shall be fulfilled by the shipper.

In regard to the object of the notification, Hamburg Rules regulates that it is the carrier or an actual carrier that shall be notified by the shipper, while the China Maritime Code clarifies it is the carrier. In real practice, it is common that the party carrier and actual carrier is not the same person. In this case, the shipper may not know who the actual carrier is, or even if an actual carrier exists. At that time, it is impossible for the shipper to inform the actual carrier and improper for the shipper to bear the loss arising from not

informing. In this context, if the shipper has informed the party carrier, it should be deemed that the shipper has fulfilled the obligation of notification. Then the party carrier should bear the loss arising from his not informing the actual party.

Generally, in terms of the obligations of shipper, the Rotterdam Rules have more clear regulations compared with the China Maritime Code. The main divergence of obligations of notification between the Rotterdam Rules and China Maritime Code is whether the obligation of notification could be released or relieved in the case that the carrier knows that the cargo to be transported are dangerous goods. As to the Rotterdam Rules, it is affirmative, while it is not clarified in the China Maritime Code.

In real practice, because the freight rate of dangerous goods is higher than normal goods, sometimes the carrier accepts dangerous goods and claims not to know they are dangerous goods when an incident happens, driven by the economic interest. The Rotterdam Rules clarify the situation that wherein the carrier otherwise has knowledge of their dangerous nature or character, which avoids exempting the carrier from liability in this condition and is beneficial to protect the rights and interests of the shipper in real practice, while the shipper has the burden of proof in this context. It is a kind of balance of interest between shipper and carrier from the point of legislation.

3.4 Liability of dangerous goods shipper

The dangerous goods shipper, compared with the carrier, is more familiar with the cargo, so its obligations are very broad and relative liability is heavy. Scholars have more controversial viewpoints on the liability of the shipper when in violation of obligations. This section covers the basis of liability of dangerous goods shipper as well as the specific content of dangerous goods shipper's liability.

3.4.1 Basis of liability of dangerous goods shipper

As to the liability of the dangerous goods shipper, Fu (1996) states that the dangerous goods shipper shall apply the principle of fault liability, and the shipper shall bear liability when he has faults, and not be liable for the behavior of non-fault. (Fu, 1996) Another viewpoint is strict liability principle shall apply, which, in fact has held a dominant position in academia. (Si, China Maritime Code, 2003)

This paper takes the understanding that deciding the imputation principle applying to the dangerous goods shipper is a matter of legislative value orientation. Dangerous goods transportation by sea is an extremely dangerous industry because the carrier not only faces the danger of navigation from bad weather, but more danger to person or property on board arising from dangerous cargo. In case of loss, it would be huge.

Maritime law, in order to balance even incline to the interests of the carrier, to protect and support the business activities engaged in this high-risk dangerous cargo transportation at sea, is bound to put pressure on the shipper.

In the aspect of the imputation principle, the principle of strict liability can allow the carrier to be compensated for losses for the transport of dangerous goods, but does not allow the shipper to enter a plea on the ground of no fault, to maximize the interest of the carrier and provide a guarantee for the implementation of the contract, which is advantageous to the maintenance of transaction security. In addition, it can supervise and urge the shipper to learn dangerous goods knowledge and inform the carrier as fully as possible, which has a good effect on both ensuring transportation safety, avoiding accidents and arousing the enthusiasm of the carrier on transporting dangerous goods.

If the fault liability principle is adopted and allows the shipper not to be investigated on the ground of their no fault, the carrier will be in an extremely unfavorable position. In

this context the carrier will feel at risk, not knowing when they will experience heavy losses, or even ruin, because of dangerous goods shipments, which is not favorable to the development of maritime dangerous goods transportation. Therefore, "Hague rules", "Hamburg rules" and other international conventions and national maritime law basically all impose dangerous goods shipper strict liability.

3.4.2 Specific content of dangerous goods shipper's liability

In addition to the basic liability of dangerous goods shippers, there are some issues of dangerous goods shipper's liability to be discussed, such as the liability on not properly packing or labeling dangerous goods.

The article 32(b) of Rotterdam Rules regulates "The shipper shall mark or label dangerous goods in accordance with any law, regulations or other requirements of public authorities that apply during any stage of the intended carriage of the goods. If the shipper fails to do so, it is liable to the carrier for loss or damage resulting from such failure."

Consequently, the author proposes to amend this provision as "the shipper shall package, mark and label dangerous goods properly, where the carrier sustains any loss due to violation of this obligation, shall be liable for compensation".

Followed by the examination of legal issues relating to dangerous goods shipper, the next chapter looks into legal issues of dangerous goods carrier who should play another important roles in legislation.

CHAPTER IV THE LEGAL ISSUES OF THE CARRIER IN THE LEGAL RELATION OF DANGEROUS GOODS TRANSPORTA- TION AT SEA

The carrier as one party in the legal relation of dangerous cargo transportation at sea does not draw as much attention as the shipper. When regulating the relationship between carrier and shipper, usually the shipper bears more obligations and the carrier gets more protection. The reason giving rise to this situation is based on the special risk of transit of dangerous goods and protecting the development of the shipping industry. With the development of the shipping market, only balanced right and interest can foster lasting development.

4.1 The right of dangerous goods carrier

The rights of the dangerous goods carrier are specified and can be disputable if an accident happens. They include the right of refusal to carry and the right of disposal.

4.1.1 The right of refusal to carry

When the carrier finds that it cannot deliver dangerous cargo loaded onboard to a destination safely, does it have the right of refusal to load? The case law of Britain and

America has different results. According to (Reports, [1957] Vol. 2, 2013), the carrier should receive the cargo and have no right to refuse, for example the case result of “Atlantic Duchess” (Daiches, Barrister, & Robert, Reports, Lloyd's Law [1957] Vol. 2, 1957). Another viewpoint is if it is impossible to transport safely, the carrier has the right to refuse, just like the conclusion of the case “Amphion”. (Daiches, Barrister, & Robert M, Reports, Lloyd's Law [1991] Vol. 2, 1991)

The right of refusal to transport dangerous cargo is the basic right of the carrier. The carrier can exercise this right at any time before dangerous goods are loaded, even though the carrier and shipper have an agreement on dangerous goods transportation because only safe transportation can achieve the goal of consignment of goods and maintain the interest of both parties. If dangerous goods transport by sea caused personal casualties, huge loss of social property, or environmental damage, obviously it would be better not to transport the cargo.

In real shipping practice, the carrier exercises the right of refusal in the following conditions. Firstly, the carrying ship is not fit for the carriage of the dangerous goods; secondly, the carrier does not have the corresponding qualification; thirdly, the shipper does not fulfill his obligations on packaging dangerous goods properly, marking and labeling, and informing in writing.

Of course, it is necessary to distinguish this right of the carrier from breach of contract. In real practice, it happens occasionally that the carrier breaches the agreed charter party in the name of exercising the right of refusal to carry. Some scholars said in the case that carrier is of legal qualification to carry dangerous cargo, the carrying ship is in good function, all crew is qualified, the shipper has qualifications for operating dangerous goods, cargo has been loaded onboard the ship and all the necessary valid certificates issued by concerning authorities have been obtained, generally speaking, the carrier

could not be entitled the right to refuse the cargo. On the contrary, in the case that any of the above mentioned premises exists, it should be considered the legitimacy of the carrier exercising the right to refuse (Ni, Civil rights and obligations of the carrier in the shipping contract of dangerous goods, 2005).

The paper concludes that the situation of when to exercise the right to refuse should depend on the concrete status of the ship, cargo and personnel at the moment and the shipper should bear the burden of proof for exercising the proper right of refusing to carry dangerous goods. Should the carrier be unable to supply proof, it bears the liability of breaching the contract.

4.1.2 The right of disposal

The right of dangerous goods disposal means during the process of carriage of dangerous goods by sea the carrier may have such goods landed, destroyed or rendered innocuous, without compensation. Once dangerous goods are involved in an accident during transportation at sea, it would lead to disastrous consequences. Based on the principle of saving the social treasure and mitigating cargo damage in return for the safety of the ship, personnel and environment, the carrier is entitled the right of disposal of dangerous goods, which is one of the most important rights of the carrier and the main feature of dangerous goods transport in the field of shipping distinguished from normal cargoes, and as such, needs to be explored in-depth.

4.1.2.1 The subject of the right of dangerous goods disposal

The Hague Rules regulates that the right of disposal should be exercised by the carrier. The author thinks the subject of right should also include the actual carrier. From the original idea of legislation, the purpose of setting the right of disposal is to reduce the damage and risk to ship, persons, cargo and marine environment, and finally to secure

safe shipping. In the situation that an actual carrier exists, the carrier is only the party of the carriage contract, and does not undertake real cargo transportation at sea. Dangerous goods transportation at sea is performed by the actual carrier. At the same time, the actual carrier controls and operates the dangerous cargo directly. Thus, when facing danger and risk, the right of disposal should be exercised by the actual carrier. If the right of dangerous goods disposal is not extended to apply to the actual carrier, this right will be exist in name only and run counter to the original idea of its legislation. The actual carrier will have no legal basis to dispose of dangerous goods and even suffer from claims from the shipper. Therefore, it is possible to entitle the actual carrier the right of dangerous goods disposal, conforming to the purpose of its legislation and of much necessity.

4.1.2.2 The time and prerequisite of exercising the right of disposal

Concerning issues on the time and prerequisite of exercising the right of disposal, there are two key issues.

Firstly, in case the shipper did not exercise the obligation of notification, which means the shipper did not inform the carrier of the description, character, measures to be taken in urgency concerning the dangerous goods, the carrier could exercise the right of disposal in the manner of “have such goods landed, destroyed or rendered innocuous when and where circumstances so require”¹⁰. The so called “circumstances so require” refers to conforming to the safety need, which means dangerous goods are potentially threatening the safety of the ship, persons and other cargo, but real danger has not occurred. The reason why the code regulates like this is because the carrier did not agree with the loading of the dangerous goods, neither made any preparation. To avoid the danger arising from dangerous goods, the carrier is entitled to dispose of the goods anytime, which also gives warnings to the shipper not to consign dangerous goods stealthily. Once it comes

¹⁰ Article 68 of China Maritime Code

to light by the carrier, the cargo could be disposed of, while the shipper could do nothing but to accept the punishment. It is thus clear that the carrier has a rightful space at that time, while the shipper seems to be sanctioned and punished to some degree. Some scholars believed that “as to whether the carrier exercise the right of disposal and the way of exercising the right depend on the discretion of carrier and captain of carrying vessel, and do not have to consider the interest of concerning parties” (Yang R. , 1997). In the author’s opinion, pending dangerous goods damage happening, the carrier should manage not to exercise the right so as to maintain the interests of the shipper and avoid the waste of social treasure.

Secondly, in case the carrier has knowledge of the nature of the dangerous goods and consents to their carriage, only when “they become an actual danger”¹¹ could the carrier exercise the right of disposal in order to remove the existing danger and prevent further loss. Because dangerous goods transportation in this condition is the result of agreement between the carrier and shipper, considering voyage safety, the carrier is entitled this special right, but the prerequisite is stricter than the previous condition. Actual danger here includes danger which will happen immediately in the case that no countermeasures are taken and a real objective status wherein, if no countermeasures are taken, danger would happen inevitably after a certain period. What calls for special attention is that the carrier bears the burden of proof for “becoming an actual danger”, or he will face the risk of claims from the shipper.

4.1.2.3 The contents of the right of disposal

The carrier can take the following three kinds of actions, “landed, destroyed or rendered innocuous”. “Landed” means land the goods from ship to the shore or discard it into the sea; “Destroyed” refers to wiping out physically; while “rendered innocuous” means to

¹¹ Article 68 of China Maritime Code

dispose of the goods in a certain way to make them non-threatening to the safety of ship, property and persons. In practice, the kinds of measures to be taken by carrier are not arbitrary, but according to the real situation at that time. The proper measures should cause minimum loss, be beneficial to sailing safety and maintain the interests of concerned parties. For example, if dangerous goods are not in danger or forming an urgent situation, the goods should be kept onboard and landed to the port of call or final destination, or the carrier should be liable for the compensation of the loss of the shipper resulting from the carrier's improper disposal measures. The principle is not to dispose of or discard the goods into the sea, but land them on the shore until berthing.

4.1.2.4 The legal nature of exercising the right of dangerous goods disposal

The right of disposal is a special right entitled to the carrier in light of the huge risk of dangerous goods transportation at sea, which is compulsory and is not restrained by the carriage contract between parties or bill of lading clause.

Compared with the value of the ship, other cargo carried, life of the crew, and the marine environment, dangerous goods are not so valuable. The right of disposal is to secure the bigger interest at the expense of the smaller interest, dangerous goods, which is a reflection of the idea in maritime law and the inevitable requirement of social legislation.

4.2 Obligation of dangerous goods carrier

The carrier is the operator providing the service of transportation to the shipper, whose main duty and obligation is to ensure the safety of shipping and cargo transportation. As to concerning laws and regulations, the obligations of the carrier have three aspects: the obligation of exercising due diligence to make the ship seaworthy; the obligation of managing dangerous goods; and the obligation of issuing B/L.

4.2.1 Obligation of exercising due diligence to make the ship seaworthy

During the process of cargo transportation at sea, exercising due diligence to make the ship seaworthy is the primary obligation of the carrier and the prerequisite of being entitled rights of carrier, which cannot be relieved or exempted by any form. This obligation has the consent of some international conventions including the Hague Rules and domestic maritime codes in various countries.

In practice of dangerous goods shipping, whether the carrying ship is seaworthy depends on the category of dangerous cargo. The carrier should fulfill the obligation of making the ship seaworthy based on different goods to be carried. Generally, the particularity of this obligation is reflected in the following three aspects.

First is the requirement of the carrying ship. In shipping practice, the carrier should equip and supply the ship as per the concerning laws, regulations and international conventions (such as International Code of the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk) so as to ensure the seaworthiness of the ship and achieve the aim of safe transportation.

The second aspect is proper manning. A qualified carrier should ensure that crew are familiar with the nature and character of the dangerous goods to be carried, of the normal experience of operating the goods, and take proper timely measures when in the dangerous conditions to prevent the further loss. In order to secure voyage safety, the carrier has the obligations of passing all materials related to the dangerous goods received from shipper to the captain and crew of the carrying ship. The court decision of the case *Societe Anonyme Desminerais v. Grant Trading Inc. (The "Ert Stefanie")* found that in case the carrier knows the nature or the character of the dangerous goods, it could be presumed that the captain and crew know it. (Daiches, Barrister, & Robert M, Reports, Lloyd's Law [1987] Vol. 2, 1987)Chapter 5 of STCW, Manila amendments,

points out the standard of manning for ships carrying dangerous goods that dangerous goods carrier shall comply with the regulations, or will face legal responsibility arising from the ship's unseaworthiness.

Thirdly, the ship should be made fit and safe for dangerous goods. To make the ship fit and safe for dangerous goods here means the cargo holds and the equipment could receive, carry, preserve and deliver the cargo to its destination safely. Generally speaking, different dangerous cargoes have different requirements on the condition of the carrying ship.

4.2.2 Obligation of managing dangerous goods

Given the risk and hazard of dangerous goods, the obligations of the carrier are much stricter than the normal cargo carrier's. The carrier should be familiar with the nature and character of the dangerous goods and of certain technological level. Basically, the obligations of the managing dangerous goods could be reflected in the following two aspects, loading and unloading of cargo as well as cargo stowage.

The First is loading and unloading dangerous cargoes. During the process of operating dangerous goods, the carrier should be very carefully. Generally, the carrier would entrust a port stevedoring company to load and discharge cargo. The stevedoring company is only a commissioned party, which is not party to the carriage contract. When cargo is damaged, the carrier should still be responsible for the safety of the dangerous goods. So the carrier should choose a qualified port stevedoring company to operate and supervise the stevedoring, avoiding the occurrence of accidents.

The second aspect is stowing cargoes. Cargo stowage is a highly technological, professional and complex operation, concerning multi-aspect issues, such as the nature of the goods, packaging and special preventative measures and carriage requirements. At the

same time, the ship's stability and consequence of discharging should also be taken into account. As to some goods needing special looking after, the carrier should stow the goods according to the directions of the shipper (Liu, 2003).

4.2.3 Obligation of issuing B/L

In the transport of dangerous goods by sea, the carrier must record on the bill of lading the description of the carried dangerous goods provided by the shipper, and indicate the word "dangerous goods".

4.3 Liability of dangerous goods carrier

To understand the liability of the dangerous goods carrier, the paper argues two issues. One is the basis of liability of the dangerous goods carrier, which locates the legal foundation. The other is the relationship between the privilege of the dangerous goods carrier and its violation of seaworthiness obligation.

4.3.1 Basis of liability of dangerous goods carrier

In view of the special circumstances of the sea, the Hague rules regulates the liability of the carrier based on incomplete fault liability, i.e. fault liability principle combine with exceptions.

In the transport of dangerous goods by sea, the carrier's liability is in line with normal cargo transportation but inserts immunity for the loss resulting from exercising the right of dangerous goods disposal, which is the most conducive to the carrier compared with other imputation principles. (Rediscussion on Principles of imputation of the carrier's liability for breach of contract, 2006)

4.3.2 Relationship between privilege of dangerous goods carrier and its violation of seaworthiness obligation

Some codes, like China Maritime Code, entitle the dangerous goods carrier some privileges such as the right of disposal, but when the carrier violates basic obligations, such as seaworthiness, does it have the right to claim the privilege? From the judge's decision of the case “British Mediterranean Freight Services Ltd. v. BP Oil International Ltd. (The "Fiona")” (Daiche, Barrister, & Robert M, 1994), above all the ship owner carrying the dangerous goods should act carefully to make the ship seaworthy, otherwise it cannot be endowed privilege; When the ship is not seaworthy, the carrier cannot claim the damage caused by dangerous goods.

It is arguable that a carrier is a carrier because it can use the ship and the crew to fulfill the transport task required by the shipper; otherwise, it is not a good carrier. In the case of a dangerous goods carrier in violation of the statutory obligations causing a loss of dangerous goods wherein the shipper has properly fulfill their obligations at the same time, the dangerous cargo carrier shall compensate for all losses.

Based on the arguments made in Chapter II, III and IV, the current on-going debates on legal issues concerning dangerous goods transport by sea were identified at international level. The next chapter V looks into the case of China, in particular, with the intensive examination of China’s Maritime Law, by comparing the international legislation.

CHAPTER V LEGAL ISSUES OF CARRIAGE OF DANGEROUS GOODS BY SEA IN CHINA

5.1 Legislation situation of maritime dangerous goods in China

5.1.1 Overview of maritime dangerous goods legislation in China

In the respect of domestic legislation of China, certain regulations in terms of dangerous cargo transportation at sea appear under Article 68 of the China Maritime Code. In addition, in 2000, the Rules of Domestic Waterway Cargo Transportation also set forth legal issues of domestic dangerous cargo transportation based on the situation in which increasing amount of dangerous cargo were transported along the coast and through inland waters of China. Related regulations also could be seen in the Article 307 of the Contract Law of the People's Republic of China (Standing Committee of the National People's Congress, 1999).

The Maritime Act (Taiwan Area) has more detailed regulations on dangerous goods transportation, of which the article 55 sets forth the duty of shipper on notification¹². The

¹² Maritime Act (Taiwan), Article 55: The shipper shall guarantee to the carrier the accuracy of the notifications of the name, quantity, or their kind of packing, the number of packages of the cargo delivered, and the shipper shall indemnify the carrier against all loss, damages and expenses arising or resulting from inaccuracies in such particulars. The

article 64 concerns the issue of “cargo of a contraband or being declared fraudulently”¹³. While the Article 65 states the regulations on the freight of cargo aboard without declaration and settles measures thereof when in danger¹⁴.

5.1.2 Consolidation to International legislation: China’s response

The previous chapters discussed how the international legislation on dangerous goods transportation by sea has been developed. Namely, Hague Rules, Hamburg Rules, and Rotterdam Rules are the most important regulations at international level. All these international legal movements are, however, not necessarily reflected in the domestic laws at national level. This is true to the case of China. Rather, China has developed its own system for dangerous goods transportation. For example, in China,, a strict management system on dangerous goods transportation has been established. In accordance with this system development, and a number of maritime dangerous goods technical legal norms have been formulated, which are currently found in some administrative regulations and national standards.

5.1.3 Technical legal norms of maritime dangerous goods in China

National standards are an important part of the maritime dangerous goods legal system in China, including both compulsory and voluntary standards. The present list of nation-

carrier is not entitled to a defense against any holders of the bill of lading other than the shipper on account of his claim against the shipper mentioned in the preceding paragraph.

¹³ Maritime Act (Taiwan), Article 64, Cargo of a contraband or being declared fraudulently with knowledge by the carrier, the carrier shall refuse to carry it. The same rule applies where the nature of the cargo tends to cause damage to the ship or endanger the health of the personnel on board the ship, provided that those are allowable under a custom of shipping or commercial trade. Cargo of an inflammable, explosive or dangerous nature whereof the carrier has consented with knowledge of their nature becoming a danger to the ship or cargo, may at any time be landed at any place, or destroyed or rendered innocuous by the carrier without compensation except to general average, if any.

¹⁴ Maritime Act (Taiwan), Article 65: The carrier or shipmaster found any cargo aboard without declaration may unload them at the loading port, or charge the freight at the highest rate on the same kind of cargo under the same voyage, and may also claim damages, if any. The cargo mentioned in the preceding paragraph if found during the voyage and are of contraband or of a nature of danger, may be jettisoned by the shipmaster, if necessary.

al standards of dangerous goods in China is shown in Table 5.1.

Table 5.1: Main national standards of dangerous goods in China

Item number	Item title
GB190-2009	Packing symbol of dangerous goods (AQSIQ; China national standardization management committee, 2010)
GB6944-2005	Classification and code of dangerous goods (AQSIQ; China national standardization management committee, 2005)
GB11806-89	the radioactive material transportation safety regulations
GB12268-2005	List of dangerous goods (AQSIQ; China national standardization management committee, 2005)
GB12463-90	General technical conditions on the transport packaging of dangerous goods (AQSIQ; China national standardization management committee, 2013)
GB16994-1997	the basic requirements on oil terminal security technology
GB 17422-1998	the liquefied gas carrier concerning lightering operation safety standards
GB18180-2000	the liquefied gas ship safety requirements
JT154-94	the oil tanker washing operation safety technical requirements
JT416-2000	the liquid gas wharf safety technical requirements
JTJ237-99	the loading and unloading oil wharf code for fire protection design
GB/T15626-1995	the bulk liquid chemicals port technical requirements

On top of this list, China has developed a special legal framework, called Waterway Dangerous Goods Transportation Rules (Ministry of Transport of the People's Republic of China, 1996). On November 4, 1996, the Ministry of Transport of China issued the Waterway Dangerous Goods Transportation Rules, which came into force on December 1, 1996. The rules have made detailed provisions of dangerous goods packing, marking, shipping, transport, loading and unloading, storage, delivery and safety emergency measures within the territory, which play an important role in waterway dangerous

goods transportation management, ensuring transportation safety, preventing accidents and promoting dangerous goods transportation in China. It is important to note that it is only applicable to packaged dangerous goods, and bulk cargoes transportation is bound by other relevant international or domestic rules.

The overview of national legislation in China provides only a limited understanding of legal issues of dangerous cargo transportation. The following sections will break down the issues relating to the shipper and the carriers in China respectively in terms of dangerous goods transportation by sea.

5.2 Legal concerns of the shipper in China

This section aims to conceptualize the legal issues of the dangerous goods shipper in China and analyze the major legal concerns by comparing with international legislation.

5.2.1 The scope of dangerous goods shipper

The China Maritime Code offers a definition of shipper. As per the article 42 of the China Maritime Code “Shipper means a) The person by whom or in whose name or on whose behalf a contract of carriage of goods by sea has been concluded with a carrier; b) The person by whom or in whose name or on whose behalf the goods have been delivered to the carrier involved in the contract of carriage of goods by sea”.

That is to say, the dangerous goods shipper includes two categories; one is the party who signs a contract of carriage with the carrier, namely contracting shippers. Another is the party to deliver the cargo to the carrier under the trade term FOB (i.e. the actual shipper). The author understands that, in the transport of dangerous goods by sea, both kinds of shipper shall be entitled the legal rights, and shall fulfill their obligations to the special law. The reason is because, under the trade term of FOB, the buyer, who signs a contract of dangerous goods carriage with the carrier, has an obligation to inform the carrier of

the dangerous nature of the goods, which is the basis of the two parties reaching a contract of carriage of dangerous goods. The buyer, of course, is not personally in charge of the goods, and may not have even seen the goods. In such cases, the obligation should be performed by the actual shipper. If the contracting shipper as well as the actual shipper did not fulfill their legal duty to the carrier, both shippers shall bear joint liability.

5.2.2 Legal qualification of dangerous goods shipper in China maritime law system

Legal qualification here refers to the basic conditions and minimum requirements regulated in legal provisions that one must possess to engage in a certain industry. At present, China has no related legislation to regulate issues on legal qualification of dangerous goods shippers.

In 2002, China promulgated the Hazardous Chemical Materials Safety Management Regulations (State Council of the People's Republic of China, 2011), in which the article 27 stipulates that the state implement a licensing system on dangerous chemicals business sales. Without permission, no unit or individual shall engage in the sale of dangerous chemicals. In shipping practice, a dangerous goods shipper is usually a dangerous chemical production and sales company, such as a chemical plant, or oil company. They are familiar with the nature of dangerous goods, have good credit standing and good conditions for exercising dangerous goods shipper's duties. On the other hand, smaller scale shippers and those involved in dangerous goods occasionally lack risk consciousness and necessary knowledge of dangerous goods, which seriously affects normal maritime dangerous goods transport.

In order to ensure the security of dangerous goods transportation by sea, it is necessary to change the present dangerous goods shipper market chaos. This requires the establishment of a good practice in dangerous goods shipping and promotion of the benign

and healthy development of dangerous goods transport. Thus, introducing the scheme of dangerous goods shipper qualification permission is necessary.

In China, taking effect on April 1, 2005, the Railway Dangerous Goods Shipper Qualification Licensing Method (Ministry, 2013) made specific provisions on the conditions of obtaining the dangerous goods shipper qualification, and materials to be submitted, along with examination and approval matters, which is of great enlightenment for setting up China's maritime dangerous goods shipper qualification licensing system. Administrative License Law of China stipulated in the article 12 "The procedure for administrative permission may be instituted for matters relating to the special activities that directly involve State security, macro-economic control and protection of the ecological environment and that have a direct bearing on human health and the safety of people's lives and property, which are subject to approval in accordance with the statutory requirements" (Standing Committee of the National People's Congress, n.d.). This is the legal basis for the establishment of a maritime dangerous goods shipper qualification licensing system in China.

Those who engage in shipping dangerous goods shipping, and are familiar with dangerous goods enterprise, can be granted the shipping dangerous goods shipper qualification by maritime authorities. Those who temporarily consign dangerous goods enterprises can entrust a qualified enterprise to do it.

5.2.3 Legal right of dangerous goods shipper in China maritime law system

China Maritime Code has similar regulations with international conventions on limitation of right of disposal in the article 68, that is "Notwithstanding the carrier's knowledge of the nature of the dangerous goods and his consent to carry, he may still have such goods landed, destroyed or rendered innocuous, without compensation, when

they become an actual danger to the ship, the crew and other persons on board or to other goods...”.

As to the right of claim of the shipper of other cargoes shipped on the same ship, the carrier shall be liable for the loss of the shipper due to reasons not entitled to exoneration, if the cargo is not transited to the destination safely. Legal ground could be found in the article 107 of China Contract Law and the article 54 of the China Maritime Code, which regulate that “Where loss or damage or delay in delivery has occurred from causes from which the carrier or his servant or agent is not entitled to exoneration from liability, together with another cause, the carrier shall be liable only to the extent that the loss, damage or delay in delivery is attributable to the causes from which the carrier is not entitled to exoneration from liability”.

5.2.4 Obligations of dangerous goods shipper in China maritime law system

Dangerous goods shipper are obliged to various aspects of the transportation process. This section addresses the shipper’s obligations in five parts: (1)The obligation of providing dangerous cargo as per contract; (2) The obligation of providing necessary documents needed in transportation; (3)The obligation of packaging properly for dangerous goods; (4)The obligation of marking and labeling properly for dangerous goods; and (5)The obligation of notification. Analysis of legal issues in dangerous goods shipper’s obligations leads to the author’s suggestions of modifying the China Maritime Code.

(1)The obligation of providing dangerous cargo as per contract

China Maritime Code does not clarify that the shipper has the liability to deliver the dangerous goods, while generally after the shipper and carrier reach the agreement and sign the contract for the carriage of dangerous goods by sea, the carrier should have known the characteristics of the dangerous goods to be carried and make necessary

preparations. The Shipper shall, according to the agreement with carrier or carrier's request, deliver the goods under the contract alongside, quay shed or other place, and hand them over to the carrier or actual carrier for shipment. Unless otherwise agreed in the contract of carriage or with the permission of the carrier, the shipper shall not change the stipulated description or quantity of commodities arbitrarily. In case the shipper providing the dangerous cargo is not under the contract, the carrier has the right of asking the shipper to change the cargo or request the shipper to take the liabilities for breach of the contract.

China Maritime Code Modification Suggestions proposed to give the shipper a duty in providing the intended goods. That is "the shipper shall, in accordance with the stipulations of the contract of carriage of goods by sea, deliver the goods to the carrier. Goods delivered to the actual carrier or the carrier specified can be regarded as to the carrier" (Si & Hu, China Maritime Code revising amending proposal draft provisions, legislation reference cases and interpretations, 2003), which provides the dangerous goods shipper solid legal protection to implement the contract of carriage of dangerous goods by sea.

(2) The obligation of providing necessary documents needed in transportation

Article 67 of the China Maritime Code states that "The shipper shall perform all necessary procedures at the port, customs, quarantine, inspection or other competent authorities with respect to the shipment of the goods and shall furnish to the carrier all relevant documents concerning the procedures the shipper has gone through. The shipper shall be liable for any damage to the interest of the carrier resulting from the inadequacy or inaccuracy or delay in delivery of such documents", which is of great importance to carriage of dangerous goods by sea.

(3) The obligation of packaging properly for dangerous goods

Article 68 of the China Maritime Code also points out that the shipper shall have dangerous goods properly packed.

(4)The obligation of marking and labeling properly for dangerous goods

China Maritime Code also clarifies in article 68 that “...the shipper shall, in compliance with the regulations governing the carriage of such goods, have them properly packed, distinctly marked and labeled...”.

It is important to note that the foregoing “regulations governing the carriage of such goods” is so fuzzy and inoperable that what rules and specific basis shall be followed for dangerous goods transport is debated.

At present, some unified standards on marking and labeling for dangerous goods has been formed, such as the IMDG Code, which provides the most important standard at the international level. In China, there are also some related standards, such as The Regulation on Administration of Foreign Trade Dangerous Goods Mark and Label (Maritime Safety Administration of the People's Republic of China, 1991), and Packing symbol of dangerous goods (GB190-2009).

Article 268 of the China Maritime Code regulates that: “If any international treaty concluded or acceded to by the People's Republic of China contains provisions differing from those contained in this Code, the provisions of the relevant international treaty shall apply, unless the provisions are those on which the People's Republic of China has announced reservations. International practice may be applied to matters for which neither the relevant laws of the People's Republic of China nor any international treaty concluded or acceded to by the People's Republic of China contain any relevant provisions.”, which means international treaties are a part of regulations governing the carriage of such goods.

Therefore, it can be suggested that “in compliance with concerning regulations” regulated in article 68 of the China Maritime Code should be modified as “in compliance with the provisions of laws, administrative regulations and departmental rules”, which may avoid substantial controversy.

China Maritime Code regulates that the shipper shall have dangerous goods properly packed, distinctly marked and labeled”. As to the situations that the shipper did not mark or label for dangerous goods, The China Maritime Code and Rotterdam Rules have the same regulations, which require the shipper to be liable to the carrier for any loss, damage or expense resulting from such shipment.

(5)The obligation of notification

Article 68 of the China Maritime Code also clarify the liability of notification of the shipper; at the same time, the way of notification is in writing and the contents to be informed are two parts: proper description, nature and the precautions to be taken.

The article 68 requires notification to be in writing, which the author thinks is necessary and could be deemed as a sort of progress. In real practice, if the shipper informs the carrier or performing party orally or by telephone, once an accident happens, it is very hard to prove whether the shipper has fulfilled the obligation of notification. This does not benefit the settlement of disputes. In this case, the requirement of notification in writing could easily conquer this problem of proof.

The China Maritime Code regulates that the contents to be informed are the proper description, nature and the precautions to be taken, while the most important items to be informed are the nature and the precautions to be taken. The notification of precautions here is important for determining whether the carrier has fulfilled the responsibility of looking after the dangerous goods when some losses have occurred.

5.2.5 The liability of dangerous goods shipper in China maritime law system

Similarly, dangerous goods shipper are liable to various aspects of the transportation process. This section addresses the shipper's liability in three parts: (1)The liability on not properly packing or making dangerous goods label; (2)The liability of breaching the obligation of submitting documents to the carrier; and (3) The liability of violating the obligation of notification. Analysis of legal issues in dangerous goods shipper's liability is presented and the problems within the China Maritime Code are identified.

(1)The liability on not properly packing or making dangerous goods label

Article 68 of China Maritime Law does not clarify the liability of the shipper on violating the obligation of properly packaging or making dangerous goods marks and labels, which is a legal loophole and produces a lot of problems in practice. In addition, article 66 of the China Maritime Code regulates "the shipper shall indemnify the carrier against any loss resulting from inadequacy of packing or inaccuracies in the abovementioned information", which means the principle of strict liability provisions shall be applicable and the shipper bears the liability to pay compensation for breach of normal goods packaging. Zhou (2005) argues that, in case the shipper, failing to fulfill its obligations to these two, causes damage to the carrier, the shipper shall bear fault liability to pay compensation instead of strict liability. It is essential that the dangerous goods shipper shall undertake strict liability. To summarize, marking and labeling dangerous goods properly are important premises of dangerous goods transportation safety. No matter whether there is fault on the duty, the shipper shall be liable for compensation.

(2)The liability of breaching the obligation of submitting documents to the carrier

On the basis of article 67 of the China Maritime Code "The shipper shall be liable for any damage to the interest of the carrier resulting from the inadequacy or inaccuracy or delay in delivery of such documents". The shipper of dangerous goods shall bear strict

liability in violation of this obligation and be liable for any losses incurred of the carrier, regardless of fault or not.

(3) The liability of violating the obligation of notification

The situations of violating the obligation of notification are more complex. Whether the carrier has knowledge of the dangerous goods or not will lead to different liability of the shipper different.

Paragraph 1 of article 68 of the China Maritime Code regulates the liability the shipper shall bear in violation of the responsibility of notification, but does not specify whether the carrier being informed is a prerequisite; paragraph 2 rules the carrier's liability when he has knowledge of the dangerous goods, but no rules exist on who will pay the loss and whether the shipper needs to bear the liability. The author believes that article 68 of China Maritime Law should be clear on the liability of the shipper and carrier in different situations. In the case that the carrier of the goods has no knowledge of the dangerous nature, the shipper shall be liable for damages, and the carrier is of no liability. On the contrary, in the case that the carrier knows the dangerous nature of the goods, the shipper shall be liable for damages, but these may be reduced or remitted appropriately.

5.3 Legal concerns of the carrier in China

This section aims to conceptualize the legal issues of the dangerous goods carrier in China by using the similar method of analysis as it was demonstrated for the issues of the dangerous goods shipper. It also analyzes the major legal concerns of China by comparing with international legislation.

5.3.1 The scope of dangerous cargo carrier

According to article 42 of China Maritime Law, "carrier means the person by whom or in whose name a contract of carriage of goods by sea has been concluded with a shipper". The dangerous cargo carrier collects freight and is in charge of carriage of dangerous goods by sea from one place to another, so as to realize the transfer of dangerous goods on geographical position. The author thinks that either the contracting carrier or the actual carrier, the NVOCC (non-vessel Operating Common Carrier) shall be subject to the adjustment of legal norms on carriage of dangerous goods, shall enjoy the legal rights, and also bear the corresponding obligations.

5.3.2 Legal qualification of Dangerous cargo carrier in China maritime law system

The maritime dangerous cargo carrier, differing from the non-dangerous cargo carrier, as a special main body, must have special legal qualifications. Because what the dangerous cargo carrier transports is cargo able to bring great danger to the ship, onboard goods, people's lives and health and the marine environment. Any carelessness will lead to the ship being destroyed and people's deaths. In order to ensure the safety of maritime transport, various countries require dangerous cargo carriers to meet the technical conditions and requirements of the safe transport of dangerous goods. The carrier with dangerous cargo proper disposal technology and ability when in unexpected situations can be admitted into the dangerous cargo shipping market.

On the basis of the Ship Carrying Dangerous Goods Safety Supervision and Administration of China, dangerous cargo carrier's legal qualifications include three aspects: management system, personnel, and ship (The ministry of transport of the People's Republic of China, 2012). The detailed requirements of each aspect are as follows:

(1) Management system requirements: the owner or the operator or manager shall establish and implement the ship safety operation and pollution prevention management system, guaranteeing safety life and property, and prevention and control of environmental pollution, while compiling a dangerous goods leakage accident emergency plan and ship oil spill emergency response plan, equipped with corresponding facilities and equipment on first aid, firefighting and personnel protection, and ensuring effective implementation.

(2) Personnel requirements: captain, the crew shall hold the certificate of competency and the corresponding training certificate issued by MSA, be familiar with dangerous goods safety knowledge and operation procedures of carrying vessels; know the dangers, hazards and safety precautions of the dangerous goods carried in advance; master relevant knowledge of safe shipment; in the event of accident, should follow contingency plans to take appropriate action. Command personnel, engaged in crude oil washing operations should attend the crude oil washing (COW) special training.

(3) Ship requirements: for vessels carrying dangerous cargo, its hull, structure, equipment, performance, and arrangement should comply with concerned regulations. International ships should also comply with the provisions of the relevant international conventions.

For all the three actors, namely, a contracting carrier, actual carrier, and NVOCC, a question may arise whether it is necessary to rule that they all must possess the qualifications of dangerous goods transportation. To this, Ni (2005) suggests that the dangerous goods actual carrier must have the legal qualification, while the contracting carrier and NVOCC do not need to have the qualifications (Ni, Qualification of operating common carrier for dangerous freights, 2005). The author believes that they shall have different qualifications in accordance with their respective position. For an actual carrier, specifically engaged in dangerous goods transport, as whether dangerous goods can be safely

arrived at the port of destination has a close relationship with its technical conditions, and emergency response disposal ability; therefore, the actual carrier must have qualifications in the above three aspects.

Contracting carrier or NVOCC, for their part, do not actually participate in dangerous goods transport, and have nothing to do with the requirements of the ship and crew, but they are a party of the contract of carriage of dangerous goods, and must have knowledge of dangerous cargo management, be familiar with the nature of dangerous goods, and dangerous goods transport requirements of the state management as well as ships carrying dangerous goods safety conditions. Otherwise, it will be difficult to achieve the purpose of shipping safety.

5.3.3 Legal right of dangerous goods carrier in China maritime law system

Dangerous goods carrier have certain rights in various aspects of the transportation process. This section addresses the carrier's obligations in three parts: (1) The right of refuse to carry; (2) The right of disposal; and (3) Privilege of immunity. Analysis of legal issues in dangerous goods carrier's rights, therefore, will help us to understand the obligations and liability of carrier.

(1)The right of refuse to carry

As Yang (1998) states, "if the risk is too high to avoid and take precautions against, we cannot ask master and crew to seek their doom for the voyage, which is not the issues of performance". Article 21 of "Management of ship carrying dangerous goods safety supervision" regulates that a "ship shall refuse loading and carriage in case the package and stowage of dangerous goods do not comply with the concerning international and domestic regulations".

The article 306 of “China Contract Law” clarifies that if the shipper does not package the cargo according to the agreement or does not package the cargo as per article 156 when there is no agreement or the manner of packaging is unspecified, the carrier can refuse to transport. These regulations are the legal basis of the right of the carrier on refusal to carry dangerous goods.

(2)The right of disposal

Same with Hague Rules, China Maritime Code regulates that the right of disposal should be exercised by carrier. The article 61 regulates “The provisions with respect to the responsibility of the carrier contained in this Chapter shall be applicable to the actual carrier”. It is unreasonable for the actual carrier to bear the same responsibility as the carrier and not to have the corresponding rights entitled to the carrier. In this context, the actual carrier should have the right of disposal same as the carrier.

(3)Privilege of immunity

According to article 68 of the China Maritime Code, the carrier may dispose of dangerous goods without compensation. In another words, the carrier has the privilege of immunity. In addition, article 51 of China Maritime Code lists 11 exception causes, which also entitle the carrier more broad privileges of immunity, of which clauses 8, 9 and 10 are mostly touched upon. That is to say, the carrier shall not be liable for the loss of or damage to the goods arising or resulting from an Act of the shipper, owner of the goods or their agents; Nature or inherent vice of the goods; Inadequacy of packing or insufficiency or illegibility of marks.

5.3.4 Obligations of dangerous goods carrier in China maritime law system

Dangerous goods carrier are obliged to various aspects of the transportation process. This section addresses the carrier’s obligations in three parts: (1) The obligation of exer-

cising due diligence to make the ship seaworthy; (2) The obligation of managing dangerous goods; and (3) The obligation of issuing B/L.

(1)The obligation of exercising due diligence to make the ship seaworthy

Article 47 of the China Maritime Code points out “The carrier shall, before and at the beginning of the voyage, exercise due diligence to make the ship seaworthy, properly man, equip and supply the ship and to 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)The obligation of managing dangerous goods

Article 48 of the China Maritime Code points out that “The carrier shall properly and carefully load, handle, stow, carry, keep, care for and discharge the goods carried.” Given incidents often happens due to improper loading, unloading or stowing, these aspects should draw more attention in real practice.

(3)The obligation of issuing B/L

Article 72 of the China Maritime Code regulates that “When the goods have been taken over by the carrier or have been loaded on board, the carrier shall, on demand of the shipper, issue to the shipper a bill of lading.”, which is the legal basis of the carrier’s obligation.

5.3.5 Liability of dangerous goods carrier in China maritime law system

In view of the special circumstances of sea, China Maritime Code, same with Hague Rules, regulates the liability of the carrier is based on the incomplete fault liability. There are 12 items (see Appendix 1), such as nautical fault exemption, enumerated in article 51 of China Maritime Code.

China maritime law system was established in view of various international conventions, consequently, although there are some particular features, but it is basically in line with international conventions.

CHAPTER VI CONCLUSION

This dissertation examined the definition of maritime dangerous goods, the current situation and the trend of legislation of maritime dangerous goods transportation and the legal status of the parties of dangerous goods carriage contract. It began with the international level of legislation to understand a holistic view of legal issues relating to maritime dangerous goods transportation and the Chapter V focused on the legislation in China to identify the gap between the international and China's regulations. Taking into the discussions presented earlier, this chapter draws the following conclusions and recommendations:

Firstly, the trend of legislation on maritime dangerous goods transportation is reflected in the following aspects:

- (1) The definition of dangerous goods is becoming further clarified in legal relations.
- (2) There is a greater focus on issues of marine environmental protection.
- (3) The legal status of respective parties in legal relations of international dangerous cargo transportation is being clarified; furthermore, the rights and duties as well as the allocation of liability of both shipper and carrier are becoming reasonable.

Secondly, by analyzing the definition of international conventions, Chinese maritime law theorists and the shipping industry, common law scholars and legal precedents, the author believes that dangerous goods refers to:

(1)the goods in the process of maritime transport, which because of their flammable, explosive, corrosive, toxic, radioactive and other physical, chemical, biological and mechanical properties, which could make the ship, the carried goods, persons and marine environment suffer damages, need special protection;

(2)the goods included but not limited to IMDG rules and dangerous goods listed in the directory of goods from all over the world; but

(3)the goods that are deemed to illegal as per port state laws or national policy intervention are not included.

Thirdly, a dangerous goods shipper qualification licensing system should be set up to guarantee dangerous goods shipping safety and promote dangerous goods benign and healthy development. In the aspect of right, the dangerous goods shipper has the right to require the carrier to carry the dangerous goods in safety, and the right of claim. For their obligation, the dangerous goods shipper shall provide dangerous cargo as per contract and the necessary documents, shall pack, mark and label the dangerous goods properly and notify the carrier PSN (proper shipping name) and nature of dangerous goods and the countermeasures to be taken when in danger. In the aspect of liability, the dangerous goods shipper is based on the principle of strict liability.

Fourthly, as the other party of maritime dangerous goods carriage contract, the dangerous goods carrier shall be of special legal qualification and China shall set up a corresponding dangerous goods carrier qualification licensing system. In the aspect of rights, the dangerous goods carrier is entitled some special rights, such as the right of refusal to

carry, right of disposal, and privilege of immunity. For their obligation, considering the particularity of dangerous goods, there are some special requirements to the carrier on ensuring ship seaworthiness with due diligence, managing dangerous goods properly and carefully, and issuing a bill of lading. In the aspect of liability, the dangerous goods carrier is based on the principle of incomplete fault liability.

The author considers that during the process of maritime dangerous goods shipping, provided that carrier and shipper exercise due diligence and fulfill the rights and obligations according to concerning laws carefully, the accident rate of dangerous goods shipping will decline sharply, which is of a great impact on ensuring shipping safety, and protecting the maritime environment.

To conclude, given that dangerous cargo transportation holds an important position in the field of maritime transport, the study suggests the amendment of China's Maritime Law. To do this, the establishment of the Committee for the amendment of China's Maritime Law is suggested. The Committee needs to analyze the situation of China first, and then, on the basis of many years of experience in dangerous goods transportation by sea, discuss the ways in which China could absorb the prevailing international conventions and international shipping practice. The amendment of China's Maritime Law should also be aware of the present situation and development trends of maritime dangerous goods legislation, and make comprehensive yet specific provisions for the relevant legal issues of dangerous goods transportation. Specific contents of the proposal for the amendment of China's Maritime Law are as follows:

(1) Define dangerous goods clearly and more operably and provide clarification when the shipper and carrier both cannot be sure whether the cargo is dangerous goods. A certain authority should be nominated to conduct identification, such as CMSA, to avoid affecting the smooth progress of maritime transport.

(2) Strengthen the protection of other goods onboard the same ship with dangerous goods in legislation and provide adequate legal basis for related claims.

(3) Modify “in compliance with concerning regulations” regulated in article 68 of China Maritime Code as “in compliance with the provisions of laws, administrative regulations and departmental rules”, which may avoid much controversy.

(4) Amend article 66 as "the shipper shall package, mark and label dangerous goods properly, where the carrier sustains any loss due to violation of this obligation, shall be liable for compensation", to set a basis of liability for the shipper not properly packing or labeling dangerous goods.

Finally, this research is just the beginning of examining China’s Maritime Law in terms of dangerous goods transportation by sea. It is a wish of the author that this small piece of work will encourage further discussions of improving the legislation in China and thus, any dangerous goods related accidents are to be avoided and seafarers are legally protected.

REFERENCES

- AQSIQ; China national standardization management committee. (2010, May). *GB 190-2009: Packaging Symbol of Dangerous Goods*. Retrieved from PDFCAST.ORG: <http://pdfcast.org/pdf/gb-190-2009-packaging-symbol-of-dangerous-goods>
- AQSIQ; China national standardization management committee. (2005, Nov). *Classification and code of dangerous goods*. Retrieved from Ministry of Industry and Information Technology of the People's Republic of China: <http://www.miit.gov.cn/n11293472/n11293877/n14505342/n14506895/n14514379/n14592313.files/n14592312.pdf>
- AQSIQ; China national standardization management committee. (2013). *General technical conditions on the transport packaging of dangerous goods*. Retrieved from Baidu Library: <http://wenku.baidu.com/view/9d2aa804b52acfc789ebc9f4.html>
- AQSIQ; China national standardization management committee. (n.d.). *List of dangerous goods*. Retrieved from CHEMICAL INSPECTION & REGULATION SERVICE: http://www.cirs-reach.com/China_Chemical_Regulation/Gb_12268_2012_List%20of%20dangerous%20goods.pdf
- Cai, S. (2003). *Environment and Resources Law*. Beijing: The people's court press; the Chinese people's public security university press.
- CINS sees sins at sea. (n.d.). Retrieved from HCB: <http://www.hazardouscargo.com/content/cins-sees-sins-sea>
- CLARKSONS. (2010). *Shipping Intelligence Network 2010*. Retrieved from CLARKSONS: <http://www.clarksons.net/sin2010/ts/>
- Commercial law*. (2013, Apr). Retrieved from WIKIPEDIA: http://en.wikipedia.org/wiki/Commercial_law
- Daiches, M., Barrister, & Robert M. (1987). *Reports, Lloyd's Law [1987] Vol. 2*. Retrieved from i-law.com: <http://www.i-law.com/ilaw/doc/view.htm?id=150561>

- Daiches, M., Barrister, & Robert. (1957). *Reports, Lloyd's Law [1957] Vol. 2*. Retrieved from i-law.com: <http://www.i-law.com/ilaw/doc/view.htm?queryString=Atlantic+Duchess&citiPub=Lloyd's+Law+Reports&sort=date&sort=date&searchType=advanced-search&se=2&id=144806&searched=true>
- Daiches, M., Barrister, & Robert M. (1991). *Reports, Lloyd's Law [1991] Vol. 2*. Retrieved from i-law.com: <http://www.i-law.com/ilaw/doc/view.htm?id=149856>
- Daiche, M., Barrister, & Robert M. (1994). *Reports, Lloyd's Law [1994] Vol. 2*. Retrieved from i-law.com: <http://www.i-law.com/ilaw/doc/view.htm?id=149869>
- Dangerous goods labels*. (2011). Retrieved from universal global logistics: <http://www.universalgloballogistics.com/en/herramientas.mercanciasPeligrosas.php>
- Fu, X. (1996). *The People's Republic of China maritime law interpretation*. Beijing: The people's court press.
- Full-text of U.S. Senate COGSA '99 (September 24, 1999)*. (1999, Sep 24). Retrieved from McGill: <http://www.mcgill.ca/maritimelaw/maritime-admiralty/cogsa#BM17>
- Legal Rights*. (2013, Mar 20). Retrieved from STANFORD ENCYCLOPEDIA OF PHILOSOPHY: <http://plato.stanford.edu/entries/legal-rights/>
- Liu, X. (2003). Discussion on the responsibility of dangerous goods carrier. *Academic Research*, 80.
- Maritime Safety Administration of the People's Republic of China. (1991). *The Regulation on Administration of Foreign Trade Dangerous Goods Mark and Label*. Retrieved from Baidu Library: <http://wenku.baidu.com/view/8256870002020740be1e9b73.html>
- Ministry, C. R. (2013, 9 8). *Railway Dangerous Goods Shipper Qualification Licensing Method*. Retrieved from Baidupedia: <http://baike.baidu.com/view/2470600.htm>
- Ministry of Transport of the People's Republic of China. (1996, Nov 4). *Waterway Dangerous Goods Transportation Rules*. Retrieved from Miniistry of Transport

of the People's Republic of China:

http://www.moc.gov.cn/zhuzhan/zhengwugonggao/jiaotongbu/jiaotongbuling/200709/t20070926_410842.html

- Mo, S. (1999). China Maritime Code. In S. Mo, *China Maritime Code* (p. 68). Beijing: Legal Press.
- Ni, X. (2004). On legal relationships in marine transportation of hazardous goods. *ANNUAL OF CHINA MARITIME LAW*, 267.
- Ni, X. (2005). Civil rights and obligations of the carrier in the shipping contract of dangerous goods. *Rearl River Water Transport*, 31.
- Ni, X. (2005). Qualification of operating common carrier for dangerous freights. *PEARL RIVER WATER TRANSPORT*, 36.
- Nikaki, T., & Soyer, B. (2012). *New International Regime for Carriage of Goods by Sea: Contemporary, Certain, Inclusive and Efficient, or Just Another One for the Shelves*. Retrieved from HEINONLINE:
http://heinonline.org/HOL/Page?handle=hein.journals/berkjintlw30&div=13&g_sent=1&collection=journals
- Redisussion on Principles of imputation of the carrier's liability for breach of contract*. (2006, Oct 26). Retrieved from lawtime.cn:
<http://www.lawtime.cn/info/lunwen/jjfaishang/2006102659291.html>
- Rotterdam Rules*. (2013, Sep 25). Retrieved from WIKIPEDIA:
http://en.wikipedia.org/wiki/Rotterdam_Rules#cite_note-un-1
- Shanghai Communication University. (2005). *Dictionary of Communication*. Shanghai: Shanghai Communication University Press.
- Si, Y. (2003). China Maritime Code. In Y. Si, *China Maritime Code* (p. 120). Beijing : Legal Press.
- Si, Y., & Hu, Z. (2003). China Maritime Code revising ammending proposal draft provisions, legislation reference cases and interpretations. In Y. Si, & Z. Hu, *China Maritime Code revising ammending proposal draft provisions, legislation*

- reference cases and interpretations* (p. 247). Dalian: Dalian Maritime University Press.
- Standing Committee of the National People's Congress. (1999, Mar 15). *Contract Law of People's Republic of China*. Retrieved from Law Library: http://www.law-lib.com/law/law_view.asp?id=475&page=2
- Standing Committee of the National People's Congress. (1999, Mar 15). *Contract Law of People's Republic of China*. Retrieved from Law Library: http://www.law-lib.com/law/law_view.asp?id=475&page=2
- Standing Committee of the National People's Congress. (n.d.). *Administrative License Law of the People's Republic of China*. Retrieved from Baidu Library: <http://wenku.baidu.com/view/b2d74129915f804d2b16c113>
- State Council of the People's Republic of China. (2011, Mar 11). *Hazardous Chemical Materials Safety Management Regulations*. Retrieved from the Central People's Government of the People's Republic of China: http://www.gov.cn/zwggk/2011-03/11/content_1822783.htm
- Suominen, M., & Suhonen, M. (2007). *Dangerous Goods Related Incidents and Accidents in the Baltic Sea Region*. Retrieved from DaGoB publication series 7:2007: <http://info.tse.fi/dagob/documents/Dangerous%20Goods%20Related%20Incidents%20and%20Accidents%20in%20the%20Baltic%20Sea%20Region%20PDF%20final.pdf>
- The ministry of transport of the People's Republic of China. (2012, Mar 14). *Ship Carrying Dangerous Goods Safety Supervision and Administration of China*. Retrieved from Baidupedia: <http://baike.baidu.com/view/439653.htm>
- UNECE. (2013, 9 12). *UN Recommendations on the Transport of Dangerous Goods - Model Regulations*. Retrieved from UNECE-United Nations Economic Commission For Europe: http://www.unece.org/trans/danger/publi/unrec/rev13/13nature_c.html
- Yang, L. (1998). *Charter Party*. Dalian: Dalian Maritime University Press.

Yang, R. (1997). Dangerous Goods Disposal of Carrier (Volume two). *Shipper Weekly*, 41.

Yin, D. (2000). *Law of Carriage of Goods by Sea*. Beijing: The People's Court Press.

Zhou, C. (2005). Shippers' Duty of Notice and Related Liability in Shipment of Dangerous Goods by Sea. *Journal of Political Science and Law*, 32.

APPENDICES

Appendix 1: Exemptions listed in article 51 of China Maritime Code

- (1) **Fault of the Master, crew members, pilot or servant of the carrier in the navigation or management of the ship;**
- (2) Fire, unless caused by the actual fault of the carrier;
- (3) Force majeure and perils, dangers and accidents of the sea or other navigable waters;
- (4) War or armed conflict;
- (5) Act of the government or competent authorities, quarantine restrictions or seizure under legal process;
- (6) Strikes, stoppages or restraint of labor;
- (7) Saving or attempting to save life or property at sea;
- (8) Act of the shipper, owner of the goods or their agents;
- (9) Nature or inherent vice of the goods;
- (10) Inadequacy of packing or insufficiency or illegibility of marks;
- (11) Latent defect of the ship not discoverable by due diligence;
- (12) Any other causes arising without the fault of the carrier or his servant or agent.