Muhammad Masum Billah

Effects of Insurance on Maritime Liability Law

A Legal and Economic Analysis

Springer

Effects of Insurance on Maritime Liability Law

Muhammad Masum Billah

Effects of Insurance on Maritime Liability Law

A Legal and Economic Analysis

Springer

Muhammad Masum Billah
College of Law
Sultan Qaboos University
Al-Khod, Muscat
Oman

ISBN 978-3-319-03487-4 ISBN 978-3-319-03488-1 (eBook)
DOI 10.1007/978-3-319-03488-1
Springer Cham Heidelberg New York Dordrecht London

Library of Congress Control Number: 2013957905

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

The book examines how the absence of insurance in the past led to some unique maritime liability law principles such as 'general average' (i.e., losses or expenses shared by all the parties to a maritime adventure) and the limitation of ship owners' liability. In the absence of insurance, these principles served the function of insurance mostly for ship owners. As commercial marine insurance is now widely available, these principles have lost their justification and may in fact interfere with the most important goal of liability law, i.e., deterrence from negligence. The book thus recommends their abolition.

When insurance is easily available and affordable to both parties to a liability claim, the main goal of liability law should be deterrence as opposed to compensation. This is the case with maritime cargo liability claims where both cargo owners and ship owners are invariably insured. As a result, the main focus of the cargo liability law should be and, to a great extent, is deterrence. On the other hand, in the vessel-source oil pollution liability setting, pollution victims are not usually insured. Therefore, oil pollution liability law has to cater for both compensation and deterrence, the two traditional goals of liability law.

The final issue addressed in the book is whether the deterrent effect of liability law is compromised by the availability of liability insurance. Contrary to popular belief, the book argues that the presence of liability insurance is not necessarily a hindrance but can be a complementary force towards the realization of deterrent goal of liability law.

As the book is the modified version of my doctoral thesis, I am very grateful to my supervisor, Professor André Braën of University of Ottawa, Canada, and to the members of thesis defense committee, Professor Martin Davies of Tulane Law School, Professor Donald McRae, Professor Denis Boivin and Professor Jamie Benidickson of University of Ottawa, for their valuable comments and suggestions.

I express my sincere gratitude to my parents, Muhammad Mostafa Kamal and Rokeya Begum, for their unconditional love and prayers. Finally, my wife, Tahmina Anzum, and our daughters, Tanisha Billah and Taqiya Billah, are my source of love and inspiration.

Muscat, OMAN Dr. Muhammad Masum Billah

Contents

Table of Cases

Chapter 1
Introduction

In a developed society, most individuals and corporations purchase insurance against any possible liability they might incur in a host of activities they engage themselves in.[1] Ship owners are no exception in this regard. In fact, ship owners' liability insurance is one of the most extensive liability insurance in the world.[2] There is hardly any aspect of maritime liability which is not covered by the corresponding liability insurance.[3] Yet, there is little discussion on various questions related to the effect of insurance's absence or its presence on maritime liability law. What benefits insurance in general and liability insurance in particular have in our commercial activities including shipping? If insurance is a beneficial risk-management strategy, what are the other alternative risk-management measures ship owners and policymakers devised in the pre-insurance era? Should those measures continue to exist today when commercial insurance is available? What should be the goal of liability law when both liability claimants and liable parties are usually insured against their respective losses and liabilities? Does the presence of liability insurance reduce the deterrent effect of liability law? Or can we say that the presence of liability insurance actually improves deterrence? These are the questions we will attempt to answer in this book and we will do so in the context of maritime law and from the perspective of law and economics.

Few areas of liability law are as influenced as that of maritime liability law both by the absence of insurance in the past and by its widespread presence today. While the evolution of maritime liability law in its many aspects is closely connected to that of marine insurance, some aspects of maritime liability law may appear quite

[1] In 2011, Canadians paid over $5.27 billion in premium for liability insurance alone. See Insurance Bureau of Canada (2013), p. 7.

[2] Ship owners usually purchase liability insurance from their own mutual insurance companies, known as Protection and Indemnity (P&I) clubs. Thirteen of the P&I clubs jointed together to form the International Group of P&I Clubs. Through a pooling agreement among the clubs, the group can provide coverage up to US$7.5 billion per liability incident. See http://www.igpandi.org/Group+Agreements/The+Pooling+Agreement. Accessed 01 September 2013.

[3] Gilmore and Black (1975), pp. 17–18, 53.

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_1, © Springer International Publishing Switzerland 2014

unreasonable without the realization of their historical link to insurance. Two such aspects examined in the book are the limitation of ship owners' liability and 'general average'.

As apparent from the name, limitation of liability reduces ship owners' legal liability to a pre-determined limit based today on the tonnage of a ship but historically on the value of the ship after a liability-causing incident.[4] General average, on the other hand, is the sharing by ship owners and cargo owners of the losses and the expenses necessitated by their attempts to extricate a ship in distress and the cargo on it from an actual or imminent peril of the sea.[5] The origin of these two principles of maritime liability law predates commercial marine insurance. We argue in the book that the absence of commercial marine insurance was the most plausible cause of their adoption as they functioned like insurance during the pre-insurance era in reducing the burden on ship owners from the losses and/or liabilities arising from maritime transportation.

In the absence of commercial insurance, the insurance function served by these two principles of maritime law was of great social benefit because their presence reduced the fear of loss or liability in the minds of prospective ship owners and thus encouraged them to invest into shipping and maritime commerce. Today, however, marine insurance market is well-developed and has enormous capacity to cover almost any imaginable maritime loss or liability.[6] As a result, there is no need for the above two maritime principles to function as insurance. Instead of producing any social benefit, these two principles may now cause social loss by reducing the incentives for ship owners to exercise proper care and precaution in the transportation of goods and passengers.[7]

The origin of these two principles, their past justifications and their possible detrimental social effects today will be discussed in the first three chapters of the book. Chapter 2 in its first part will trace the historical need and the consequent development of these two principles together with some other alternative risk-management strategies in the pre-insurance era. The second part of the chapter will discuss the mutual influence of marine liability law and liability insurance on each other in the context of their historical development with particular emphasis on the cargo and the oil pollution liability laws. Chapters 3 and 4 will take up detailed analysis of the principles of limited liability and general average respectively.

Although marine insurance market is now well-developed, participation in the market is not similar across the wide spectrum of shipping activities. Not all the

[4] See Donovan (1979), p. 999.

[5] See *Birkley v. Presgrave*, (1801), 1 East. 220 at 228, 102 E.R. 86 at 89; Cooke and Cornah (2008), p. 1.

[6] See *infra* Sect. 3.4.3.1.

[7] The simple reason why these principles may lead to increased social loss is that they may reduce the liability of negligent ship owners. Reduced liability may in turn fail to deter such ship owners from future negligence. Chapters 2 and 3 will have detailed analysis of this point.

parties to a maritime liability dispute are equally insured against their possible losses or liabilities. Different insurance practices by the parties have influenced at least partially the design of liability laws for different activities. For example, in the context of cargo transportation it is invariably the case that both ship owners and cargo owners (i.e., potential liability claimants) are fully insured against their respective liabilities and losses.[8] On the other hand, in the case of transportation of oil via sea potential victims of oil pollution damage are unlikely to be insured against their losses.[9] As a result, the need for compensation is stronger in the oil pollution liability law than in the cargo liability regime. The difference in the need for compensation may provide the partial explanation why liability for oil pollution is strict,[10] while negligence is the basis for maritime cargo liability laws.[11]

Despite the above difference in the need for compensation, the importance of liability law to deter ship owners from negligence is equally present both in the oil pollution and in the cargo liability laws. Thus, the main difference in the design of these two liability regimes is that while the oil pollution liability law has to cater both for **deterrence** and **compensation**,[12] the sole purpose of the cargo liability law should be **deterrence**. This is because both parties to a cargo liability dispute will already have insurance to cover their respective losses and liabilities. In Chap. 5, we will examine the success of the cargo liability regime in achieving its sole goal of deterrence. It will be shown that the cargo liability laws are generally aligned with its goal of deterrence. However, the presence of limited liability and general average in cargo liability laws reduces the deterrent effect of liability law.[13] Also, the exoneration of ship owners from liability for cargo damage caused either by negligent fire or the negligent navigation and management of ships by crew

[8] See Gilmore and Black (1975), p. 17. For empirical evidence on insurance against cargo loss or liability, see *infra* Sect. 5.5.

[9] See International Maritime Organization's (IMO) legal document, LEG/CONF.5/C.1/SR.8 (5 Nov. 1976); reproduced in IMO (1983), p. 266. However, sometimes the only claimant would be the government of a state which incurs expenses for cleanup after an incident of oil pollution.

[10] See article III.1 of International Convention on Civil Liability for Oil Pollution Damage, 1969, 973 U.N.T.S.3, (1970) 9 I.L.M. 45, as amended by its 1992 Protocol, LEG/CONF.9/15 [hereinafter the CLC]. Another reason for this difference is that the victims of oil pollution are third parties and thus cannot negotiate mutually satisfactory arrangements with tanker owners before pollution incidents, while cargo owners as liability claimants have contractual relationship with ship owners and can decide their respective share of loss or liability beforehand.

[11] See articles III and IV.1 of the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, Aug. 25, 1924, 51 Stat. 233, 120 L.N.T.S. 155 [hereinafter the *Hague Rules*]; and its 1968 Protocol, 2 U.N. Register of Texts ch. 2, at 180 [hereinafter together the *Hague-Visby Rules*]; article 5.1 of the United Nations Convention on the Carriage of Goods by Sea, Hamburg, Mar. 31, 1978, U.N. Doc. A/Conf. 89/5, (1978) 17 I.L.M. 608 [hereinafter the *Hamburg Rules*].

[12] Compensation and deterrence are the two main goals of liability law under traditional analysis of liability law. See Brown (1978–1979), p. 111.

[13] See articles IV.5(a) and V of the *Hague-Visby Rules*; articles 6.1(a) and 24 of the *Hamburg Rules*.

members is an obstacle to the achievement of optimal deterrence under the *Hague-Visby Rules*,[14] the most-commonly used cargo liability regime.

The discussion in Chap. 6 will be focused on the success of the oil pollution liability regime in providing both adequate compensation and proper deterrence through its various insurance and non-insurance mechanisms. Although adequate compensation of the oil pollution victims is the declared goal of oil pollution liability regime,[15] it also creates strong deterrence in ship owners from negligent navigation by imposing higher liability on them for oil pollution, by requiring compulsory insurance up to the liability limit, and, finally, by allowing direct action against insurers by victims. The proof of strong deterrence in oil pollution liability law is evidenced by the dramatic reduction of oil pollution incidents throughout the world.[16] It is worth mentioning that in addition to liability law there are also other factors which equally contributed to the reduction of oil pollution incidents. These factors will be briefly discussed in the chapter.

While deterrence from negligence is the common goal of both the cargo and the oil pollution liability laws, the purchase of insurance by a potentially liable party may be thought to reduce the deterrent effect of liability law. This is because people with liability insurance may tend to be less afraid and, consequently, less careful against the possible effect of their negligent acts or omissions especially if their insurers have no means to check this tendency.[17] Insurers, however, have various means to control this tendency and to keep their insured motivated towards proper care. These means include premium rate variance, deductibles, policy limits and policy exceptions. Therefore, we will maintain in Chap. 7 that the presence of liability insurance does *not* necessarily lead to the reduction of deterrent effect of liability law.[18] In fact, we would attempt to establish that the presence of liability insurance actually leads to better care than the care induced by the presence of liability law alone (i.e., without liability insurance).

We will analyze the connection between maritime liability law and marine insurance from the perspective of **law and economics**. To avoid repetition and to have a smoother analysis in later chapters, some of the frequently discussed concepts from **economic analysis of law** will be briefly discussed here.

Like any legal analysis, economic analysis of law aims at finding appropriate legal rules and policies which would maximize social welfare or utility.[19] However, a characteristic element of an economic analysis is that it assigns tentative

[14] See article IV.2(a) and (b).

[15] See the preamble to the CLC which reads, "The State Parties to the present Convention. . .. convinced of the need to ensure that *adequate compensation* is available. . .." (emphasis added).

[16] See *infra* Sect. 6.5.

[17] Tendency of an insured to lower the precautionary measures in the presence of insurance is a well-studied concept and is termed as 'moral hazard'. See Abraham (1986), p. 14. See Arrow (1974), pp. 961–962; Pauly (1968), p. 535.

[18] For a somewhat similar observation, see James (1948), p. 549.

[19] Shavell (2004), p. 4.

numerical value for every action needed to implement a legal rule and for every consequence flowing from such implementation. In other words, it uses a numeric cost-benefit equation to determine the desirability of legal rules. While the tentative values are mostly assumptions,[20] they are based on common sense. Similar assumptions are also used regularly in other legal analyses, albeit without the use of any numbers. For example, under a traditional legal analysis, liability for vessel-source oil pollution may be justified on the ground that liability reduces the number of oil pollution incidents. Implied in this analysis are the assumptions that most incidents of oil pollution are preventable and that the cost of oil pollution to society is more than the cost ship owners would bear to prevent possible pollution incidents. Under an economic analysis, the same conclusion may be reached by assuming that the damage from an oil pollution incident is $1,000 and the cost of prevention is only $500.[21] Therefore, prevention or taking care is **cost-efficient** and imposition of liability to motivate ship owners to take such care is justified. Not taking care in such situations amounts to negligence.

In determining **negligence**, economic analysis uses the concept of **expected loss or liability**.[22] Expected loss or liability is the product of **magnitude** of liability multiplied by its **probability**. An act of negligence does not always give rise to a loss or liability. For example, the failure to install smoke detector may cause $1,000 worth of loss only in one out of ten incidents of fire i.e., in 10 % of the time. Even though the actual loss, when incurred, is $1,000, the expected loss is only $100 [the magnitude of loss ($1,000) multiplied by the probability of loss (10 %)]. Under an economic analysis, negligence is the failure to take care when the cost of care is less than the expected loss. If the cost to install a smoke detector is less than $100, not installing it would amount to negligence. This definition of negligence was taken from the decision of Judge Learned Hand in *U. S. v. Carroll Towing Co*.[23] Judge Hand, coincidentally an admiralty judge, held that a person would be negligent if B is less than PL where B stands for the cost of precaution, P for the probability and L for the magnitude of loss. This is known as 'Hand Formula' in the economic analysis of law.

It is noteworthy to mention here an important distinction between **expected loss** and **expected liability**. They are not always the same amount. Despite the **expected loss** of $100 due to the absence of smoke detector in the above example, a negligent homeowner's **expected liability** may be less than $100. Only in a sure case of liability following a loss the expected liability and the expected loss will be the same amount. For example, if a homeowner is held liable in one out of two actual fire losses caused by the absence of smoke detector, the probability of his or her

[20] Some figures are also based on statistical data and empirical evidence.

[21] It does not really matter whether we use the figure $1,000 or 100,000 for the loss and $500 or 50,000 for the cost of care. The purpose of using these figures is to show more clearly that the cost of care is less than the loss.

[22] See Posner (1972), pp. 32–33.

[23] 159 F.2d 169 at 173 (2d Cir. 1947); see Posner (2003), p. 168.

being liable is only 50 % and the **expected liability** would be only $50 ($100 × 50 % or $100/2) for the failure to install the smoke detector. Expected liability which is lower than expected loss may reduce the deterrent effect of liability law. Although the installation of a smoke detector may cost less, say $90, than the **expected loss**, a rational homeowner[24] may not install it because his or her **expected liability** is only $50.

In the above example, the expected liability was less than the expected loss due to the reduction in the **probability** of being held liable. Reduction in the **magnitude** of liability would also lower the expected liability. For example, if due to the limitation of liability (i.e., a cap on maximum liability) a homeowner has to pay only $800 instead of $1,000 in damages for not installing a smoke detector, the homeowner's expected liability would be reduced further to $40 [($800 × 10 %) × 50 %]. With further reduction in the expected liability, the homeowner will have even less incentives to install the smoke detector at a cost of $90. In our discussion on the limitation of ship owners' liability and general average we will show that the expected liability of negligent ship owners is less their expected loss due to the reduction in the **magnitude** of their liability.

The concept of expected loss or liability is simple but crucial for the proper understanding of economic analysis of any liability law. The concept will be repeated throughout the book. The importance of this concept lies in the fact that most of our actions are based on a rough calculation of the costs of and benefits from those actions. While the costs of a precautionary measure such as the installation of a smoke detector are certain in each case, the benefits of the precaution in preventing the fire damage or in not being held liable for fire damage are probabilistic. Generally, people would be willing to incur the sure cost of care only when their expected liability is more than their cost for taking care. As the expected liability ($50 or 40) in our example is less than the cost of care ($90), a potentially liable homeowner may not exercise care.

One way to make the expected liability more than the cost of care is to multiply the amount of damage by the inverse of probability.[25] As the probability in our example was 50 % or 1/2 of the time, its inverse is 2. In other words, when caught, a liable party must pay $2,000 [i.e., the actual damage of $1,000 multiplied by the inverse (2) of probability] in order for the liable party to be motivated to spend $90 on the installation of the smoke detector. By ensuring that the expected liability remains higher than the cost of care, liability law can deter potentially liable parties from negligence.

For most individuals the above measure to increase the expected liability in order to have stronger deterrence may not be necessary because they are **risk averse**. The concept of **risk aversion** is a frequently-used concept in the economic

[24] Under economic analysis, people are assumed to be rational profit-maximizing individuals. See Shavell (2004), pp. 1–2.

[25] Shavell (2004), p. 244.

analysis of insurance.[26] Risk aversion is the tendency of people to fear more a large loss even with low probability than a small loss with high probability even though the expected loss in both situations is exactly the same. For example, a loss of cargo worth $1,000 with 10 % probability may not be as big a concern to the cargo owner as the loss of $10,000 worth of goods with 1 % probability even though in both cases the expected loss is $100 [($1,000 × 10 %) or ($10,000 × 1 %)]. The fear would be even greater if the magnitude of loss is $100,000 even though, say, the odds of such loss are only one-tenth of 1 % (i.e., 0.1 %). Here again the expected loss is only $100. **Risk-neutrality** is the opposite concept of risk aversion.[27] To a risk-neutral party, all of the above losses will be of equal concern.

Risk aversion is a source of social disutility as it either causes risk-averse people to take excessive care or discourages them from engaging in socially-beneficial activities.[28] For instance, as the expected loss in all the above examples is only $100, to take precaution against such loss at a cost more than $100 would be excessive precaution. Yet, risk-averse people will tend to spend more than $100 to avoid 1 % chance of losing $10,000 or to prevent 0.1 % risk of suffering $100,000 loss. Alternatively, they may decide not to engage in such an activity at all even though their expected gain might be higher than their expected loss if they engage in the activity. For example, cargo owners may decide not take their goods via ships to distant ports despite a sure profit of $200 because of their fear of losing $10,000 even though the odds of such loss are only 1 %. Both the cost of excessive care and the forgone profit from not engaging in a profitable activity are social loss.

Insurance is the best solution to the problem of risk aversion. Utilizing the available data on loss history, insurance companies can roughly determine the expected losses from an activity in the future. By charging a premium roughly equivalent to the expected losses, insurance removes exaggerated fear from the mind of risk-averse insured and thus facilitates investment into risky but socially beneficial activities such as shipping and other businesses. In the pre-insurance era, limitation of liability and general average served the function of insurance to a limited extent by transferring part of loss or liability from one party to another in the marine transportation contracts.

Liability insurance, however, may be thought to dilute the **deterrent** effect of liability law. Before we discuss the effect of liability insurance on liability law, we will briefly discuss the goal/s of liability law. **Deterrence** from negligence is the primary goal of liability law under the economic analysis of law.[29] There is no societal gain in imposing liability on ship owners or anyone else instead of letting losses remain where they fall if the fear of liability or its actual imposition does not deter ship owners from negligent navigation and consequently does not lead to the reduction of maritime losses in the future.

---

[26] Abraham (1986), pp. 10–11; Posner (2003), pp. 10–11.

[27] Shavell (2004), p. 178.

[28] Shavell (1987), pp. 11–12.

[29] See Shavell (2004), pp. 267–269, 635–638. See also Shavell (1987), p. 208.

The imposition of liability in the absence of deterrence may only shift a loss from one party to another and will not reduce social loss. Although such shift may serve the traditional goal of liability i.e., **compensation**, the relative importance of this goal has significantly decreased today as people (both liable parties and liability claimants) can easily buy insurance.[30] This is not to say that compensation has no role to play in the liability law today. Compensation can be a necessary *means* to achieve the deterrence *goal* of liability. Compensation, however, should not be the primary goal of liability law. In other words, in designing and implementing liability rules both policymakers and courts should focus more on the effects of liability rules on the behavior of a potentially liable party than on their effect on restoring liability claimants to their pre-accident positions.[31]

Of course, in most cases the **compensation** of liability claimants and the **deterrence** of liable parties will occur simultaneously. For instance, when ship owners are held liable for the cargo losses arising from their negligent handling of cargo without the benefit of limitation of liability,[32] cargo owners receive their full compensation and at the same time ship owners are also deterred from similar conducts in the future. There can, however, be cases where full compensation would occur without proper deterrence when the compensation or part of it comes from a party other than the liable party. For example, in liability law for vessel-source oil pollution claimants receive compensation from various oil pollution funds when the amount of losses exceeds the liability limit of ship owners.[33] In such cases, it is possible that victims receive full compensation for oil pollution damage without ship owners being properly deterred from negligent handling of cargo.

Conversely, it is also not always true that imposing full liability creates deterrence. If some losses are inevitable in the sense that no amount of precaution could have prevented them, imposing liability for such losses would not create any deterrence. An example of this would be the imposition of liability on ship owner for cargo loss arising from an unpredictable storm on the sea.

---

[30] Shavell (2004), p. 266.

[31] Traditionally, the goal of liability both under torts and contract laws has been to restore the claimants to their pre-incident level as far as money can do. It is expressed retrospectively in tort (to put the victim back where he would have been had the tort not occurred) and prospectively in contract (to put the promisee in a position where he would have been had the contract been performed). See Rose (2004), p. 487.

[32] Although it would be very difficult to deprive ship owners of the benefit of limited liability under the present law, a court may be lenient in construing the relevant provision of the law i.e., Article 4 of the Convention on Limitation of Liability for Maritime Claims, 1976, (1977) 16 I.L.M. 606 [hereinafter LLMC 1976]. "A person shall not be entitled to limit his liability if it is proved that the loss resulted from *his personal act or omission*, committed *with the intent* to cause such loss, or *recklessly and with knowledge* that such loss would probably result." (emphasis added).

[33] See the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, 16 I.L.M 621 (1972), as amended by 1992 Protocol, LEG/CONF.9/16, and 2003 Protocol, LEG/CONF.14/20 [hereinafter the Fund Convention].

Finally, the availability of liability insurance may be thought to reduce the deterrent effect of liability. An insured may not use proper precaution against loss or liability simply because such loss or liability would be covered by insurance. This tendency is known as **moral hazard** in insurance literature. As mentioned earlier, there are various means such as variation of premium, deductibles, policy limits and exceptions that insurers can use to check this tendency of the insured. In the final chapter of the book it would be proven that because of insurers' superior knowledge about the causes of loss and about the preventive measures, insurers can induce their insured through the above means to take proper care, if not better care, than the level of care in the absence of liability insurance.

To recapitulate, using the economic analysis of law the book would maintain that insurance is the most valuable tool against risk aversion. The availability of insurance removes the fear of loss from the minds of investors and thus facilitates the growth of shipping and commercial activities. With this in mind, the importance of both limitation of liability and general average as mechanisms to provide some form of insurance could be appreciated for a pre-insurance era or when insurance market was not well-developed. With well-established insurance market today, however, these two aspects of maritime liability law have lost their importance and justifications. In addition, they may even reduce the deterrent effect of liability law by reducing the liability of a negligent ship owner. Deterrence should be the only goal of liability law especially when both liable parties and liability claimants have access to market insurance. Although the deterrent effect of liability law may seem to be affected by the presence of liability insurance, insurers have various insurance mechanisms to keep the insured motivated towards proper care. In fact, the presence of liability insurance may lead to even stronger deterrence than would be the case otherwise.

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven

Arrow KJ (1974) Essays in the theory of risk-bearing. North-Holland Publishing Company, Amsterdam

Brown C (1978–1979) Deterrence and accident compensation schemes. Univ West Ont Law Rev 17:111

Cooke JHS, Cornah RR (eds) (2008) Lowndes and Rudolf: the law of general average and the York–Antwerp rules, 13th edn. Sweet & Maxwell, London

Donovan J (1979) The origins and development of limitation of shipowners' liability. Tulane Law Rev 53:999

Gilmore G, Black C Jr (1975) The law of admiralty, 2dth edn. Foundation Press Inc., New York

IMO (1983) Official records of the international conference on the limitation of liability for maritime claims, 1976. IMO, London

Insurance Bureau of Canada (IBC) (2013) Facts of the property & casualty insurance in Canada: 2013. IBC, Canada. http://www.ibc.ca/en/Need_More_Info/Facts_Book/documents/IBC-Facts-2013.pdf. Accessed 30 Aug 2013

James F (1948) Accident liability reconsidered: the impact of liability insurance. Yale Law J 57:549
Pauly M (1968) The economics of moral hazard: comment. Am Econ Rev 58:531
Posner RA (1972) A theory of negligence. J Legal Stud 1:29
Posner RA (2003) Economic analysis of law, 6th edn. Aspen Publishers, New York
Rose FD (2004) Marine insurance: law and practice. LLP, London
Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge
Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge

Chapter 2
Lack of Insurance and Its Effect on Maritime Liability Law: A Historical Evaluation

2.1 Introduction

Marine insurance, though described as the "elder brother to all other insurance,"[1] did not develop into its modern form until the fourteenth century.[2] However, societies have managed risks in various ways with or without insurance. Predictably, in the absence of insurance people including ship owners and merchants had to rely more on non-insurance risk management strategies. Such reliance may be considered inefficient today with the widely-available insurance. In other words, while some of the non-insurance risk management strategies or the extent of their use were justified in the absence of insurance, same strategies may now cause inefficiency and social waste.

Even when marine property insurance (i.e., hull and cargo insurance) became widely available during the industrial revolution, the market for marine liability insurance was not fully developed until the middle of nineteenth century. This probably had an impact on the development of various areas of maritime liability law. Although it is hard to say whether the inadequacy of liability insurance was the cause or the effect of the underdevelopment of liability law, it is certain that both of these conditions existed at the same time. A modern example of the underdevelopment of marine liability law is the absence of any specific liability law for the oil pollution from ships until 1969.

The chapter in its Sect. 2.2 will discuss some of the ancient maritime risk-management strategies as well as their justifications both in the past and now, if any.

[1] Mitchell (1970), p. 9. See the decision of Chouinard J. in *Zavarovalna Skupnost Triglav* (*Insurance Community Triglav Ltd.*) *v. Terrasses Jewellers Inc.*, [1983] 1 S.C.R. 283 at 293, 297–298 (SCC); Strathy and Moore (2003), p. 5.

[2] Vance (1908), pp. 6–7. There are debates about when and who first practiced the modern marine insurance. Most writers consider Lombards from Italy as the pioneer of modern marine insurance sometime between the twelve and the fourteenth centuries. Bischoff (1836) reproduced in Jenkins and Yoneyama (eds) (2000), pp. 319–320. Holt (1898), p. 4.

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_2, © Springer International Publishing Switzerland 2014

Section 2.3 will examine the probable effect of the lack of liability insurance on the development of maritime liability law or vice versa.

2.2 Alternative Risk Management Strategies in the Absence of Insurance

Marine insurance as we know today started to evolve only from the fourteenth century.[3] Prior to that time, alternative risk-management strategies existed to fill the vacuum of modern insurance. Alternative risk management strategies, which even exist today alongside insurance, include personal saving, diversification, forward contracts, and safety precautions.[4] In short, anything we do now to avoid a future risk is a risk management strategy. Broadly speaking, all forms of risk managements may be termed as different types of insurance.[5] However, they are usually considered as alternatives to insurance rather than its types.[6] In this book we also use them as alternatives to insurance.[7]

All forms of risk management strategies can be grouped together into four types: risk-avoidance, risk-control, risk-retention and risk-transfer.[8] Although insurance is also a form of risk-transfer, we will confine the discussion on risk-transfer to non-insurance risk-transfer strategies as the purpose of the discussion in this part is to show the extent of the use of alternatives risk management strategies when market insurance did not exist.

2.2.1 Risk-Avoidance

The most effective, though not necessarily the most cost-efficient, strategy to manage risk is the avoidance of risk by not engaging at all in activities with risks.[9] Some people may avoid the risk of loss or liability simply by not engaging in certain activities. For example, many pharmaceutical companies stopped

[3] Vance (1908), pp. 6–7.

[4] Abraham (1986), pp. 2, 67.

[5] This broad definition of insurance will, however, be used in later chapters in order to show that the lack of market insurance precipitates the need for 'insurance' in non-market forms such as general average, limitation of liability and various compensation funds for marine pollution.

[6] See generally Selmer (1958), pp. 25–26.

[7] In discussing the conflicting views among historians as to the existence of insurance in the ancient societies such as Phoenicians, Rhodians and Romans, W.R. Vance attributed the source of this conflict to these broader and narrower definitions of insurance. See Vance (1908), pp. 2–3.

[8] See generally Rejda (2008), pp. 12–14.

[9] See generally Rejda (2008), pp. 12–14.

producing certain vaccines due to the fear of liability lawsuits.[10] However, this strategy was more prevalent in the past when market insurance was not available. The prevalence of this strategy in the pre-insurance era can be inferred from the simple fact that the volume of shipping and other business activities was very small in the past. If a person does not engage in shipping activities, he would not face any risk of loss or liability arising from shipping. The reason this strategy would be inefficient is that the forgone profits due to non-participation may be more than the expected loss or liability.

2.2.2 Risk-Control

On the other hand, people who engage in shipping and other activities with risk would try to control the risk of loss or liability through various precautionary measures. Reduction of risks by taking precautions is as important today as it was during the pre-insurance era. However, such precautions were probably excessive in the absence of insurance because people in general are more fearful of risk of loss and liability when they do not have insurance.[11]

Excessive precautions are economically wasteful as they entail more costs than benefits. An example of excessive precaution during the pre-insurance era can be seen in certain practices of ancient Chinese merchants. The Chinese merchants on the Yangtze River used to send their cargoes on more than one vessel in order to reduce the risk of total loss of their merchandise.[12] The precautionary measure here was excessive. In the absence of insurance, this could be justified. With market insurance available, however, such precautionary measure would be very inefficient as insuring such goods may cost less than the additional freight charge for using more than one ship to carry the same goods. In addition, if there is actual loss without insurance, the merchant in our example would personally bear the loss. With insurance, the loss would be transferred to the insurer, who would ultimately spread the loss over a large pool of insured people.

Risk-control through proper precautions may be the best protection against risks when such precautions can *completely eliminate* the risks.[13] In fact, if all the possible losses in the future could be prevented by precaution, there would be no need for insurance.[14] For this to happen, however, we would need to accurately

[10] See generally Rejda (2008) at pp. 11–12.

[11] Excessive fear of uncertain risks is a phenomenon termed as 'risk-aversion' in insurance literature. The concept of 'risk-aversion' will be further elaborated in the subsequent chapters. See Pauly (1968), p. 532; Shavell (1987), pp. 186–187; Shavell (2004), p. 258.

[12] This practice existed as far back as 3,000 BC. See Dover (1975), p. 3.

[13] In effect, this strategy is similar to the first strategy of risk-management i.e., avoidance of risk, the only difference being the elimination of risk by precaution in the former and the elimination of risk by complete avoidance of the activity in the latter.

[14] See generally Calabresi (1970), pp. 48–49.

predict the exact amount (i.e., both the magnitude and the probability) of such losses and the cost-efficient precautionary measures to eliminate those losses. In reality, this is not possible because there would always be some uncertainty about the magnitude and the probability of loss/liability. In addition, as no precautionary measures or at least no cost-efficient measures could prevent some of the serious and unpredictable losses, risk-control alone cannot be the complete risk management strategy.

2.2.3 Risk-Retention

Since there will remain some risks of loss or liability despite all the necessary risk-control measures, merchants and ship owners would either *transfer* those risks to others or to *retain* the risks by themselves. People may decide to retain some risks even in the presence of insurance. But in the absence of insurance, retained risks formed the substantial part of un-prevented or unpreventable risks because the scope of risk-transfer through non-insurance mechanisms is very limited.

In the absence of insurance people retained risks mainly due to their lack of choice. With the presence of insurance today, many individuals and corporations deliberately retain part of the risk to reduce their insurance costs (i.e., premium). Sometimes insurance policies also leave part of the covered risks uninsured (e.g., deductibles and policy limits) or do not cover certain risks at all (i.e., policy exceptions) in order to motivate the policy holders to take proper care.[15] Most insurance policies today contain all or some of these features of risk retention.

2.2.4 Risk-Transfer

Un-prevented or unpreventable risks that are not retained would be transferred to others. Such risks may be transferred either through insurance contracts or through some non-insurance arrangements. Obviously, non-insurance arrangements were the only means to transfer those risks in the pre-insurance era. There were many such arrangements in the context of maritime transportation. Discussed below are some of the well-known non-insurance transfer mechanisms.

2.2.4.1 Transfer to Governments

Contractual arrangements to transfer marine and war risks from ship owners to their respective governments existed in ancient Rome and other maritime nations.[16] Such

[15] See *infra* Sect. 7.3.3.

[16] Selmer (1958), pp. 25–27; Trenerry (1926), pp. 109, 119.

contracts were made when privately-owned ships had transported arms and foods for soldiers or carried public treasures and money from one place to another. This practice could be traced as early as 215 BC when the Roman government agreed to compensate for the loss in the shipment of military supplies either due to the attacks of enemies or due to the perils of the sea.[17] Similar practices existed in ancient Italy and Spain where the receiving states used to cover all the risks in the transportation of arms and victuals for the troops or in the shipment of public money and treasures.[18]

While the absence of market insurance in the past made the government protection necessary, market insurance today obviated the need for such protection. However, even today situations may still arise when market failure to provide insurance for a particular product or at a particular time brings the government into the scene again. Market failure may occur either due to the unwillingness or the incapacity of market insurers to bear very large and/or unpredictable risks such as losses from devastating natural or man-made disasters. For example, during the both World Wars governments in many maritime nations provided hull and cargo insurance against the war risks either independently or alongside the market insurers.[19]

2.2.4.2 Transfer to Financiers (i.e., *Bottomry* and *Respondentia*)

Another form of risk-transfer in the context of maritime law was the practice of *bottomry* or *respondentia*.[20] Under this practice, ship owners and merchant mariners transferred maritime risks to their financiers. In *bottomry*, ship owners borrowed money at an agreed rate of interest to finance their adventures on the security of the bottom (hull) of the ships.[21] In *respondentia* similar arrangements were made between cargo owners and their lenders on the security of the cargo.[22] The borrowing ship owners and cargo owners were obliged to repay their loan with interests *only after* the safe arrival of their vessels and the cargo respectively. The loan was irrecoverable if the vessels or the cargo, as the case may be, were lost before arrival.

---

[17] Dover (1975), p. 2.

[18] Dover (1975) at p. 3; Vance (1908), pp. 1–2, 5.

[19] The British government, for instance, made an agreement with the market insurers during the World Wars I and II to reinsure the hull risks and to offer primary cargo insurance alongside the market insurance. See Bennett (2006), pp. 12–14.

[20] In *Zavarovalna Skupnost Triglav* (*Insurance Community Triglav Ltd.*) *v. Terrasses Jewellers Inc.*, 54 N.R. 321 at 332, [1983] 1 S.C.R. 283 at 293 (S.C.C.), Chouinard, J. considered bottomry and respondentia as the origin and the earliest form of marine insurance.

[21] Lay (1925), p. 4.

[22] The contracts of bottomry and respondentia were evidenced on bonds, called bottomry and respondentia bonds. Gold et al. (2003), p. 279.

The practice of *bottomry* and *respondentia* was insurance in reverse. Merchants received the protection against potential risks but had to pay the premium in the form of additional interests only if the insured risks did not materialize.[23] The interest rates charged on the loans under *bottomry* and *respondentia* were higher than the interest rates for comparable loans. This is because the interest on the former reflected both the regular *interest* for loan as well as the *premium* for providing some protection (in the form of forgiving the debt) against the risk of losing the vessel or cargo.[24] The provision of some sort of insurance in addition to loan in the practice of *bottomry* and *respondentia* was probably the reason that the edict of Emperor Justinian in 533 AD allowed 12 % as a maximum interest rate for *bottomry*, while it was only 6 % for other loans.[25]

The practice of *bottomry* and *respondentia* probably began in 2250 BC in Babylon as a similar concept was mentioned in the *Code of Hammurabi*.[26] Similar instances of financing for trading expeditions to India could be seen in 600 BC.[27] The Rhodians and the Romans practised it. The Rhodians' code contained the rules on bottomry.[28] The Romans borrowed these rules from the Rhodians' code and incorporated them into their law. 'The Law of Oleron' in turn adopted these rules from the Roman law.[29] Its first recorded practice in England was in 1593 AD.[30]

They *Bottomry* and *respondentia* are hardly used today.[31] This makes economic sense as the marine hull insurance and cargo insurance provide much better protection against the risks of damage to or loss of ships and cargo respectively than the protection under *bottomry* and *respondentia*. Similarly, the financiers who provided these types of loan have now more attractive investment opportunities than betting on the safe arrival of ships and cargo as was the case with *bottomry* and *respondentia*.

[23] Lay (1925), p. 4.

[24] Lay (1925) at pp. 4–5; Vance (1908), p. 6.

[25] Martin (1876), p. 3.

[26] "The merchant advanced goods to the trader, who handed him in return a sealed memorandum or inventory containing the value, etc., of the goods on the understanding that the security and the rate of interest payable were to be at fixed terms, but that in the event of his being robbed on the journey, through no negligence or connivance on his part, on making a solemn declaration to that effect he should be freed from the debt – both capital borrowed and interest. This arrangement is given legal force in the Code of Hammurabi (2250 B.C.);" cited in Dover (1975), p. 5.

[27] Dover (1975) at p. 5.

[28] Bischoff (1836), pp. 311–312.

[29] Bischoff (1836), pp. 311–312.

[30] Dover (1975), p. 5.

[31] Gold et al. (2003), p. 279.

2.2.4.3 Transfer to Co-adventurers (i.e., General Average)

'General average' is another form of risk-transfer strategy necessitated by the absence of insurance in the past.[32] Under this principle, the parties to a maritime adventure share the risk of losses arising from the perils of the sea in proportionate to their respective saved interests in the adventure. It is comparable to mutual insurance as the losses in general average situation are shared by all the parties to an adventure.[33] These parties are almost invariably ship owners and cargo owners.

Like *bottomry* and *respondentia*, general average has also its origin in the ancient maritime nations. It existed in the maritime city of Levant in Rhodes from 916 to 700 BC.[34] The Rhodian Law explained the principle, "Let that which has been jettisoned on behalf of all be restored by the contribution of all."[35] From Rhodian law, it was adopted in the Digest of Justinian.[36] Later maritime codes copied the principle from the Justinian Digest with some modifications. Its first recorded incident in England was in 1285 AD.[37]

Like other pre-insurance risk management strategies, general average reduced the risk of loss or liability to some extent by spreading the loss over all the parties to a marine venture. The reduction of risk probably encouraged more investment into shipping. As mentioned earlier, with the presence of hull and cargo insurance today the utility and justifications of these ancient risk management devices have been lost. Yet, unlike some of the other ancient practices, general average is still practiced today.

We will take up detailed discussion in Chap. 4 on its supposed justifications and its negative effects on proper care and transportation cost. It suffices here to mention that the presence of general average today encourages some ship owners to maintain their ships with less than proper care because they do not face the full consequences of their negligence in some general average cases. This is because part of the loss may be transferred from a negligent ship owner to innocent cargo owners.

2.2.4.4 Transfer to Liability Claimant (i.e., Limitation of Liability)

Limitation of liability is another form of partial risk transfer strategy from ship owners to cargo owners, which also has its origin in the pre-insurance era. The risk of liability for cargo loss or for personal injury claims following a shipping accident

[32] Courts and commentators usually equate general average with insurance in their discussion on the origin of insurance. For example, see Strathy and Moore (2003), p. 5; Tetley (2008), p. 1751.

[33] Lay (1925), p. 3.

[34] Dover (1975), p. 6.

[35] Cited Dover (1975) at p. 6.

[36] Gilmore and Black (1975), pp. 3–4. Selmer (1958), p. 19.

[37] Gilmore and Black (1975), p. 6.

might be quite large and daunting without any liability insurance. In the pre-insurance era, it was thus naturally thought fair and desirable that the liability of ship owners for both personal injury and death and for cargo loss should be limited to the value of the ship after the incident. This was the law until the adoption of international conventions[38] on limitation of ship owners' liability. So, if a ship was totally lost and nothing could be salvaged out of it, ship owners did not bear any liability.

Today, however, the determination of liability does not depend on the actual value of the ship after an incident but on the basis of its total tonnage.[39] The USA is the only exception where the limit of liability for property damage is still determined on the basis of the actual post-accident value of the ship and its pending freight. However, in the USA the limit could be easily broken if a ship owner is found guilty of actual fault or privity.[40]

There is some uncertainty about the origin of this principle in maritime law,[41] although Justice Oliver Holmes compared it to the Roman law doctrine of *noxio deditio*. Under this doctrine, the liability for an injury or loss is directed to the offending thing instead of its owner regardless of whether the offending thing was an object, animal or human being.[42] If we consider this doctrine as the source of the principle limited liability, then it also has its origin in the ancient Roman law. However, its earliest extant evidence can be found in the Amalphitan Table of the eleventh century, a commercial code of Italy (Amalphia).[43] By the sixteenth and seventeenth centuries the doctrine became part of the most continental maritime codes and its formal recognition under English law was through the enactment of the *Responsibility of Shipowners Act* in 1733.[44]

Like many other risk-transfer strategies in the pre-insurance era, limitation of liability provided some protection to risk-averse ship owners by transferring part of

[38] There are three such conventions: (1) International Convention for the Unification of Certain Rules relating to the Limitation of Liability of the Owners of Sea-going Vessels, 1924; League of Nations Treaty Series No. 2763, Vol. CXX, p. 125; (2) and Convention on the Limitation of Liability of Owners of Sea Going Ships, 10 October 1957, 52 U.K.T.S. 355 (1968) and (3) Convention on Limitation of Liability for Maritime Claims, 1976, (1977) 16 I.L.M. 606, as amended by 1996 Protocol, LEG/CONF.10/DC.2.

[39] This change of valuation from the actual value of ships to an amount based on their total tonnage is justified because ship owners now do not need and in fact do not pay liability from the value of their ships but regularly pay from their liability insurance. The presence of liability insurance makes not only the old-valuation unnecessary but also the very principle of limited liability for which we need a valuation method. Yet, while the valuation method has changed in response to this insurance reality, limitation of liability continues to exist in an implicit denial of this fact.

[40] 46 U.S.C.A. §§181–189.

[41] Donovan (1979), p. 1000.

[42] Holmes (1949), pp. 6–13.

[43] Donovan (1979), p. 1001.

[44] 7 Geo. 2, c.15 (1734). See Donovan (1979), pp. 1002–1007.

the liability risk from them to the liability claimants.[45] However, unlike some of the other pre-insurance risk management strategies, the principle of limited liability still survives in all areas of maritime liability law. It will be argued in the next chapter that there is no justification for its survival in maritime liability law today because there is a well-established market for marine liability insurance and ship owners get much better protection through liability insurance than through limitation of liability. In addition, it may affect the very purpose of liability (i.e., deterrence from negligence).

2.3 Lack of Insurance and Under-Development of Liability Law

It is hard to say whether the lack of commercial liability insurance was the cause or the effect of under-developed maritime liability law in the past. Both maritime liability law and marine liability insurance were limited in their scope until the middle of the nineteenth century.[46] We may attribute this state of affairs to one of three possible causes. First, the lack of liability insurance in the past was the cause of the limited scope of maritime liability law. Second and conversely, the narrow scope of maritime liability law made it less attractive for insurers to offer liability insurance than to offer property insurance (i.e., hull and cargo insurance). Third, under-development of each may have been both a partial cause and effect on the underdevelopment of the other.[47]

Logically, there would be no need for liability insurance if no liability is imposed for a particular loss or damage. For example, no separate liability regime for oil pollution existed until 1969. As a result, there was no separate insurance coverage for oil pollution liability. On the other hand, it is also plausible to say that marine insurance market was either unwilling or unable to provide insurance coverage for oil pollution liability. This might have been at least the partial reason for non-existence of separate oil pollution liability law in the past. This assumption is based on the fact that ship owners and the organisations representing them regularly use the lack of insurance market's capacity as an argument against any attempt to increase either the amount or the scope of maritime liability.[48]

---

[45] It is noteworthy here that while general average was originally designed to protect *both* ship owners and cargo owners through spreading the loss, limitation of liability was mainly designed as a protection for ship owners *alone*. However, they both now invariably serve the interest of ship owners.

[46] Reynardson (1969), p. 464.

[47] This may be partially explained by showing how the theory of supply and demand works in physical goods. Increasing demand for certain goods may bring more supply of the goods in the market. Alternatively, abundant supply may lower the price and thus increase the demand. Similarly, increasing liability law may create a market for liability insurance and an improved liability insurance market may in turn increase the scope of liability law.

[48] However, the validity of ship owners' argument in this regard may be questioned. See *infra* Sect. 3.4.2.

Between these two opposing explanations, the first one seems to be more persuasive. In other words, the existence of relatively low liability and fewer headings of liability law in the past made the provision of liability insurance not so profitable venture for marine insurers. There was not enough demand for marine liability insurance. Marine insurance market at that time was already providing hull and cargo insurance. If there were enough demand for liability insurance, the market could have met such demand. However, today it can be also argued that the presence of very high capacity of insurance market is an influencing factor in the gradual increase of both the amount and the scope of maritime liability.[49]

People's insurance practice with regard to an activity may have some influence in the development of liability law for that activity. For example, in the cargo transportation settings both ship owners and cargo owners invariably carry insurance.[50] As a result, the need for cargo liability law to provide *compensation* to cargo owners is not as important as the need to create *deterrence* in the minds of ship owners.[51] Thus, the liability law for cargo damage is *negligence*-based as opposed to *strict* liability. In other words, ship owners are liable for cargo damage mainly when they are negligent with regard to the cargo in their care. On the other hand, a victim of vessel-sourced oil pollution (e.g., a fisherman) is unlikely to have insurance for the loss or damage arising from such oil pollution, while the ships carrying oil are usually insured against almost all their potential liabilities. Logically, the oil pollution liability law needs to address both the issues of *compensation* and *deterrence*. Seen from this perspective, *strict liability* for oil pollution makes practical sense.[52]

2.3.1 *Increasing Need for Marine Liability Insurance*

Although marine insurance was available from the beginning of fourteenth century,[53] it was mainly property insurance i.e., hull and cargo insurance. Marine liability insurance did not exist at that time. This was partly due to the fact that until the middle of nineteenth century the possibility for ship owners being held

[49] Examples of increasing liability include both newer areas of liability and higher amount of liability for the existing areas. Among new areas of liability are oil pollution liability, liability for bunker oil pollution and for pollution from Hazardous and noxious substance (HNS). Liability limit was raised in passengers' liability, general maritime liability and oil pollution liability laws. While ship owners argue the incapacity of market insurance to cover the increased liability, countries supporting an increase bring evidence that insurance market has very high capacity.

[50] See *infra* Sect. 5.5.

[51] We will take up the detailed discussion of cargo liability in Chap. 5.

[52] Chapter 6 will examine how well oil pollution liability regime is able to maintain the balance between these two needs.

[53] Vance (1908), pp. 6–7.

liable for any considerable amount was very low due to many reasons.[54] First, under the old common law no lawsuit was allowed for negligently-caused death to anyone including the victims of maritime accidents.[55] Second, there existed few causes of actions for maritime liability. Third, to a large extent ship owners could avoid liability even for those few causes of actions through 'exclusion clauses' in their contracts with cargo owners and passengers.[56] Finally, any remaining liability, if any, was subject to either limitation of liability and/or general average and thus could be reduced further.

Due to the above-mentioned legal and contractual barriers to maritime liability claims, ship owners faced very little risk of liability against them. The low liability risk did not make the purchase of liability insurance worth their while. This in turn delayed the development of marine liability insurance market. This scenario began to change from the middle of nineteenth century. A number of factors combined led to the increasing need for liability insurance.[57] Although these factors are mainly related to British marine liability insurance market, the center of the world's commerce at that time, the same factors also influenced the maritime laws and marine insurance markets of many other nations. These factors are discussed below.

2.3.1.1 Enactment of Lord Campbell's Act

First, in 1846 the enactment of the *Fatal Accidents Act*,[58] commonly known as the *Lord Campbell's Act*, changed the old common law on negligently-caused deaths. Under the old common law, the dependents of a deceased had no right to bring an action for damages against a person whose negligence caused the death of their relative. The law was based on an old maxim, *action personalis moritur cum persona* (personal actions for damages die with the deceased).[59] The maxim was probably due partly to the low value and little dignity attached to human life at that time.[60] The 1846 Act allowed dependents to bring actions for the monetary loss they suffered due to the death of their loved ones. The new law incidentally increased the risk of ship owners' liability for the death of passengers and crew members in shipping incidents. To be protected against such risk, they needed marine liability insurance.

[54] Reynardson (1969), p. 79.

[55] Gold et al. (2003), p. 465.

[56] See Sturley (1991), pp. 5–6.

[57] See Reynardson (1969), p. 457 for the discussion on these historical factors.

[58] 9 & 10 Vic., c. 93.

[59] See Gold et al. (2003), p. 551. It was probably because of the little value and dignity held for human life at that time. Reynardson (1969), p. 465.

[60] Reynardson (1969), p. 465.

2.3.1.2 Increasing Immigration to the US and Australia

Around the same time, ship owners' exposure to liability further increased due to the death of many people during the mass emigration from England and other European countries to the US and Australia.[61] Increased immigration in the middle of nineteenth century led to the construction of bigger ships with more passengers and crew members. Accident involving such ships meant many liability lawsuits related to personal injury and death.[62]

It is noteworthy here that the impact of the above two factors on the ship owners' increasing liability risk was somewhat neutralized by the enactment of the *Merchant Shipping Act of 1854*.[63] The Act limited ship owners' maximum liability to the actual value of the ship and the freight provided that there was no fault on their part.[64] However, for personal injury and death-related claims the maximum liability was determined through multiplying the total tonnage of a ship by £15 (i.e., £15 per ton). The value of ships calculated in this way used to be higher than the actual value of most ships even in their intact condition.[65] So, even if ship owners used their full hull insurance proceeds to pay for the injury and death-related liability claims, there could still be shortfalls. They thus needed liability insurance to cover for such shortfalls.

2.3.1.3 Insufficient Collision Liability Coverage

The need for liability insurance was also partly increased due to the decision of *de Vaux v. Salvador*[66] in 1835. Before this decision, a colliding ship's liability to the other colliding ship/s was paid by hull insurers on the ground that collision was a 'peril of the sea.' However, in this case it was held that collision was not a 'peril of the sea'. So, a colliding ship's liability to the other colliding ship/s was held not to be covered by the hull insurance.[67]

---

[61] While from 1825 to 1834 the average number of immigrants from Europe to the United States was 32,000 every year, the number rose to 71,000 in the next decade. Reynardson (1969), p. 465. Following the discovery of gold in Australia, an average of 87,000 people from the United Kingdom rushed to Australia every year from 1876 to 1880. Reynardson (1969), p. 465.

[62] As the liability under common law was unlimited, this was a very heavy burden on ship owners. To make the matter worse, the underwriters at Lloyd's refused to cover any such third party liabilities. Reynardson (1969), p. 466.

[63] 17 & 18 Vic., c. 104.

[64] The existing American law on ship owners' liability contains the similar provision.

[65] Tilley (1986), p. 264.

[66] (1836) 4 A & E 420, 111 E.R 845 (K.B.).

[67] If both ships were to blame in causing the collision, the basis of collision liability used to be the equal division of the aggregate loss between the involved ships. Based on this law, the insured ship owner in such case was liable to pay the other ship owner the difference between the half of the aggregate loss and the loss suffered by the insured ship owner. The insured ship owner then

To mitigate the effect of this decision, a new clause, known as the "running-down clause", was introduced and added to hull insurance policies against extra premium. This clause, however, did not provide *full* coverage for collision liability. It covered only three-fourths of the total collision liability. The owners of ships had to personally bear the remaining one-fourth.[68] The burden of this additional liability increased further the need for liability insurance coverage.

2.3.1.4 No Coverage for Excess Liability

In addition to the uncovered one-fourth value of a ship, there was also a lack of coverage for 'excess collision liability' over the actual value of the ship in a collision case. As mentioned above, hull insurers covered collision liability in a running-down clause. The maximum coverage of three-fourths value of the ship was determined on the basis of actual value of the vessel. Yet, the valuation for the purpose of collision liability was on the basis of the ship's tonnage. This sometimes caused a difference between these two valuations; the three-fourths coverage could be less than the three-fourths of the actual liability. Hull insurers did not use to cover this difference, known as 'excess collision liability.'[69]

The reluctance of hull insurers to provide full coverage for collision liability was mainly due to their desire to induce the insured ship owners to take proper care in the maintenance and operation of the ships. Insurers were more afraid in the past than today that the presence of liability insurance would dilute the very purpose of liability law i.e., deterrence from negligence.[70] This is reflected in an unsuccessful appeal by Lloyd's underwriters to the British Board of Trade in 1854 for legislation prohibiting collision liability insurance.[71] Their heightened fear could be due to their lack of ability to effectively monitor the negligent behavior of the insured ship owners.

claimed from the insurer for this payment as a loss arising from perils of the sea. The insurer refused on the ground that the reason for liability was not the peril of the sea *per se* but the admiralty rule of equal division. The court agreed with the insurer. See Bennett (2006), pp. 397–398.

[68] Tilley (1986), p. 262.

[69] Tilley (1986) at pp. 262–263.

[70] Shavell (1987), pp. 214–215. In order to prevent the dilution of deterrent effect of liability law, the former Soviet Union prohibited liability insurance. Brown (1978–1979), pp. 115–116. See also Fleming (1967), p. 826.

[71] Reynardson (1969), p. 467; Gold et al. (2003), p. 303.

2.3.2 P&I Clubs to Meet the Increasing Need for Liability Insurance

The increase of liability on the one hand and the reluctance of hull insurers to cover such liability on the other left ship owners with very little choice but to form their own mutual insurance clubs. This type of clubs still exists today and they are known as 'protection and indemnity' (P&I) clubs. The first of these clubs was established in 1854 and its name was Ship-owners Mutual Protection Society.[72]

P&I clubs have to be distinguished from their predecessor hull clubs although structurally they were quite similar. When P&I clubs began to appear, the hull clubs were in decline. However, hull clubs provided the model of mutual insurance for ship owners to establish their P&I clubs in the face of growing risk of liability in the nineteenth century and the reluctance of insurers to cover such liability.[73] The formation and the decline of hull clubs and the evolution of P&I clubs from the declining hull clubs will be briefly discussed below.

2.3.2.1 History of Hull Clubs

Hull clubs were established as a market reaction to the high premium of marine insurance and the concentration of insurance providers in London from the first quarter of eighteenth century. This was in turn due to the monopoly in insurance business granted by the *Bubble Act of 1720*[74] to two chartered corporations.[75] As the Act did not prohibit the provision of insurance by individual insurers, they could also provide insurance. For this purpose, they used to gather at the Lloyd's.

While the monopoly naturally led to increased premium, the location of these insurers in London caused inconvenience to the ship owners from other port cities of England both in obtaining insurance and in reaching prompt settlements for their claims. In response, the ship owners in Liverpool, Bristol, Hull and other British ports formed mutual hull clubs to protect against the risk of loss or damage to their ships. Each ship in a club would usually contribute an equal amount to meet the club's annual expenses for settling claims.

---

[72] Its successor was the Britannia Steam Ship Insurance Association, which is still in existence. It was followed by the Ship-owners Protection Association in 1855, which is now known as the West of England Protection and Indemnity Association. Reynardson (1969), p. 467.

[73] Such conservatism to provide coverage caused marine insurance market to lose lucrative liability insurance opportunities from time to time. While in the nineteenth century marine property insurers lost the opportunity to underwrite excess collision liability to the P&I clubs, in 1969 the P&I clubs themselves partially lost market for oil pollution liability insurance. Part of such liability is now covered by oil companies' insurance-like International Oil Pollution Compensation (IOPC) Fund. See M'Gonigle and Zacher (1979), p. 379.

[74] Geo I, c 18.

[75] The two chartered companies were: Royal Exchange and the London Assurance. Reynardson (1969), p. 463.

As the *Bubble Act* granted the two chartered companies the exclusive right to underwrite marine insurance, it was illegal to form any corporation, partnership or association for the purpose of providing marine insurance. Despite this prohibition, there was no legal action against any of these hull clubs during the entire period of the monopoly for over 100 years.[76] A British Parliamentary Inquiry into the state of marine insurance business in 1810[77] found the existence of more than 20 such clubs at that time.

During the monopoly, the hull clubs remained competitive as they provided the same or even better rate than the two companies and the Lloyd's. Being mutual insurance, they did not have to make any profits from the premium they charged their members.[78] However, after the monopoly had been abolished and new companies had entered marine market, the market became more competitive. The competitive pressure naturally led market insurers to make more differentiation between good and bad risks in order to charge individualized insurance premium for each insured. Consequently, insurance premium for well-built and adequately-maintained ships had dropped, while poorly-maintained ships had seen an increase in their insurance premium. The hull clubs, on the other hand, continued to offer mostly a flat rate premium for all the vessels under them regardless of their physical structure and strength. As a result, the owners of better-maintained ships preferred the Lloyd's and other market insurers over their hull clubs. The hull clubs were thus left mainly with the vessels of inferior quality. This was not sustainable condition and the clubs' business began to decline as a consequence.[79]

2.3.2.2 From Hull Clubs to P&I Clubs

While the middle of nineteenth century saw an increase both in the scope and the amount of ship owners' liability, they were unable to find corresponding insurance coverage from the market. This led to the formation of the P&I clubs. The structural

[76] This was probably because the intended beneficiaries of the monopoly, the two chartered companies, were less enthusiastic in marine insurance business than in other branches of insurance. This is proved by their market share of total marine insurance and their lack of resistance against the abolition of monopoly. Their market share was less than 4 % of total marine insurance premium. UK (1810), p. 7.

[77] Reynardson (1969), p. 462. Two of these clubs existed in London: Friendly Assurance and London Union Society. Although the existence of such a big number of hull clubs was adduced as further evidence in support of the Inquiry's finding that the marine insurance provided by the two companies and Lloyd's was inadequate, the monopoly was not abolished until 1824. Reynardson (1969), p. 462.

[78] This is evidenced by the premium charged in the two London hull clubs. In 1809, the Friendly Association charged its member 1.25 %, which would have been 9–11 % if insured at Lloyd's. The London Union Society charged an average premium of 5.10 %. If insured at Lloyd's, the premium would have been 9 % for transport ships and 18–20 % for colliers. Reynardson (1969), pp. 462–463.

[79] Reynardson (1969) at p. 464.

model for the emerging P&I clubs already existed in the hull clubs. In fact the founders of the very first P&I club, Ship-owners Mutual Protection Society, were the managers of several hull clubs.[80]

The main difference between the old hull clubs and the new P&I clubs was the type of insurance they were intended to provide. The former was established to cater for hull insurance[81] and the latter to provide coverage for the one-fourth value of a ship and the excess collision liability. Today, however, P&I clubs cover not only the uncovered collision liability but also almost any form of liability a club member could possibly incur.[82] Initially though, the clubs limited their coverage only to 'protection' liabilities as opposed to 'indemnity' liabilities. 'Protection' liabilities referred to non-cargo related liabilities such as collision liability, liability for personal injury or death of crew and passengers, while liabilities in relation to the carriage of goods were known as 'indemnity' liabilities.[83]

It is thought that the clubs began slowly to cover indemnity liabilities after the case of *The Westenhope* in 1870.[84] In this case, the ship together with its cargo was lost and the ship owners were held liable for the cargo loss because of the ship's deviation from its route.[85] The owners of the ship had to personally pay for the liability because no coverage was available for such liability either from the clubs or hull insurers. Following the case, a group of ship owners established Steamship Owners' Mutual Protection and Indemnity Association in 1874 to provide coverage both for the *protection* and *indemnity* liabilities, as indicated by the name of the club.[86] This club continues to exist today but its name has been changed to North of England Protection and Indemnity Association following its merger with North of England Protection Association.[87] Other clubs also did the same thing. Since then these clubs came to be known as 'Protection and Indemnity' (P&I) clubs. Thirteen of these clubs have joined together and formed the International Group of P&I clubs.[88]

---

[80] Reynardson (1969) at p. 467.

[81] Again, there was not much need for liability insurance at that time. Whatever liability existed then was probably insignificant and covered by the hull insurance or hull clubs as incidental items.

[82] Hazelwood (2000), pp. 152–153.

[83] Lay (1925), p. 133. Established as mutual protection societies, the clubs' original intention was to provide coverage against liabilities for loss of life and injury, collision damage, damage to piers, wreck removal etc. Reynardson (1969), pp. 464–465.

[84] Unreported. See Tilley (1986), pp. 264–265; Reynardson (1969), pp. 467–468.

[85] It is noteworthy that deviation from voyage automatically made a ship owner liable for any subsequent loss regardless of any connection between the deviation and the loss. Any clause in the bill of lading excluding this effect of deviation was unenforceable. *Davis v. Garrett*, (1830), 6 Bing. 716, 130 E.R. 1456; *J. Thorley Ltd. v. Orchis Steamship Co. Ltd.*, [1907] 1 K.B. 660 (C.A.); *Hain Steamship Co. v. Tate & Lyle Ltd* [1936] 2 all E.R. 597. See Gold et al. (2003), pp. 364–368.

[86] Tilley (1986), p. 265.

[87] Reynardson (1969), p. 468.

[88] Reynardson (1969) at p. 55 at note 76 in 591.

Today P&I clubs are the main providers of marine liability insurance.[89] The International Group of P&I clubs jointly covers over 90 % of the world's ocean-going merchant fleet.[90] The clubs cover almost all forms of ship owners' liabilities except collision liability to other vessels and cargo thereon, which is traditionally covered by hull policies. However, the coverage for excess collision liability is mainly provided by the clubs.[91] The areas of liability covered by the clubs gradually increased over the years either because of new legislation or the decisions of courts. The common areas of liability covered by the clubs are (1) the loss of or damage to cargo on the covered vessels, (2) the loss of life and personal injury, (3) wreck removal, (4) the damage to docks or other fixed objects and (5) oil pollution damage.[92] If a particular liability does not fall under any of the above areas of liability, the managers of the clubs have wide discretionary authority to indemnify a liable member under an 'omnibus clause' in the club rules.

2.3.3 History of Cargo and Oil Pollution Liability Regimes

In examining the influence of insurance on maritime liability law, the book will analyze in details two most important areas of maritime liability law: cargo loss/damage and oil pollution.[93] As a chapter on the historical evolution of marine insurance and maritime liability law, the chapter would remain incomplete without a brief history of these two areas of liability law.

2.3.3.1 History of Cargo Liability Regime

Transportation of goods is the primary activity of the shipping industry.[94] More than 95 % of the world cargo by weight is carried via ships.[95] Many legal disputes involving ships are thus related to cargo liability. Historically, under common law ship owners were automatically held liable for any loss of or damage to the cargo in their care unless they could prove the absence of negligence on their part *and* one of the four exonerating factors as a cause of the loss or damage. The four factors were an act of God, an act of public enemies, the fault of the cargo owners, and inherent

[89] Tetley (2002), p. 591.

[90] Tilley (1986), p. 261. The recent estimate is 95 %; see 2005 Annual Report of Britannia Club at 3.

[91] Buglass (1979), pp. 1367–1370.

[92] Buglass (1979) at pp. 1369–1370.

[93] As the transportation of cargo is the main shipping activity and as oil pollution liability regime is very comprehensive regime, we chose these two liability regimes for our analysis of maritime liability law in light of current marine insurance.

[94] See Gilmore and Black (1975), p. 13.

[95] Churchill and Lowe (1999), p. 255.

vice of the goods.[96] In other words, the liability of ship owners for cargo loss or damage was strict.

A possible explanation of such strict liability for cargo loss or damage is that in the absence of an organized insurance market for cargo it was thought unjust for cargo owners to bear the burden of loss of or damage to their cargo while the cargo was under the care of ship owners. This can be inferred from the courts' occasional reference to ship owners as the 'insurers' of cargo in the context of cargo liability cases.[97]

Later on, the law on cargo liability gradually changed from strict to negligence-based liability due possibly to a combination of factors such as the availability of cargo insurance, the doctrine of *laissez faire* and the use of bill of lading. While bills of lading provided ship owners with an opportunity to insert clauses excluding most of their possible liabilities, the application of *laissez faire* principle validated ship owners' freedom to include such exception clauses even exonerating the ship owners from the liability caused by their own negligence.[98] At the same time, the availability of widespread market insurance made it look less unjust and burdensome for cargo owners to bear the cargo losses caused by ship owners. As a result, by the end of nineteenth century, although strict liability still remained the default rule, ship owners could exclude their liability through the extensive 'exoneration clauses' in the bill of lading in the name of freedom of contract.[99]

The influence of *laissez faire* and its related concept 'freedom of contract' were more prevalent in maritime nations than in coastal states, reflecting their respective commercial interests. For example, while courts in the UK, a traditional maritime country, used to uphold any contractual exclusion of liability in the bill of lading on the basis of freedom of contract,[100] the US courts restricted such freedom and refused to implement any clause exempting ship owners from liability caused by their negligence on the ground of public policy.[101]

---

[96] Gilmore and Black (1975), pp. 139–140; Sturley (1991), pp. 4–5.

[97] See Beale (1897–1898), p. 158. In *Forward v. Pittard*, (1785) 1 T.R. 27 where Lord Mansfield said, "A ship owner is in the nature of an insurer." Beale (1897–1898) at pp. 167–168. *Per* Lord Wright in *Paterson Steamship Ltd. v. Canadian Cooperative Wheat Producers Ltd.*, [1934] A.C. 538 at 544 (PC), "At common law, he [ship owner] was called an insurer, that he was absolutely responsible for delivering in like order and condition at the destination the goods bailed to him for carriage." See also *Coggs v. Bernard* (1703), 2 LD. Raym. 909, 92 E.R. 107; cited in Gold et al. (2003), p. 363 and note 19.

[98] This was particularly the case in England. See Gilmore and Black (1975), p. 142.

[99] Sturley (1991), pp. 5–6. In 1890, the Glasgow Corn Trade Association made a petition to the British Prime Minister, where they complained that ship owners' "bills of lading are so unreasonable and unjust in their terms as to exempt [the ship owners] from almost every conceivable risk and responsibility." Petition of Glasgow Corn Trade Association, reprinted in H. R. Rep. No. 1988, 52d Cong., 1st Sess. 2 (1892); cited in Sturley (1991) at p. 10 and note 62.

[100] See *Tattersall v. National Steamship Co.*, (1884) 12 Q.B. Div. 297; *In re Missouri S.S. Co.*, (1889) 42 Ch. D. 321; cited in Sweeney (1993), p. 6 note 22.

[101] See *Liverpool & Great Western Steam Co. v. Phenix Insurance Co.*, (1889) 129 U.S. 397 (U.S. S.C); *Clark v. Barnwell*, (1851) 53 U.S. 272; *Propeller Niagra v. Cordes*, (1858) 62 U.S. 7; cited in Sweeney (1993), pp. 6–8.

To avoid unfavorable judgements by the US courts in this regard, British ship owners started inserting additional clauses on 'choice-of-law' and 'choice-of-forum' to ensure litigation by English courts using English law.[102] In response, the US Congress enacted the *Harter Act*[103] to protect the American cargo owners.[104] The *Harter Act* imposed two main duties on ship owners: the duty to exercise due diligence to provide a seaworthy ship and the duty to care for the cargo in the care of ship owners. As a compromise, however, the Act exempted ship owners from liability for cargo damage arising from the negligent navigation and management of ships by their masters and crew. This compromised solution appeared attractive to many countries and they either enacted or considered to adopt similar legislation.[105] For example, Canada adopted similar legislation in 1910, the *Water Carriage of Goods Act*.[106]

There were, however, some differences in the corresponding national legislation. The differences caused inconvenience and uncertainty in the minds of ship owners about their liability to cargo owners from different countries. This led to the call for a uniform cargo liability regime from ship owners and other interested parties. In response, the international community adopted the *Hague Rules* in 1924.[107] These rules were amended in 1967 and they are now jointly known as the *Hague-Visby Rules*.[108] Most of the world maritime nations are parties to these rules.[109]

Despite their wide acceptance, the *Hague-Visby Rules*' exclusion of ship owners' liability for cargo damage caused by the negligent navigation and management of a ship by its master and crew and the low liability limit are the sources of dissatisfaction for nations with little shipping interests.[110] To resolve these problems, the United Nations Commission on International Trade Law

[102] Sweeney (1993), p. 8; Sturley (1991), pp. 10–11.

[103] 27 Stat. 445–46 (1893), codified as 46 U.S.C. Appx. §§190–96.

[104] See Frederick (1991), pp. 83–84.

[105] Countries which enacted similar legislation are Australia, New Zealand and French Morocco. France, the Netherlands, Spain, Denmark, Norway, Sweden, Finland, Iceland and South Africa were considering similar legislation prior to the Hague Rules. Sturley (1991), pp. 15–18.

[106] 9–10 Edward VII, ch. 61; see Sturley (1991), pp. 16–17. In fact, Canadian legislation was the model on which the *Hague Rules* were based. The innovative feature of Canadian Act was that it contained in its section 8 a package limitation to the effect that a ship owner was not liable for more than $100 per package unless higher value was stated in the bill of lading. Sturley (1991), pp. 16, 19–21.

[107] See Sturley (1991), pp. 18–36 for various incidents from the 1917 Dominions Royal Commission Report on the need of uniform legislation to the proposal of the *Hague Rules* in 1921 and to its final adoption in 1924. See also Frederick (1991), pp. 86–94.

[108] The International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, Aug. 25, 1924, 51 Stat. 233, 120 L.N.T.S. 155; [hereinafter the *Hague Rules*] and its 1968 Protocol, 2 U.N. Register of Texts ch. 2, at 180 [hereinafter together the *Hague-Visby Rules*].

[109] About 75 % of maritime transport is done under the *Hague-Visby Rules*; Tetley (2003–2004), p. 9.

[110] See Sweeney (1975–1976), pp. 72–74; see also Frederick (1991), pp. 98–106.

(UNCITRAL) adopted the *Hamburg Rules* in 1980.[111] The rules came into force in 1992. Even though they have been in existence for over 32 years, the *Hamburg Rules* were ratified only by very few maritime nations.[112]

The low ratification of the *Hamburg Rules*, non-uniform national laws modifying the *Hague Rules*, and the increasing use of electronic shipping documents all led to the desire of a new cargo liability convention.[113] The desire was fulfilled through the adoption of the *Rotterdam Rules* by the UNCITRAL in 2008.[114] While the new convention made some changes with regard to few aspects of shipping, it did not make any change with regard to limitation of liability and general average principles,[115] the two liability principles analyzed and criticized in the book. This is regrettable as these two principles are responsible for negligent navigation and careless shipping to some extent. Subsequent chapters will focus more on these issues.

2.3.3.2 History of Oil Pollution Liability Regime

Although transportation of oil on ships is part of the broader shipping activities, the potentially serious pollution damage from transportation of oil via sea led to separate liability regime. In the past, however, oil pollution liability was not a separate area of ship owners' liability. Until 1969 liability for oil pollution damage was dealt under the general maritime liability law.[116] People suffering damage from a ship-sourced oil spill could claim under the common law principles of negligence, trespass, nuisance, and strict liability.[117] Ship owners could limit their liability

[111] United Nations Convention on the Carriage of Goods by Sea, Hamburg, Mar. 31, 1978, U.N. Doc. A/Conf. 89/5, (1978) 17 I.L.M. 608 [hereinafter the *Hamburg Rules*].

[112] Out of 32 state parties to the *Hamburg Rules*, few of them are major commercial and maritime powers. In fact about one-third of the contracting states are land-locked. See Sturley (2003–2004), p. 66; see also Sturley (2004), p. 138 note 1.

[113] See generally Sturley (2003–2004), pp. 66–68.

[114] The full name of the Rules is Convention on Contracts for International Carriage of Goods Wholly or Partly by Sea, Dec. 11, 2008, G.A. Res. 63/122, U.N. Doc. A/RES/63/122 [hereinafter the *Rotterdam Rules*].

[115] See articles 59–61 (limitation of liability) and article 84 (general average) of the *Rotterdam Rules*.

[116] Tan (2006), p. 288.

[117] See *Southport Corporation v. Esso Petroleum Company Ltd*, [1953] 2 Lloyd's Rep. 414 (Trial Div.); [1954] 1 Lloyd's Rep. 446 (CA); [1955] 2 Lloyd's Rep. 655 (HL); *The Wagon Mound*, [1961] A.C. 388 (P.C.); *Kirwin v. Mexican Petroleum Co.*, 267 F. 460 (Dist. of Rhode Island, 1020); *Salaky v. Atlas Tank Processing Corp.*, 120 F. Supp. 225, 1954 AMC 80 (E.D.N.Y. 1953), rev'd on other grounds, 208 F.2d 174, 1954 AMC 77 (2d Cir. 1953); *In re New Jersey Barging Corp.*, 168 F. Supp. 925, 1959 AMC 2532 (S.D.N.Y. 1958); *Oppen v. Aetna Ins. Co.*, 485 F.2d 252, 1973 AMC 2165 (9th Cir. 1973). The American cases are cited and discussed in Kiern (2000), pp. 490–502.

under the general maritime liability law.[118] The world community recognized the inadequacy of the existing laws to cover the expenses of devastating oil pollution damage in the aftermath of the *Torrey Canyon* incident in 1967.[119]

Starting from 1969 the International Maritime Organization (IMO) gradually developed separate liability regime mainly to provide adequate compensation for oil pollution. Oil pollution liability regime is composed of two conventions, known shortly as the Civil Liability Convention (CLC) and the Fund Convention.[120] The CLC deals with the ship owners' liability. The liability for oil pollution under the CLC is strict but the amount is limited. The Fund Convention, on the other hand, has established the International Oil Pollution Compensation (IOPC) Fund to compensate for oil pollution damage when the compensation from ship owners under the CLC is either inadequate or unavailable.[121] However, the amount of compensation from the IOPC Fund is also limited, albeit at a higher limit.

In 2003, the IMO adopted a new Protocol to the Fund Convention to establish a Supplementary Fund, the third tier of compensation with SDR750 million (US$1.13 billion) ceiling.[122] The Protocol came into force on March 3, 2005.[123] Most of the major oil importing and exporting countries are parties to the CLC and Fund Conventions.[124] However, the world's largest oil importer, the USA did not ratify any of these conventions.

---

[118] See *supra* note 38 for the list of conventions on general maritime liability law.

[119] Cleanup alone cost the British and French governments £7.70 million (US$18 million). Although it was impossible to estimate the damage to the environment, total quantifiable cost was £14.24 million. Burrows et al. (1974), p. 258. Ultimately, the UK and France settled for slightly over US$7 million. M'Gonigle and Zacher (1979), p. 153.

[120] Oil pollution compensation regime consists of two international conventions: (1) International Convention on Civil Liability for Oil Pollution Damage, 1969, 973 U.N.T.S.3, 9 I.L.M. 45 (1970), [hereinafter the CLC] and (2) International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, 16 I.L.M 621 (1972), as amended by 1992 Protocols [hereinafter the Fund Convention]. The 1992 Protocols can be found in the IMO documents, LEG/CONF.9/15 and LEG/CONF.9/16.

[121] Two voluntary agreements mirroring the compensation mechanisms of these two conventions were reached by the oil companies and ship owners in order to provide compensation for oil pollution before the entry into force of the conventions. They are TOVALOP (Tanker Owners' Voluntary Agreement on Liability for Oil Pollution), (1969) 8 I.L.M. 497 and CRISTAL (Contract Regarding an Interim Settlement of Tanker Liability for Oil Pollution), (1971)10 I.L.M. 137. These agreements continued to exist long after the entry into force of the conventions and they were discontinued from Feb. 20, 1997. See Tan (2006), pp. 329–330.

[122] Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 [hereinafter the Supplementary Fund Protocol]; the Protocol can be found in the IMO document: LEG/CONF.14/20.

[123] See the IMO website at http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[124] For example, China, Japan, Canada, France, Germany, UK, Russia, India, Saudi Arabia, Oman and Iran are all parties to these conventions.

2.4 Conclusion

Marine insurance has come a long way from the efforts of individual cargo owners to spread maritime risks by sending their cargoes on various vessels to modern market insurance. Marine market insurance today not only spreads the maritime risks over many insured ship owners and cargo owners but also over many non-maritime sectors through reinsurance in the wider insurance market. This change of marine insurance reality does not fully reflect in the maritime liability law. There still exist some principles in maritime liability law which were originally designed to serve insurance-like functions in the pre-insurance era. Two such principles are limitation of liability and general average. They will be the subject of analysis in the next two chapters. In an ideal maritime liability law, they should be abolished.

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven

Beale JH Jr (1897–1898) The carrier's liability: its history. Harv Law Rev 11:158

Bennett HN (2006) The law of marine insurance, 2nd edn. Oxford University Press, New York

Bischoff J (1836) Marine insurance: their importance, their rise, progress and decline, and their claim to freedom from taxation. A.H. Baily and Co., London [reproduced in: Jenkins D, Yoneyama T (eds) (2000) History of insurance (v.7: marine). Pickering & Chatto, London]

Brown C (1978–1979) Deterrence and accident compensation schemes. Univ West Ont Law Rev 17:111

Buglass LJ (1979) Limitation of liability from a marine insurance viewpoint. Tulane Law Rev 53:1364

Burrows P et al (1974) The economics of accidental oil pollution by tankers in coastal waters. J Public Econ 3:258

Calabresi G (1970) The costs of accidents: a legal and economic analysis. Yale University Press, New Haven

Churchill RR, Lowe AV (1999) The law of the sea, 3rd edn. Manchester University Press, Manchester

Donovan J (1979) The origins and development of limitation of shipowners' liability. Tulane Law Rev 53:999

Dover V (1975) A handbook to marine insurance: being a textbook of the history, law and practice of an integral part of commerce for the businessman and the student, 8th edn. Witherby & Co. Ltd, London

Fleming J (1967) The role of negligence in modern tort law. Va Law Rev 52:815

Frederick DC (1991) Political participation and legal reform in the international maritime rulemaking process: from The Hague rules to the Hamburg rules. J Marit Law Commer 22:81

Gilmore G, Black C Jr (1975) The law of admiralty, 2dth edn. Foundation Press Inc., New York

Gold E et al (2003) Maritime law. Irwin Law Inc., Toronto

Hazelwood S (2000) P & I clubs: law and practice, 3dth edn. LLP, London

Holmes OW (1949) The common law. Little, Brown and Company, Boston

Holt CM (1898) A treatise on the insurance law of Canada. C. Theoret, Law Bookseller and Publisher, Montreal

Kiern LI (2000) Liability, compensation, and financial responsibility under the Oil Pollution Act of 1990: a review of the first decade. Tulane Marit Law J 24:481
Lay HG (1925) Marine insurance: a text book of the history of marine insurance including the functions of Lloyd's Register of shipping. Post Magazine, London
M'Gonigle RM, Zacher MW (1979) Pollution, politics, and international law: tankers at sea. University of California Press, California
Martin F (1876) The history of Lloyd's and of marine insurance in Great Britain. Burt Franklin, New York
Mitchell CB (1970) A premium on progress: an outline history of the American marine insurance market: 1820–1970. The Newcomen Society in North America, New York
Pauly M (1968) The economics of moral hazard: comment. Am Econ Rev 58:531
Rejda GE (2008) Principles of risk management and insurance, 10th edn. Pearson Education Inc., Boston
Reynardson WRAB (1969) The history and development of P&I insurance: the British scene. Tulane Law Rev 43:457
Selmer KS (1958) The survival of general average: a necessity or an anachronism? Oslo University Press, Oslo
Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge
Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge
Strathy GR, Moore GC (2003) The law and practice of marine insurance in Canada. Butterworths, Ontario
Sturley MF (1991) The history of COGSA and The Hague rules. J Marit Law Commer 22:1
Sturley MF (2003–2004) The United Nations Commission on international trade law's transport law project: an interim view of a work in progress. Tex Int Law J 39:65
Sturley MF (2004) Scope of coverage under the UNCITRAL draft instrument. J Int Marit Law 10:138
Sweeney JC (1975–1976) The UNCITRAL draft convention on carriage of goods by sea (part I). J Marit Law Commer 7:69
Sweeney JC (1993) Happy birthday, Harter: a reappraisal of the Harter Act on its 100th anniversary. J Marit Law Commer 24:1
Tan AK (2006) Vessel-source marine pollution: the law and politics of international regulation. Cambridge University Press, New York
Tetley W (2002) International maritime and admiralty law. Les Editions Yvon Blais Inc., Quebec
Tetley W (2003–2004) Reform of carriage of goods – the UNCITRAL draft and senate COGSA '99. Tulane Marit Law J 28:1
Tetley W (2008) Marine cargo claims, 4th edn. Thomson Carswell, Quebec
Tilley M (1986) The origin and development of the mutual shipowners' Protection & Indemnity Associations. J Marit Law Commer 17:261
Trenerry CF (1926) The origin and early history of insurance, including the contract of Bottomry. P. S. King & Son Ltd., London
UK (1810) Report from the Select Committee on Marine Insurance (UK) (1810), parliamentary paper 116. Reproduced in: Jenkins D, Yoneyama T (eds) (2000) History of insurance (v.8: marine). Pickering & Chatto, London
Vance WR (1908) The early history of insurance law. Columbia Law Rev 8:1

Chapter 3
Insurance and Limitation of Ship Owners' Liability: An Economic Analysis

3.1 Introduction

Limitation of liability is a common feature in all areas of maritime liability.[1] Its historical justification seems to be the encouragement of investment into the shipping sector.[2] Today its proponents argue either the lack of insurance capacity or the cost of insurance for unlimited liability as a reason for its continued existence.[3] The opponents criticize it mostly for its consequence in depriving the victims of maritime accidents from adequate compensation.[4] In response, policy makers in maritime law focus on increasing the amount of compensation,[5] without abolishing the principle. This approach fails to take into consideration the main goal of liability law i.e., deterrence from negligence. By limiting the amount of liability,

An earlier and shorter version of this chapter appeared in Billah (2007), pp. 297–319.

[1] For general limitation of ship owners' liability, see the Convention on Limitation of Liability for Maritime Claims, 1976, (1977) 16 I.L.M. 606 [hereinafter LLMC 1976]. The liability limit of the 1976 Convention was further increased by an average of 2.3 times by a Protocol in 1996 (LEG/CONF.10/DC.2 of May 2, 1996). It is noteworthy here that limitation of liability also exists in other modes of transportation.

[2] For historical development of limitation of ship owners' liability, see Donovan (1979), pp. 999–1045.

[3] For example, the International Chamber of Shipping (ICS) stated in a submission to the 1976 Limitation of Liability Conference, ". . .the main justification of limitation of liability today is the insurability of the risk with its two elements, the availability of cover and economic cost." LEG/CONF.5/6 (27 Sept. 1976) in IMO (1983), pp. 112–113.

[4] See Gauci (1995), p. 65. For criticisms of the US Limitation of Liability Act of 1851[46 U.S.C.A. §§181–189], see Gilmore and Black (1975), pp. 818, 821–823.

[5] See the preamble to International Convention on Civil Liability for Oil Pollution Damage, 1969, 973 U.N.T.S.3, 9 I.L.M. 45 (1970), as amended by 1992 Protocol, LEG/CONF.9/15 [hereinafter the CLC] and International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, 16 I.L.M 621 (1972), as amended by 1992 Protocol, LEG/CONF.9/16, and 2003 Protocol, LEG/CONF.14/20 [hereinafter the Fund Convention].

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_3, © Springer International Publishing Switzerland 2014

limitation of liability reduces the burden of liability on ship owners. Lower liability leads to lower precaution. Limitation of liability thus encourages negligent navigation.

In Sect. 3.2, we will argue why deterrence should be the main goal of maritime liability law. In Sect. 3.3, we will analyze limitation of liability in terms of its effect on potentially liable parties' behavior and its desirability in maritime law. We will describe and refute the insurance arguments ship owners use to maintain limitation of liability in Sect. 3.4. Finally, we will recommend in Sect. 3.5 the abolition of limitation of liability from maritime liability law and discuss the possible consequences of this change.

3.2 Nature of the Problem

"If my dog kills your sheep and I freshly after the fact tender you the dog you are without recourse against me."[6] This was the basis of limitation of liability in traditional maritime law. If my ship was the cause of your loss and I surrendered you the ship or its value after the incident, I would be relieved from any further liability.[7] Thus if the ship was completely lost in the accident, there was no liability. Based on this principle, the liability of the ship owner was held to be only US$50 in the famous *Torrey Canyon* oil spill incident of 1967,[8] while the clean-up cost the UK and French governments US$15 million.[9] It is noteworthy that today limitation of liability under international maritime liability conventions is not calculated this way but on the basis of the total tonnage of a ship or on per passenger basis.[10]

Fast forwarded to 45 years from the *Torrey Canyon* incident, maritime liability law today is in a much better shape, at least in terms of compensation. Liability limit under general maritime liability convention[11] had been increased twice since

[6] These are the words of a judge in the time of Edward III and cited by Holmes J. in *Liverpool, Brazil and River Plate Steam Navigation Co. v. Brooklyn Eastern District Terminal*, 251 U.S. 48 at 53 (US S.C. 1919).

[7] The principle of surrender is based on the Roman law doctrine *noxae deditio* (surrender of the offending instrument exonerates the wrongdoer from liability). See Holmes (1949), pp. 6–13.

[8] The value of the single salvaged lifeboat; see *In re Barracuda Tanker Corp.*, 228 (S.D.N. Y.1968).

[9] However, the claim was finally settled at US$3 million. See Kiern (2000), p. 503.

[10] See Articles 6 and 7 of the LLMC 1976. However, under the US Limitation of Liability Act (46 U.S.C. App. §§ 188–189) the value of the ship after an incident plus pending freight is still the criterion for property damage. The tonnage based calculation has been in the international maritime law since the first international convention on limitation in 1924, the International Convention for the Unification of Certain Rules relating to the Limitation of Liability of the Owners of Sea-going Vessels, 1924; League of Nations Treaty Series No. 2763, Vol. CXX, p. 125 [hereinafter the 1924 Liability Convention].

[11] During the *Torrey Canyon* incident, general liability for maritime claims including oil pollution was governed by the International Convention Relating to the Limitation of the Liability of

then. Special liability regimes with much higher limit were adopted for oil pollution from tankers, and for damage from certain hazardous and noxious substances (HNS).[12] In addition, these special liability regimes have various features to ensure adequate compensation for the victims of maritime incidents such as strict liability, compulsory insurance, and direct action against insurers.[13] One thing, however, remains unchanged: the right of ship owners to limit liability. In fact, the right is now made almost an indefeasible one.[14] This affects deterrence, the main purpose of liability law under an economic analysis of law.[15]

3.2.1 True Purpose of Liability Law: Deterrence

The traditional legal view about the purposes of liability is that liability serves two functions: compensation and deterrence.[16] Between these two, compensation seems to be more dominant purpose both in tort and contract liability.[17] Yet when a liability claimant can receive compensation or indemnity for his or her loss from sources other than the liable party, the function of liability as a source of compensation becomes less important.

Owners of Sea-going Ships, 10 October 1957, 52 U.K.T.S. 355 (1968) [hereinafter the 1957 Convention]. The LLMC 1976 increased the limit by more than double the 1957 Convention's limit. The limit in the LLMC 1976 was increased further by an average of 2.3 times by its 1996 Protocol. General liability convention applies to all maritime liability unless excluded either by the LLMC 1976 itself (see article 3) or by express provision of special liability regimes. Although there are specific liability conventions on cargo liability and liability for passengers' injury and death or for damage or loss of their luggage, these areas of liability are still subject to the LLMC 1976. See Griggs et al. (2005), pp. 106, 109, 134–136.

[12] For the conventions on oil pollution, see *supra* note 5. The convention on HNS is International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996, 35 I.L.M. 1406 [hereinafter HNS Convention]. It is not yet in force. For the status of conventions, see http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[13] Provisions requiring insurance certificates are Article VII.1 of the CLC, Article 12 of the HNS Convention, Article 7 of International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001, LEG/CONF 12/19 [hereinafter the Bunkers convention], and Article 5 of the 2002 Protocol (LEG/CONF.13/20) to Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea, 1974; (1975) 14 I.L.M 945 [hereinafter PAL 1974]. For direct action against insurers, see Article VII.8, Article 12 (8), Article 7 (10), and Article 5(10) of the above conventions respectively and for strict liability see Article 4(1) (a) and (b) of the 2002 Protocol to the PAL 1974.

[14] See the test to break the liability limit in Article 4 of the LLMC1976.

[15] Shavell (2004), pp. 267–269, 635–638.

[16] See Brown (1978–1979), p. 111; Trebilcock (1987), p. 929.

[17] It is expressed retrospectively in tort (to put the victim back where he would have been had the tort not occurred) and prospectively in contract (to put the promisee in a position where he would have been had the contract been performed). In both situations, the outcome is same i.e., to pay the plaintiff for his loss. See Rose (2004), p. 487.

If it were only for compensation, liability may not be even desirable in some cases. For example, when the cost of maintaining liability system exceeds the benefit of compensating a victim who would have received compensation from other sources but for liability, the liability systems is inefficient.[18] However, when the imposition of liability deters potentially liable parties from negligence, which in turn reduces future losses, the benefits of liability may outweigh the cost and make the liability socially desirable. In other words, the desirability of liability depends on its functional value of reducing harm through deterrence.

In maritime liability settings, the victims of maritime accidents would usually receive full compensation or indemnity regardless of ship owners' liability. For example, an owner of damaged or lost cargo will receive indemnity for the loss from the cargo insurer.[19] The owners of damaged ships in a collision case will receive indemnity for any uncompensated loss from their hull insurers. The passengers on a ship may receive their unrecoverable medical expenses or lost earnings from their private insurers or receive assistance from social insurance.[20] The victims of oil pollution on the sea will get compensation from various compensation funds established for this purpose.[21]

Despite all the above sources of compensation or indemnity, liability is still imposed on ship owners. Deterrence seems to be the only conceivable reason for liability. In any of the above situations, limitation of liability will not deprive the victims of adequate compensation. This is not to say that the victims of maritime incidents will always receive full compensation from one source or another. There are situations when a victim may not get full compensation from other sources and at the same time the liable ship owners do not have to pay fully for the losses caused by their negligence because of limitation of liability.[22]

---

[18] Shavell (2004), pp. 635–638. In such situation, the desirability of liability as for the purpose of compensation will lie on the value we assign to the notion that a wrongdoer must fully compensate the victim (the classical notion of corrective justice). Such value may not be high, or at least not high enough to justify the cost of liability system when we consider the fact that victims will be compensated regardless of liability (e.g., from first party insurance) and that it is not the wrongdoer but his liability insurer who pays the liability judgment.

[19] For an excellent discussion on who should bear the cost of insurance in the context of cargo liability, see Sturley (1993), p. 119.

[20] Passengers who do not have private insurance are likely to be from low-income bracket of the society and their loss of earnings from an accident will unlikely to exceed the limit set out in the either in the LLMC 1976 or in the PAL 1974. They will thus receive adequate compensation from ship owners. The current liability limit for personal injury or death of per passenger is SDR 175,000 ($0.75 million) under article 7(1) of the LLMC 1976 and SDR 46,666 under PAL 1974. This amount will be increased to minimum SDR 250,000 and maximum SDR 400,000 per passenger, when the 2002 Protocol (LEG/CONF.13/20 of 19 November 2002) to PAL 1974 comes into force.

[21] They can receive up to SDR 750 million (=US$1.13 billion) per incident from a three-tier compensation system. The calculation is based on the value of SDR on 30 August 2013 (SDR 1 = US$1.51528). See http://www.imf.org/external/np/fin/data/rms_sdrv.aspx. Accessed 31 August 2013.

[22] Despite the existence of very high ceiling for oil pollution liability, in some cases such as *Amoco Cadiz*, *Erica* and *Prestige* the available funds were still insufficient to meet all the claims in full.

If compensation were the sole goal of liability law, special maritime liability regimes can be cited among the best liability regimes in the world.[23] For example, under the current oil pollution liability regime more than US$1 billion is available for a single oil spill incident through a three-tier oil pollution compensation regime. Under the first tier, there may be compensation up to SDR 89 million (US $134.86 million).[24] This is the ship owners' liability. The second tier can provide up to SDR 203 million (US$307.6 million), which comes from the International Oil Pollution Compensation Fund (IOPC Fund).[25] Finally, in the third tier the Supplementary Fund can pay up to SDR 750 million = US$1.13 billion.[26] The funds in the second and third tiers are contributed by the oil companies from the contracting states. In addition, there are national funds in case the loss does not fall under the international regime.[27] For example, oil pollution on Canadian water can be further compensated by the Ship-source Oil Pollution Fund (SOPF).

Very high amount of compensation will also be available for damage caused by certain hazardous and noxious substances (HNS) when the HNS convention comes into force. The HNS Fund will provide up to SDR 250 million (US$378.82 million) per incident including SDR 100 (US$151.53 million) million maximum amount of liability from ship owners.[28] Despite the high level of compensation in these regimes, the deterrent effect of liability law may not be fully felt by ship owners due to their limited liability. This is because part of the compensation money in the special liability regimes comes from parties who are not directly involved in the navigation of ships.

Although compensation scheme in other areas of maritime liability is not as generous as that in oil pollution or HNS conventions, liability limit has been increased substantially in other areas since the *Torrey Canyon* incident. For example, the general maritime liability regime of the LLMC 1976 was amended by a

For details of these incidents, see http://www.iopcfunds.org/incidents/incident-map/#. Accessed 31 August 2013.

[23] This is not to say that oil pollution liability regime is a perfect regime and fully covers every aspect of pollution damage. There are cases under this regime where full compensation was not available. Among these are the highly publicised cases of the *Amoco Cadiz* in France in 1978, the *Erika* again in France in 1999, and the *Prestige* in Spain in 2002. However, the number of such cases is few and far between.

[24] Art. V.1 of CLC. SDR (Special Drawing Right) is the monetary unit for International Monetary Fund. SDR 1 = US$1.51528 as of 30 August 2013 at http://www.imf.org/external/np/fin/data/rms_sdrv.aspx. Accessed 31 August 2013.

[25] Art. 4 (4) of the Fund Convention.

[26] Art. 4 (2) of the 2003 Protocol to the Fund Convention.

[27] Among such cases is the liability for a 'mystery-spill' i.e., the source of oil pollution is unknown; article 4.2 (b) of Fund Convention. See The Administrator of Ship-Source Oil Pollution (2006).

[28] See Articles 9 and 14 of the HNS convention.

protocol in 1996.[29] As amended, the LLMC 1976 provides for at least SDR 2 million (US$2.93 million) for the loss of life and personal injury and SDR 1 million ($1.46 million) for the property claims per incident.[30]

For liability regarding passengers' loss of life and personal injury, an additional amount of SDR 175,000 (US$256,747) per passenger is provided under article 7 (1) of the LLMC 1976 as amended by its 1996 Protocol.[31] However, the real value of the increased amount in the general liability regime as amended by its 1996 Protocol may appear very little or none at all if we take into account the inflation rate over the years.[32] Despite the erosion of monetary value, the ceiling of liability is quite high compared to the amount under the original version of the LLMC 1976. In addition, it is possible that compensation from other sources may make up for the victim's uncompensated loss.[33]

[29] The Protocol came into force on 13 May 2004. See the status of the IMO Conventions at IMO website: http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[30] Article 6(1) of the LLMC 1976 as amended by its 1996 Protocol. This is for a ship with a tonnage of 2,000 or less. Beyond 2,000 tons, the calculation is based on a tapering system. SDR 800 and 400 for each additional ton up to 30,000 tons, SDR 600 and 300 per ton up to 70,000 tons and SDR 400 and 200 each ton above 70,000 tons for personal injury and death and for property damage respectively.

[31] This amount is supposed to reflect the 1990 Protocol to the PAL 1974, which is now abandoned in favour of the new 2002 Protocol with the minimum SDR 250,000 and the maximum SDR 400,000 per passenger. There may be some unintended inconsistencies between the PAL 1974 and the LLMC 1976. As ship owners may choose between the LLMC 1976 and the PAL 1974 (Art. 19 of the PAL 1974) but the passengers can claim only under the PAL 1974 (Art. 14), a ship owner may opt for lower limit if there are different limits under the conventions as is the case now. Currently, it is SDR 46,666 under the former and, as mentioned, SDR 175,000 under the latter. However, the situation would be reverse if the 2002 Protocol comes into force. This problem would not arise for a country which is a party to only one of these conventions. The drafters could have avoided this problem by simply cross-referring the LLMC 1976s provision on passenger claims to the PAL 1974 without including any figure in the LLMC1976. Another inconsistency may arise with regard to the maximum limit of liability. While it is calculated by reference to the actual number of passengers multiplied by per passenger limit under PAL 1974, under the LLMC 1976 the relevant number is the number of passengers the ship is certified to carry. See Griggs et al. (2005), pp. 52–55. With regard to the last point, a member of the Polish delegate at the 1976 Limitation Conference suggested that the actual number should be the basis of calculation. So the inconsistency is probably left on purpose to favour ship owners. See LEG/CONF.5/C.1/SR.2 (Nov. 02, 1976) in the IMO (1983), p. 217.

[32] For example, the 1996 Protocol made an average increase of 2.3 times, while the inflation between 1976 and 1996 made the 1976s limit three times less valuable in 1996. Griggs et al. (2005), p. 43. Similarly, the increase by the LLMC 1976 was double the amount provided in the 1957 Convention, just enough to counterbalance the effect of inflation. See IMO (1983), pp. 76–77.

[33] An example of such indemnity may be the personal insurance of the victims or the social insurance from the government.

3.2.2 *Limitation of Liability Affects Deterrence*

The main problem with limitation of liability is not inadequate compensation for liability claimant but under-deterrence of ship owners from negligence. Both inadequate compensation and under-deterrence are the consequences of limited liability on ship owners. However, the problem of inadequate compensation can be addressed by other means[34] even when there is limitation of liability. The problem of under-deterrence cannot be solved with the presence of limited liability. For example, even though ship owners' liability is limited, the victims of maritime accidents can still have full indemnification or compensation from their private insurance (e.g., cargo insurance), social insurance (e.g., public health care for injured passengers or crew) or the payment from some compensation funds such as the IOPC Fund or HNS Fund.

In fact, the availability of first party insurance may support even the abolition of whole maritime liability law system if compensation were the sole objective of liability. This is especially so when we consider the high costs of maintaining the liability system and the availability of cheaper alternatives to the liability system to provide for compensation such as special funds or first party insurance.[35] If there is any justification for liability today, it must be due to its deterrent effect. Limitation of liability affects this very purpose of liability system.

3.3 Economic Analysis of the Problem

3.3.1 *Nature of Economic Analysis*

Economic analysis of a legal rule examines the effect of the rule on the behavior of rational individuals i.e., how they respond to incentives (descriptive or positive analysis) and then evaluates the desirability of the rule in light of the maximization of social welfare or utilities (normative analysis).[36] For example, a 'polluter pays' rule in the case of oil pollution may be analyzed first by examining its effect on the behavior of potential polluters whether they would take optimal care to prevent pollution or reduce their pollution-generating activities. This will be descriptive analysis.

---

[34] Examples of such means are oil pollution or HNS compensation funds and private or social insurance.

[35] The cost to the society from litigation was one of the factors behind the introduction of 'no-fault' automobile liability system. The deterrent effect of automobile liability was minimal in many cases as these cases were of accidental nature without any negligence on the part of the involved parties. See Sugarman (1985), p. 555.

[36] Shavell (2004), pp. 1–4. Broadly defined, utility is the satisfaction a person derives from an activity. As it is almost impossible to measure how much satisfaction a person would derive from an activity (e.g., driving a car or buying a product), it is roughly measured by a person's willingness to pay for a product or service. See Shavell (2004), pp. 1–4.

Then we can further examine whether the rule is socially desirable by comparing the cost on polluters (i.e., the forgone profits due to the increased cost of precaution or reduced activities) against the benefits of a pollution-free sea to other users[37] and non-users of the sea[38] (normative analysis). Besides the costs on polluters, the measurement of social welfare will also take into account the administrative costs of implementing the rule. With regard to the limitation of liability rule, the descriptive analysis will examine the effect of limited liability on the behavior of potentially liable ship owners in their decisions whether to take optimal care or not. The normative analysis will compare the social benefits of limited liability both in the past and today, if any, against the costs of maritime losses due to under-deterrence arising from the limitation rule.

As the focus of our analysis is the desirability of limitation of liability and not the liability itself, we will not discuss whether the law on ship owners' liability itself is desirable in the first place. Since ship owners themselves are not opposed to their liability, we can assume that the imposition of liability for maritime losses is desirable. The fact that liability is imposed on ship owners mainly for their fault or negligence also supports the desirability of the liability law. However, we will shortly note at the end of the chapter the conditions for a liability law to be desirable.

3.3.2 Descriptive Analysis of Limitation of Liability

As limitation of liability is the opposite concept of full liability, the existence of one would reduce the effect of the other. If full liability is necessary to create optimal deterrence, such deterrence will be affected to the extent liability is reduced due to limitation of liability.

3.3.2.1 The Effect of Liability on Behavior: Deterrence

Liability deters potentially liable parties from being negligent in their activities. As mentioned in the introduction of the book, a party is negligent for failing to take care or precaution when the cost of precaution is less than the expected harm. The cost of taking precaution is certain but the loss or liability is usually probabilistic. Thus the loss would be expressed in an expected amount. For example, if there is a 10 % chance of a $1,000 loss, the expected loss is $100 ($1,000 × 10 %) and the precaution would be optimal if it costs less than $100, say $90.[39]

[37] Such benefits may include aesthetic and recreational values to the users.

[38] For example, the satisfaction derived by a non-user from knowing the existence of clean sea.

[39] The assumption here is that the precautionary measure will eliminate the accident. If the precaution only reduces the probability, the optimal precaution would cost less than the difference

Not taking optimal precaution will amount to negligence. In the economic analysis of law literature this is known as 'Hand Formula', named after Judge Learned Hand. In *U. S. v. Carroll Towing Co.*,[40] Judge Hand held that a person would be negligent if $B < PL$ where B is the cost of precaution, P the probability and L the magnitude of loss.[41] As we assumed at the beginning of this section that the liability on ship owners is desirable, we can say that precautions taken by ship owners due to the fear of liability would save the society more than the costs of precaution.[42] Put differently, ship owners' cost of care is less than the victims' expected loss.

3.3.2.2 The Effect of Limitation of Liability: Under-Deterrence

In the above example, if the liability is limited to $500, for example, instead of $1,000, the expected liability will be less than expected loss and, as a result, a potentially liable party may not take optimal precaution.[43] While the expected loss of a victim would be $100, the expected liability would be $50 ($500 × 10 %). Although taking precaution at a cost of $90 would be optimal precaution, a potentially liable party would only take precaution when the cost of precaution is below the expected liability i.e., $50, assuming that the party is risk-neutral.[44] Although this person will be held negligent for not taking care, limited liability makes it more advantageous for him or her to be negligent than to take optimal precaution. Limitation of liability thus leads to under-deterrence.[45] Being negligent would pay in situations where liability is less than the actual loss.

---

between the original expected loss and the reduced expected loss. For example, if the precaution reduces the probability from 10 to 4 %, the optimal cost of precaution would be less than $60 ($100 × 10 % − 100 × 4 %). See Posner (2003), p. 168.

[40] 159 F.2d 169 at 173 (2d Cir. 1947); see Posner (2003), p. 168.

[41] When only one party's precaution can optimally eliminate or reduce the loss even though both sides can take precaution, it is socially desirable to impose liability on the "least-cost avoider". Optimal precaution may also require precaution by both parties. See Shavell (1987), pp. 5–46; Shavell (2004), Chap. 8. It is also noteworthy that even though optimal precaution is not possible, liability is sometimes imposed on the basis of society's distributional preferences. See Calabresi and Melamed (1972), p. 1089.

[42] Liability on ship owners would be undesirable if the ship owners' cost of care is more than the reduction in the liability claimants' losses.

[43] In addition to liability, imposing corrective taxes equal to the expected loss may also make a potential injurer to take optimal care. However, if the government cannot observe losses or it is too costly to observe, liability would be a better approach because it creates incentives for victims to report losses. See Shavell (2004), pp. 93–94. See also Pigou (1932).

[44] As mentioned in Chap. 1, 'risk-neutrality' is the opposite of 'risk-aversion'. It is the tendency to view various risks indifferently when their expected value is the same. A risk-averse party may be willing to spend more than the expected liability on care. See the discussion in the next section.

[45] For criticism of limited liability in the nuclear liability context, see Trebilcock, and Winter (1997), p. 218.

The effect of limited liability on deterrence is similar to the effect of inability of a person to pay a judgment amount. Both may lead to under-deterrence. Like the person with limited liability, the person with assets less than a probable judgment amount will not take optimal precaution.[46] Drawing from the above example, if a party with assets worth $500 may cause $1,000 harm to a third party with a probability of 10 % from a faulty brake in the former's car, which would cost the party $90 to fix, he may not fix the brake even though doing so is cost-efficient i.e., less than the expected loss of $100 because the party knows that his expected liability can never be more than $50 due to his limited assets.[47]

3.3.3 Normative Analysis of Limitation of Liability

3.3.3.1 Social Desirability of Limitation of Liability in the Past

Full Liability May Lead a Risk-Averse Person to Over-Deterrence

In the above examples we have assumed that the parties are risk-neutral. This may be justified given the amount of money we used was only $1,000. If the amount is changed from $1,000 to 100,000, most of us may *not* consider the loss merely in its expected value. We will be more afraid to lose $100,000 with probability of 1 % than to lose $10,000 with a probability of 10 %, although the expected loss in both cases is $1,000. This is because most of us are risk averse.

Risk-aversion is our tendency to be more afraid of a large liability or loss even though the chance of such liability or loss is very low. Risk aversion occurs due to the diminishing marginal utility of wealth.[48] As the value of each dollar is more than the next dollar, the utility loss from losing a dollar will be more than the utility gain from an additional dollar. So, the larger the amount of loss, the higher the average value for each lost dollar even when the expected dollar amount for two losses is the same.

Risk aversion is a source of social disutility; it leads either to the avoidance of beneficial activities or to excessive precaution.[49] Both cause social loss. A risk-averse person may decide not to participate in an activity due to the fear of risk even though the expected benefit will outweigh the expected cost. Such forgone benefit is a social loss. On the other hand, excessive precaution happens when a risk-averse person takes more than optimal precaution i.e., takes precaution even though B in the Hand Formula is greater than PL. For example, when investing $100,000 in a

[46] Shavell (1987), pp. 167–168.

[47] Assuming that the party is risk-neutral and there is no risk of personal injury to him. See generally Calabresi (1970), pp. 70–74 and notes 28, 29.

[48] Shavell (2004), p. 258.

[49] See generally Shavell (2004), pp. 260–261.

factory will generate profit of $2,000 per year, a risk averse-party may not do so because of the possibility of $100,000 liability from product defect even though the possibility is just 1 %. The foregone net benefit of $1,000 [i.e., $2,000 profit—possible loss of $1,000 (1 % × $100,000)] is the social loss arising from the problem of risk-aversion.

Alternatively, the risk-averse person may open the factory but invest more than $1,000 in safety measures annually even though the expected loss without those safety measures is only $1,000. Spending more than $1,000 will be again a social waste because more resources are sacrificed to save less. The problem of risk aversion in the pre-insurance era was a probable reason for the low investment by people into businesses in general and shipping in particular. It also caused excessive fear of liability in the minds of ship owners.

Limitation of Liability: A Mechanism Against Over-Deterrence in the Past

In the above context, limitation of liability was a partial solution to the problem of low investment into the shipping sector. By limiting the potential liability of ship owners, legislators removed excessive fear of liability from the minds of ship owners and encouraged investment into this area of business activities. The intention of policy makers was evident in the preamble of the first English legislation on the limitation of ship owners' liability,

> Whereas it is of the greatest consequence and importance to this Kingdom, to promote the increase of the number of ships and vessels, and to prevent any discouragement to merchants and others from being interested and concerned therein. . ..[50]

Although other reasons are also given for the limited liability of ship owners, those reasons are also related to the problem of risk aversion. One such reason for limiting ship owners' liability arising from the negligence, misconduct or theft of the master and crew was the lack of control by ship owners over masters and crew members once the ships left their homeports.[51] If liability arising from such conduct were unlimited, risk-averse people would have been even more reluctant to invest into shipping.

Another reason for the limited liability of ship owners was the protection of local ship owners against foreign competition. This reason has two points. First, the judgment against foreign ship owners could be implemented only by the arrest of their ships, while all the personal assets of a local ship owner were exposed to unlimited liability.[52] Therefore, limiting the liability of local ship owners to the

[50] Preamble to *Responsibility of Ship-owners Act of 1733*; cited in Griggs (1997), p. 370. Similar concern was behind the American *Limitation of Liability Act*. For example, in *Moore v. American Transportation Co*. (1860), 65 U.S. 1 at 39, the court held that the Act was adopted "to promote the building of ships, and to encourage persons engaged in the business of navigation."

[51] See Popp (1993), p. 336; Gilmore and Black (1975), p. 877.

[52] LEG/CONF.5/6 (27 Sept. 1976) in IMO (1983), pp. 112–113.

value of their ships reduced their liability exposure. Second and related, when a country passed the law limiting the liability of ship owners from that country and thus giving them competitive advantage over foreign ship owners, other countries followed the suit to give similar benefits to their own ship owners.[53] Without such law, risk-averse investors would have been even more reluctant to invest into shipping in the face of foreign competition.

3.3.3.2 Social Desirability of Limitation of Liability Today

a. Insurance Now Solves the Problem of Over-Deterrence

The availability of liability insurance offsets the over-deterrence effect of unlimited liability on risk-averse investors. Simply put, insurance addresses the problem of risk-aversion. Insurance makes the position of a risk-averse person *vis-à-vis* potential liability similar to that of a risk-neutral person. Actuarially fair premium for liability insurance will roughly equal the expected liability.[54] For example, insurance premium for $100,000 liability with 1 % probability or $10,000 liability with 10 % chance will be the same i.e., $1,000.

When the investors in our earlier examples can protect themselves against the 1 % risk of $100,000 liability by purchasing insurance at $1,000 premium, they will not hesitate to invest $100,000 in the factory when the annual profit from the factory is $2,000 and will not take excessive precaution by spending more than $1,000. In other words, when liability insurance is widely available, there is no need for limitation of liability to encourage people to invest into shipping and other types of businesses.

Ship owners in fact have virtually unlimited coverage against most of their legal liabilities. The International Group of P&I Clubs, which cover more than 90 % of the world tonnage,[55] provides coverage up to US$7.5 billion per incident.[56] There has been no incident in the group's history requiring coverage even above the reinsurance level, which is now $2 billion.[57] These facts refute the argument of ship owners that there would be shortage of insurance if their liability becomes

[53] Senator Hannibal Hamlin of Maine, who introduced the bill on the American *Limitation of Liability Act*, argued that the new Act would put the American marine interest "upon the same basis as that of England." Cong. Globe, 31st Cong., 2d Session 332 (1851) at 713; cited in Donovan (1979), p. 1015.

[54] Shavell (2004), p. 258 in note 2.

[55] Maritime liability insurance is mainly mutual insurance provided by the ship owners' P&I clubs. For an introduction, see Tilley (1986), p. 261.

[56] See the Pooling Agreement of International Group of P&I Clubs at http://www.igpandi.org/Group+Agreements/The+Pooling+Agreement. Accessed 30 August 2013.

[57] See the Pooling Agreement of International Group of P&I Clubs at http://www.igpandi.org/Group+Agreements/The+Pooling+Agreement. Accessed 30 August 2013; see also Rosaeg (2001), p. 11.

unlimited. In addition, shortage of insurance coverage may be true only in the case of liability for nuclear plants. Yet, some countries adopted law imposing unlimited liability for nuclear damage.[58]

As for the cost of ship owners' liability insurance, it represents only 3.5–4 % of total operating costs.[59] Although the cost may initially increase if there is no cap on liability, unlimited liability may improve ship owners' level of care, which in turn may reduce maritime losses and liability. Reduced liability would ultimately lower the cost of liability insurance.[60] We will discuss in detail the insurance arguments used by ship owners and will refute the arguments in the next section of the chapter.

Insurance May Create Under-Deterrence

Full insurance protection against liability is, however, thought to create under-deterrence. The insured ship owners may tend to be less careful against a loss or liability because they do not have to pay for it directly. This tendency is known as 'moral hazard'.[61] For example, if we modify our earlier examples and assume that the factory owner can reduce the probability of $100,000 loss from 1 to 0.5 % by spending $400 on safety measures, the spending will be optimal as the expected liability will now be only $500 ($100,000 × 0.5 %) instead of $1,000. The net benefit of such measure is $100 [$1,000 (previous expected liability) − ($500 present liability + $400 spending on safety)]. Yet, the factory owner may not spend $400 on safety when s/he has full coverage.

The insurer may, however, induce the owner to do so by offering premium reduction from $1,000 to 500 on the condition that the owner would spend $400 on the particular safety measure. Insurers will make such an offer only if they can observe and verify the precautionary measure taken by the insured.[62] As there are many aspects of precaution or safety measures that insurers cannot observe, an insured may not take optimal precaution in the presence of full insurance coverage even though such precaution will ultimately reduce the premium. This is because the reduction in premium may not be immediate while the cost of precaution is incurred right away.

Moral hazard, if greatly unchecked, may also lead to the 'adverse selection' of insurer. That is, the insurer will attract more and more high-risk individuals leading to the breakdown of insurance pool.[63] By and large, insurers are able to check the

[58] These countries are Switzerland, Germany, and Japan. See Trebilcock and Winter (1997), p. 221.

[59] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976) in IMO (1983), p. 275.

[60] This is also proved from the fact that insurance cost for personal injury and death claim is lower than the cost for property claim due to fewer personal injury and death claims and their lower magnitude despite the fact that the liability limit has always been higher in the personal injury and death claim. See LEG/CONF.5/C.1/SR.20 (Nov. 13, 1976) in IMO (1983), pp. 368–369.

[61] See Abraham (1986), pp. 14–15.

[62] Shavell (2004), p. 262; see also Abraham (1986), p. 15.

[63] Priest (1986–1987), p. 1521; Abraham (1986), p. 15.

problem of moral hazard or under-deterrence in the presence of insurance through various strategies such as offering only partial coverage, including deductibles in insurance policies and differentiating premium rates based on the past loss experience.[64] In other words, the problem of under-deterrence due to full insurance coverage can be managed to a great extent. In the context of maritime liability insurance, P&I Clubs control the problem of 'moral hazard' mainly by differentiating individual ship owners' premium rates based on their claim history, loss experience, size of the fleet and the condition of the entered ships. For example, individual tanker owners' premium varied from 3 to 150 cents per gross ton in 1969 at SKULD, a P&I club.[65]

Corporation: Another Mechanism to Address the Problem of Over-Deterrence

Like the principle of limitation of ship owners' liability, the concept of limited corporate liability was also introduced as a mechanism to encourage investment in socially and economically beneficial activities.[66] It is, therefore, no surprise that both concepts gained recognition in law around the same time.[67] By limiting the liability of investors to the amount of their investment, the concept of limited corporate liability encourages risk-averse people to invest. In fact, limited corporate liability and ship owners' limitation of liability did serve the identical purpose in the past. For example, five people could put part of their assets into shipping business and could limit their liability to the value of the ship. Alternatively, they could, as they still can, form a shipping company with a ship being the only asset of the company. In both the cases, their total liability is the ship or its value.[68]

As ship owners can form corporation, and most of them do so in any way, there is no longer any justification for separate limitation of liability on the basis of individual ship owner's risk aversion.[69] As a corporation, the liability of a shipping company is already limited to the assets of the corporation. Limitation of liability now gives the ship owners in a corporation additional right to further limit the already limited liability of their corporation. A shipping company does not have form one company for all its ships but a separate company for each ship. Forming

[64] See *infra* Sect. 7.3.3.

[65] LEG/CONF.2/C.1/WP. 3 (30 Nov. 1971) in IMCO (1978), p. 242.

[66] In commenting on the US *Limitation of Liability Act* of 1851, Homes said, "The legislators to whom we owe this act argued that, if a merchant embark a portion of his property upon a hazardous venture, it is reasonable that his stake should be confined to what he puts at risk, - *a principle similar to that on which corporations have been so largely created* in America during the last fifty years." Holmes (1949), pp. 6–7 (emphasis added).

[67] Mustill (1993), p. 492.

[68] Limitation proceedings resemble bankruptcy proceedings in many respects. See *The Liverpool (No. 2)* [1963] P. 64, [1960] 3 All ER 307, [1960] 3 WLR 597, [1960] 2 Lloyd's Rep. 66 (CA).

[69] Gilmore and Black (1975), pp. 818 and 822.

one-ship company is a common practice among ship owners. This is to prevent the arrest of other ships under the same ownership in case a liable ship escapes or is unable to limit its liability due to any conduct barring the right of limitation.[70]

To be sure, the problem of under-deterrence also arises from the limited liability of a corporation to its assets. The problem may be serious when a corporation can hide its assets by forming various subsidiary companies. However, in the case of corporations this problem may be partly prevented by requiring minimum asset or compulsory insurance before engaging in an activity.[71] Although compulsory insurance is also a feature of many maritime liability conventions, the insurance is required only up to the maximum liability limit determined using the principle of limitation of liability.

With the availability of well-developed liability insurance market today, even the justification of limited corporate liability can be questioned.[72] This may explain the growing trend towards compulsory insurance with very high limit of liability for many activities undertaken usually by corporations.[73] In most of these activities, compulsory insurance ensures that corporations bear full liability for their actions and thus hiding behind corporate veil becomes useless.

3.4 Limitation of Liability and Insurance Arguments

As indicated at the beginning of the chapter, ship owners use insurance arguments to maintain the privilege of limited liability. Insurance argument has many aspects. The main two aspects are the capacity of insurance market and the reasonable cost of insurance. For example, the International Chamber of Shipping (ICS) stated in a submission to the 1976 Limitation of Liability Conference, "...the main justification of limitation of liability today is the insurability of the risk with its two elements, the availability of cover and economic cost."[74] On the other hand, people who recommend the abolition of limited liability show the presence of well-

[70] See M'Gonigle and Zacher (1979), pp. 149–150. For conducts barring limitation see Article 4 of the LLMC 1976.

[71] Shavell (2004), pp. 231–232.

[72] In a corporation with limited liability, the creditors of the corporation bear the risk of the corporation's liability exceeding its asset. Creditors are thus in a position of insurer for the corporation. On the other hand, if liability were unlimited, the corporation would buy market insurance directly against such liability. See Halpern et al. (1980), pp. 126, 128–129, 138.

[73] Liability insurance is compulsory in nuclear liability and in oil pollution liability. For nuclear conventions, see Convention on Third Party Liability in the Field of Nuclear Energy, 1960, 1041 UNTS 358 (with a supplementary Convention in 1963, 956 UNTS 264) [hereinafter the Paris Convention], Convention on Civil Liability for Nuclear Damage, 1963, 1063 UNTS 265, as amended by its 1997 Protocol, (1997) 36 I.L.M. 1454 [hereinafter the Vienna Convention].

[74] LEG/CONF.5/6 (27 Sept. 1976) in IMO (1983), pp. 112–113.

developed insurance market in support of their position.[75] We will examine here the assertions of both sides.

The first insurance argument for maintaining the principle of limitation is that the insurance market lacks the capacity to provide coverage for unlimited liability. This is a weak argument. Complete lack of insurance coverage is very rare. If it occurs, it is usually temporary. Such a situation may arise in reaction to a sudden increase of liability in a particular field. For example, after the September-11 attack on the US in 2001, there was temporary lack of coverage for terrorism related insurance.[76] Similarly, no insurance was available for certain products in the 1980s due to sudden increase in court awards for product-related injuries.[77] Partial lack of coverage is what ship owners probably mean by the lack of coverage for unlimited liability. The argument is that if maritime liability becomes unlimited or is increased by a large amount, such liability cannot be insured fully in the market.[78]

The second line of insurance argument is the cost of insurance. The argument goes that insurance cost for unlimited liability will be too heavy a burden on ship owners even if the market has the capacity to cover such liability. A related argument is that the current policy of limited liability reduces insurance cost. This in turn keeps the price of goods shipped via sea lower. On the other hand, insurance cost for unlimited liability would cause the shipping charges to increase, which in turn would lead to a higher price for consumer goods.[79]

It is also argued that unlimited liability or a substantial increase in the liability limit would have a shocking effect on the insurance cost for low-tonnage vessels from the developing countries and would increase the transportation cost greatly in those countries.[80] Unfortunately, the argument of unreasonable insurance cost is presented mostly without any evidence in the form of statistical data. When available, the data actually proves the opposite.[81] Despite the lack of evidence, ship owners and the organizations representing them would invariably use these insurance arguments in any discussion about the abolition of limited liability or about any substantial increase in the liability limit.

A ship owner may incur liability either in a contractual situation (e.g., the contract of carriage) or in non-contractual situation such as pollution liability to third parties (e.g., affected fishermen or government entities). In the context of

[75] "An Act [US *Limitation of Liability Act*] which is so vicious in its impact, unconscionable in its results, and outmoded *in an age of institutional protective insurance,* if it cannot be repealed outright, deserves only a narrow, grudging and constrictive construction."(1959) 24 Nacca L.J. 223 at 225; cited in Gilmore and Black (1975), p. 822 note 13d (emphasis added).

[76] Swiss Re (2003), p. 15.

[77] See Priest (1986–1987), p. 1521.

[78] See generally, LEG/CONF.5/6 (27 Sept. 1976) (comments of ICS) in IMO (1983), pp. 112–117.

[79] See generally, LEG/CONF.5/6 (27 Sept. 1976) (comments of ICS) in IMO (1983) at p. 115.

[80] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976) (comments of the Netherlands delegation) in IMO (1983) at p. 274.

[81] For example, regarding the cost of insurance in oil pollution liability see Smets (1983), pp. 31–43.

contractual liability, there is another strand of insurance argument and it relates to cost-efficiency. That is, the party in a contract who can insure the losses/liabilities at a cheaper cost is the party who should bear the losses or liabilities.[82] Again, the determination of this requires actual data on insurance expenses incurred by the parties to a contract. Yet, data is very seldom produced either due to lack of such data or due to the non-disclosure of the available data.

As the ship-owning nations and the developing countries are usually opposed to any increase in the liability of ship owners and as they outnumber the countries proposing higher liability, the maritime liability laws remain heavily biased in favor of ship owners. Mentioned below are some representative samples on how insurance arguments were used to maintain the concept of limited liability in some maritime conventions.

3.4.1 Insurance Arguments in Specific Maritime Liability Conventions

As mentioned at the beginning of the chapter, a common feature of maritime liability conventions is that they all contain the concept of limited liability. The above insurance arguments were used to support the concept of limited liability in almost every area of maritime law. In this section we will discuss the provisions on limited liability from some of the maritime conventions and analyze the insurance arguments made during the adoption of or the subsequent amendments to these conventions. We will begin with general maritime liability convention and then move to the conventions on specific areas of maritime liability.

3.4.1.1 General Liability Conventions[83]

The conventions on general limitation of liability, also known as the conventions on global limitation, apply to all liability claims against ship owners except those related to salvage, oil pollution when falls under the CLC, nuclear damage and crew's contracts in certain circumstance.[84] The latest convention on general limitation of liability is the LLMC 1976. The convention was adopted for two reasons: first, to increase the limit of liability as the monetary value of the liability limit under the 1957 Convention was greatly eroded due to inflation and, second, to make the breaking of the liability limit more difficult. This is because the test of 'fault or

[82] See Sturley (1993), p. 119.

[83] Although there are three conventions on general liability, we will confine our discussion mainly to the latest one i.e., the LLMC 1976. The conventions are: (a) 1924 Liability Convention, (b) 1957 Convention, and (c) LLMC 1976.

[84] See article 3 of the LLMC 1976.

privity' of the owner to break the limit under the 1957 Convention was liberally interpreted by the courts to deprive ship owners of the right to limit liability.[85]

With regard to the first reason, most countries recognized the need for an increase above the 1957 Convention's limit and wanted the new limit to be 'as high as the cost of insurance and the market capacity allow.'[86] With regard to the second reason, article 4 of the new convention made the limitation of liability almost unbreakable.[87] The stated justification for the new test to break the limit was that it would create certainty in the expected liability and certainty would reduce litigation. Reduced litigation would in turn lower insurance costs.[88] As can be seen here, the cost of insurance was the crucial factor in both of these reasons.

As for the liability limit, during the negotiation of the LLMC 1976 the countries realized that doubling the liability limit under the 1957 Convention would simply restore its value in 1976 without any real increase.[89] Despite this realization, the majority of them were opposed to any new limit more than double the amount under the 1957 Convention. Their opposition was based again on unreasonable insurance cost and the lack of insurance market capacity. However, they presented no evidence to demonstrate the actual insurance market capacity or what would be the reasonable cost of insurance.

On the other hand, countries proposing for a liability limit more than double the 1957 Convention's limit produced some evidence on the capacity and the cost of insurance. For example, the US delegate presented evidence to prove that there was no shortage of capacity in the insurance market to meet the liability insurance needs of ship owners. They also proved that the insurance cost would still be very reasonable even if the new convention adopted a liability limit more than double the limit under the 1957 Convention.[90] They showed that some American vessels at that time carried liability insurance above $100 million at commercially acceptable rates. The US delegate further argued that doubling the 1957 Convention's limit would simply adjust for inflation; much higher liability limit was needed to justify the new test to break the liability limit under article 4 of the new convention.[91]

Similarly, the Argentinean delegation presented evidence on the cost of insurance. They showed that doubling the existing liability limit would increase the current operating cost of ship owners by less than 0.6–0.8 %. This is because insurance cost represented only 7–8 % of the total operating cost of ship owners

[85] Griggs et al. (2005), p. 3.

[86] LEG/CONF.5/4 (27 Sept. 1976) and LEG/CONF.5/4 (27 Oct. 1976) (New Zealand) in IMO (1983), pp. 72 and 107 respectively.

[87] Canada opposed the unbreakable limit as this would diminish the incentives of ship owners to take care especially when there is no trade-off by increasing the limit substantially. LEG/CONF.5/C.1/SR.8 (5 Nov. 1976) in IMO (1983) at p. 269.

[88] LEG/CONF.5/4 (27 Sept. 1976) (Norway); LEG/CONF.5/6 (27 Sept. 1976) (International Chamber of Shipping) in IMO (1983), pp. 70–73 and 113–114 respectively.

[89] LEG/CONF.5/4 (27 Sept. 1976) (Norway) in IMO (1983) at pp. 76–77.

[90] LEG/CONF.5/C.1/WP.32 (3 Nov. 1976) (USA) in IMO (1983) at p. 159.

[91] LEG/CONF.5/C.1/WP.32 (3 Nov. 1976) (USA) in IMO (1983) at p. 160.

at that time.[92] Liability insurance cost was 50 % of the total insurance cost i.e., 3.5–4 % of the operating cost. Doubling the liability limit would not double the cost of liability insurance because the additional liability under the new limit would not be incurred in every incident of liability but only in few cases of liability above the existing limit. Insurers can protect their exposure to higher liability under the new limit by purchasing reinsurance. The reinsurance cost of the ship owners' liability insurers i.e., P&I clubs accounts for only 15–20 % of the total liability insurance costs (i.e. 0.6–0.8 % of the total operating cost).[93]

As for the actual amount of liability, the US delegation proposed that the liability limit for personal injury and death claims should be between US$1,500 and 1,900 per ton for the first 10,000 tons (first tier) and thereafter US$350–400 per ton (second tier). For property damage, they proposed US$600–700 for the first tier and US$100–150 for the second tier.[94] On the other hand, Sweden and Norway (two ship-owning nations) proposed US$500 per ton up to 30,000 tons and US$250 per ton above 30,000 tons for personal injury and death claims. As for the property claims, their recommended amount was US$300 and 150 per ton for the first and second tiers respectively.[95]

India suggested a three-tier system with US$300 (personal injury/death) and US $100 (property claims) per ton up to 30,000 tons, US$200 and 75 for each additional ton above 30,000, and US$100 and 50 for each ton above 70,000 tons for personal injury/death and property claims respectively.[96] Although Canada did not propose any specific liability limit, the Canadian delegation wanted the limit to be as high as possible in light of the insurance market's capacity.[97]

The conference adopted a maximum liability for any ship up to 500 tons up to US$400,000 for personal injury/death claims and US$200,000 for property claims. From 501 to 30,000 tons, the limit was US$600 and 200 per ton for personal injury/death and property claims respectively. Between 30,001 and 70,000 tons the maximum per ton liability was US$300 for personal injury/death claims and US $150 per ton for property claims. For each additional ton above 70,000 the limit was US$200 and 100 for personal injury/death and property claims respectively.[98] These limits seem to be a compromise. They are based neither on the reasonable cost of insurance nor on the capacity of insurance market.

The adopted liability limits were a little more than double the limit under the 1957 Convention for ships with 30,000 tons or below. As such, the new limit just

[92] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976) (USA) in IMO (1983) at p. 275.

[93] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976) (USA) in IMO (1983) at p. 275.

[94] LEG/CONF.5/C.1/WP.58 (8 Nov. 1976) (USA) in IMO (1983) at p. 184.

[95] LEG/CONF.5/C.1/WP.35 (3 Nov. 1976) (USA) in IMO (1983) at pp. 162–163.

[96] LEG/CONF.5/C.1/SR.7 (4 Nov. 1976) (USA) in IMO (1983) at p. 255.

[97] See LEG/CONF.5/C.1/SR. 1 (1 Nov. 1976) (USA) in IMO (1983) at p. 210.

[98] LEG/CONF.5/C.1/WP.82 (15 Nov. 1976) (USA) in IMO (1983) at pp. 203–204. The figures were initially adopted in the US dollars and later converted to SDR (Special Drawing Right), the monetary unit of the International Monetary Fund (IMF).

restored the monetary value of the amount under the 1957 Convention in 1976, the year the new convention was adopted, for these smaller ships. As for the larger ships, the monetary value of their liability limit was actually reduced from the 1957 Convention's limit because of the 'tapering system' under the new convention. Under this system, the higher the tonnage of a ship the lower is its average per ton liability limit. On the other hand, under the 1957 Convention the ships of all sizes have a single per ton liability limit.[99]

In order to impose the same level of liability as that of the1957 Convention in terms of value, the liability limit under the LLMC 1976 needed to be US$600 per ton for personal injury/death claims and US$200 per ton for property claims for all sizes of ships.[100] Yet, because of the tapering system under the LLMC 1976 any ship above 30,000 tons would be able to limit its liability for each additional ton to half that amount (i.e. US$300 and 150 respectively).[101] The tapering system thus favours larger ships although the danger presented by a ship does not necessarily decrease in proportion to its tonnage increase.[102] It is worth mentioning here that the 1996 protocol[103] to the LLMC 1976 increased the above liability limit by 2.4 times.[104] The protocol came into force on 13 May 2004.[105]

Higher liability limit for personal injury or death claims was justified on the ground that people suffering from injuries and death would be less likely to be insured than the owners of lost or damaged cargo/property.[106] Here again we see the consideration of insurance in designing the liability law. Thus, there are two separate limitation funds: one for property claims and another for personal injury or death claims. However, if the fund for personal injury/death claims is exhausted, the claimants for personal injury/death can share the fund for property claims pro rata with property claimants.[107] The opposite arrangements were not adopted again on the ground of possible increase in insurance cost.[108]

To elaborate, insurance costs for the possible claims for personal injury and death are usually less than insurance costs for property claims fund despite the fact

[99] Article 3(1) (a)–(c).

[100] This figure is taken from the proposal of the Federal Republic of Germany. It proposed one limit per ton regardless of the size of the ship. The figure is approximately double the 1957 Convention's limit. See LEG/CONF.5/C.1/SR.8 (5 Nov. 1976) (USA) in IMO (1983) at p. 265.

[101] See the above discussion.

[102] LEG/CONF.5/C.1/SR.8 (5 Nov. 1976); IMO (1983), p. 265.

[103] See 1996 Protocol to the LLMC 1976; LEG/CONF.10/DC.2 (02 May 1996).

[104] Wetterstein (1996/1997), p. 608 note 41.

[105] See http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[106] LEG/CONF.5/6 (27 Sept. 1976) (ICS), IMO (1983), p. 114; LEG/CONF.5/C.1/SR.8 (5 Nov. 1976); IMO (1983), p. 266.

[107] Article 6.2 of the LLMC 1976.

[108] A proposal for spill-over from unused personal injury/death claim fund to property claim fund when property claims exceed the limit of the property fund was rejected. LEG/CONF.5/C.1/WP.76 (proposal by Australia, Italy and Norway), IMO (1983), p. 135.

that the liability limit is higher for personal injury and death claims under the liability conventions. This is due to the fact that there are fewer claims made for personal injury/death than for property loss.[109] If the unused amount from the fund established for personal injury/death claims were used for property claims in case the fund for property claims is insufficient to meet all property claims, this may require frequent use of the personal injury/death claim fund for property claims. Such use would cause substantial increase in the cost of insurance for this fund.[110] Here again we see the cost of insurance as the reason for not allowing any spill-over from the personal injury/death fund to the uncompensated property claims.

It is evident from the above discussion that the liability limits were adopted not based on the capacity of insurance market but on the consideration of ship owners' insurance cost. Even though the stated reason for lower liability limit was to keep the insurance cost at a reasonable rate, in reality the goal seems to be to keep the cost as low as possible. Reasonable insurance cost implies not too burdensome costs on ship owners. Even if the liability limit were to increase by many folds, the cost burden for liability insurance would not be too heavy on ship owners. It was shown during the negotiation of the LLMC 1976 that if the liability limit were three/four times higher than that of the 1957 Convention, such liability would have increased the operating cost of ship owners only by 0.05–1 %.[111]

3.4.1.2 Cargo Liability Conventions[112]

The liability of ship owners for cargo damage or loss is subject to the above mentioned limitation of liability.[113] However, the liability for cargo loss/damage can be further reduced by a package/weight limitation under the separate conventions on cargo liability.[114] In other words, even when a ship owner's liability for cargo loss is less than the limit mentioned under the general conventions on

[109] LEG/CONF.5/C.1/SR 20 (13 Nov. 1976) (proposal by Australia, Italy and Norway), IMO (1983) at pp. 368–372. This fact incidentally proves that very high or unlimited liability will not necessarily lead to the increased insurance cost if the number of liability incidents is reduced following the increase of liability or the abolition of limitation.

[110] IMO (1983), p. 369.

[111] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976), IMO (1983), pp. 275–276.

[112] Cargo liability conventions are: International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, Aug. 25, 1924, 51 Stat. 233, 120 L.N.T.S. 155; [hereinafter the *Hague Rules*] and its 1968 Protocol, 2 U.N. Register of Texts ch. 2, at 180 [hereinafter together the *Hague-Visby Rules*]; the United Nations Convention on the Carriage of Goods by Sea, Hamburg, Mar. 31, 1978, U.N. Doc. A/Conf. 89/5, (1978) 17 I.L.M. 608 [hereinafter the *Hamburg Rules*]; and the Convention on Contracts for International Carriage of Goods Wholly or Partly by Sea, Dec. 11, 2008, G.A. Res. 63/122, U.N. Doc. A/RES/63/122 [hereinafter the *Rotterdam Rules*].

[113] See article 2.1(a) and (b) of LLMC 1976.

[114] See Griggs et al. (2005), pp. 134–136. Limits under cargo liability conventions are supposed to be the minimum and limits under the general liability convention are the maximum limit.

limitation of liability, such liability may be still more than the package/weight limit under the cargo liability conventions. In such cases, the liability would be reduced using the package/weight limitation unless the cargo owner declares the full value of the cargo on the shipping document.[115] On the other hand, if the package/weight formula gives a higher liability limit than the limit under the general conventions, the liability would be reduced to the general conventions' limit. Cargo owners thus face double limitations.

Despite the overarching limitation of liability under the general conventions like the LLMC 1976, ship owners still oppose any increase in the package/weight-based limit under the cargo conventions, again using the insurance arguments. For example, when the *Hamburg Rules* were adopted, *inter alia*, to increase the package/weight-based liability limit, ship owners warned that the insurance cost would become substantial if the new convention enters into force.

In the context of cargo liability, both cargo owners and ship owners usually carry insurance against their respective losses and liabilities. In this context there is a different insurance argument. It involves the minimization of overall insurance cost.[116] Both sides agree that insurance costs can be reduced by three ways: (a) by avoiding the administrative costs of 'double insurance' and shifting the losses to only one party, (b) by removing the ambiguity in legal provisions so as to reduce the number of litigations and (c) by improving care level in order to reduce the number of accidents. However, they disagree on how to implement these strategies in order to minimize the insurance costs for cargo loss or liability.

With regard to the reduction of administrative/transaction cost, both ship owners and cargo owners want to avoid the costs of 'double insurance' i.e., the purchase of insurance by both cargo owners and ship owners for the same cargo. This can be done by shifting the burden of cargo losses during the transportation to either ship owners or cargo owners so that only one insurance policy is bought with regard to the same cargo. There are arguments and counter-arguments on who should bear all cargo losses during transportation.

While cargo owners think that shifting all liability for cargo losses to ship owners would save the cost of unnecessary double insurance, ship owners disagree. According to ship owners, even if all the liability for cargo loss during transportation were fully shifted to them, cargo owners would still carry cargo insurance for various reasons. The reasons include convenience, direct and fast claim settlement, the certainty of payment (in case the liable ship owner is bankrupt) and one stop coverage for all cargo claims including the ones outside the ship.[117] Ship owners thus argue that since cargo owners would carry insurance any way,[118] leaving the losses to cargo owners would save the cost of double insurance.

[115] Sturley (1993), p. 130.

[116] Sturley (1993) at pp. 120–121.

[117] Sturley (1993), pp. 143–144.

[118] Cargo owners need coverage even for losses which may not be limited by package/weight formula because liability will be limited by the ship owners' global limitation.

Same arguments could be used against shifting all the cargo losses to cargo owners. For example, even if the burden of cargo loss is completely borne by cargo owners and their insurers, ship owners would still carry liability insurance against other types of maritime claims such as collision claims, claims for oil pollution damage etc. So, there may not be any real savings in administrative costs from shifting cargo losses completely to one side because both sides would still buy insurance.

Of course, shifting all cargo losses to one side would increase the insurance costs of that side and reduce the insurance costs of the other side. For example, if all the liability for cargo loss is shifted to ship owners, cargo insurance premium would become substantially less due to cargo insurers' right of subrogation against ship owners or their liability insurers.[119] The same would be true for ship owners and their insurance costs if they bear no liability for cargo losses. This gives rise to another question whether the reduction of insurance cost for one side is more than the increase in insurance cost for the other side following the total shift of loss or liability to just one side. If so, this is an efficient allocation of losses or liability.

Again, there are opposite assertions on possible savings in insurance costs by shifting all cargo losses to just one side (i.e., who could buy the insurance against cargo losses at a cheaper cost). Both sides agree that the side which can insure the losses at a lower cost should bear the losses. Predictably, ship owners assert that insurance by cargo owners would be cheaper for two reasons. First, as first-party insurance cargo insurance involves only one insurer and direct payment. On the other hand, in the case of liability insurance for cargo loss two insurers (cargo insurer and liability insurer) are involved and this would increase the transaction costs.[120] Second, cargo owners can more easily and more directly pass the cost of cargo insurance to consumers in the price of the products and this again would involve less transaction cost.

On the other hand, cargo owners argue that liability insurance through P&I clubs (the usual liability insurers for ship owners) is less expensive because the clubs as mutual insurance companies do not have to make any profits on insurance services they provide to their member ship owners.[121] Although both sides have valid arguments on this issue, their arguments cannot be corroborated by actual evidence on their respective insurance costs for cargo loss or liability. Without empirical evidence, their arguments do not show conclusively which side could insurance against cargo losses at a cheaper cost.[122]

There are various reasons for the lack of empirical evidence. First, it is hard to determine the insurance cost for cargo losses alone because a ship owner's liability insurance (P&I insurance) covers many other types of liability.[123] Second,

[119] Hellawell (1968), p. 212.
[120] Sturley (1993), p. 145.
[121] Sturley (1993) at 145.
[122] Sturley (1993) at pp. 148–149.
[123] Rosaeg (2001), p. 11.

insurance cost varies from insured to insured based on many factors such as the claim history of an insured, the size of the business and the area of trading.[124] Finally, even where such evidence is available, insurers may not want to share the information with outsiders.[125]

Insurance costs can be lowered also by reducing cargo-related litigation. One possible way to achieve this is to remove ambiguities from the law on cargo liability. There are different conventions on cargo liability: *Hague Rules*, *Hamburg Rules*, and *Rotterdam Rules*. People supporting a specific convention argue that the provisions of that convention are clearer than those of others and thus would require less judicial intervention.[126] Others may disagree. For example, during the negotiation of the *Hamburg Rules* some argued that the new rules would clarify certain ambiguous issues in cargo liability. Ship owners, however, thought the new rules would create more ambiguity. As the analysis of both sides was based on some selective provisions and not on the whole convention, their analysis was one-sided.[127]

Finally, insurance costs can also be reduced by taking proper care of the cargo during transportation. While both ship owners and cargo owners can take measures for the safe arrival of the cargo, ship owners have greater role to play in this regard especially when the cargo is in transit. To improve care or to deter from negligence is the main goal of liability law. Most of the insurance arguments discussed above ignore this goal of liability law. Liability should be imposed on the parties who can take care. This would lead to the reduction of accidents and will ultimately bring down the cost of insurance.[128]

In order to deter from negligence, a liable party should bear the full liability (i.e., unlimited liability) even if the liability claimant is fully insured.[129] Proper deterrence cannot be achieved in the current structure of cargo liability law because of the double limitation under the LLMC 1976 and the cargo liability conventions. Although the deterrent effect of liability may also be affected by some other factors,[130] limitation of liability aggravates this problem.

[124] Rosaeg (2001), p. 11.

[125] Sweeney (1975–1976), p. 108.

[126] Sturley (1993), pp. 133–143.

[127] Sturley (1993) at pp. 141–142.

[128] Sturley (1993) at p. 121.

[129] Shavell (1987), pp. 235–236.

[130] Such factors include lack of knowledge of a potential liable party about the magnitude of loss, the probability of such loss both with and without precautions, the cost of precautions or lack of knowledge of liability rules and absence of personal responsibility of crews for the loss; Sturley (1993), pp. 125–133.

3.4.1.3 Convention on Passengers' Liability

As the case with cargo liability, the general conventions on limitation of liability such as LLMC 1976 also apply to the liability claims of passengers. However, the liability limit for passengers' claims is higher than that for non-passengers.[131] There is a separate convention on the liability of passengers, the PAL 1974.[132] The liability limit for passengers' claims under the LLMC 1976 was set at the same amount as that existed under the PAL 1974.

Despite the attempt to keep the liability limit for passengers' claims same both under the PAL 1974 and the LLMC 1976, at times different limits may exist due to later amendments to the conventions. This may happen either because one of these conventions is amended without any corresponding amendment in the other or when similar amendments to the both conventions do not enter into force at the same time. For example, the 1996 Protocol to the LLMC 1976 increased the limit from SDR 46,666 to 175,000 per passenger.[133] This was in response to a similar increase by the 1990 Protocol to the PAL 1974. However, while the 1996 Protocol to the LLMC came into force,[134] the 1990 Protocol to the PAL 1974 was abandoned. As a result, the LLMC 1976 as amended provides now a higher per passenger liability than the PAL 1974. Unfortunately, the passengers cannot take advantage of the higher limit under the amended LLMC 1976 as they are allowed to make their claims only under the PAL 1974.[135]

On the other hand, in 2002 a new Protocol to the PAL 1974 provides much higher limit of liability[136] than the limit even under the amended LLMC 1976. The higher limit under the 2002 amendment to the PAL 1974 would not be of any benefit to passengers because ship owners would still be able to take advantage of the lower limit under the amended LLMC 1976.[137] Like cargo owners, passengers too face double limitation. The only way passengers would benefit from this high limit under the 2002 amendment to the PAL 1974 is to have a similar increase under the LLMC 1976 by a new amendment.

Ship owners used their insurance arguments also against the increased liability limit for passengers' claims during the adoption of the LLMC 1976, the PAL 1974, and its Protocols. For example, when the LLMC 1976 was adopted, the total liability of a passenger ship was capped at SDR 25 million in addition to per

[131] Articles 6.1(a) and 7 of the LLMC 1976 for liability limit of non-passengers and passengers respectively.

[132] Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea, 1974; (1975) 14 ILM 945 [hereinafter PAL 1974].

[133] See Article 4 of the 1996 Protocol to LLMC 1996.

[134] The Protocol came into force on May 13, 2004. See the status of the IMO Conventions at IMO website: http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[135] Article 14 of the PAL 1974.

[136] SDR 250,000–400,000 per passenger; Article 4.2 of the 2002 Protocol.

[137] Article 19 of PAL 1974. See also Griggs et al. (2005), pp. 52–55 and 109.

passenger's limit of SDR 46,666 under the PAL 1974.[138] This was done partly in response to the suggested capacity of insurance market and the reasonable cost of insurance.[139] Similar insurance arguments were also made during the negotiation of the PAL 1974 and its Protocols without the presentation of any concrete evidence.[140]

As in the case with the general liability limit, the evidence actually showed that substantial increase in the liability limit for passenger claims would raise the insurance cost only by a small amount. For example, even the insurance industry admitted that an increase in the passenger liability limit from SDR 175,000 to 350,000 per passenger would raise the insurance cost per passenger for each operating day from US$0.88 to 1.10 i.e. an increase of only 22 cents.[141]

Passenger claims are becoming increasingly important with regard to cruise ships. As many American citizens increasingly use these ships, the lower liability limit under the PAL 1974 was one of the causes that the US did not sign the convention. During the negotiation of the LLMC 1976,[142] the US delegation proposed that the liability limit on passengers' claims should be increased at least to the same limit as that under the Warsaw Convention[143] on an airline's liability for its passengers.[144] The limit under Warsaw Convention was SDR 100,000 per passenger during the negotiation of the LLMC 1976.[145] The US delegation argued that there was no justified reason for lower liability limit on passenger claims in marine transport than that existed in aviation.[146]

As repeated at different parts of the book, limitation of liability affects the very purposes of liability i.e., deterrence and compensation. Although in the case of cargo liability the absence of full compensation may not hurt cargo owners as they are usually insured against their cargo losses, personal injury claimants (both passengers and non-passengers) are less likely than cargo owners to have insurance coverage for their personal injury and death. The delegates to the 1976 Liability Conference were aware of this fact.[147] Yet, they failed to include unlimited liability

[138] Article 7 of PAL 1974. It was 700,000 francs which was converted to SDR 46,666 by Article II of the 1976 Protocol, (1977)16 I.L.M. 625.

[139] LEG/CONF.5/6 (27 Sept. 1976) (ICS) LEG/CONF.5/C.1/SR.11 (8 Nov. 1976) (comments of Norway delegate, Mr. Selvig), in IMO (1983), pp. 115 and 286 respectively.

[140] Rosaeg (2001), p. 25.

[141] Rosaeg (2001) at p. 11.

[142] Article 7 of the LLMC 1976 contains a limit on per passenger claim and a cap on the total liability of ship owners for all passengers' claims together.

[143] Convention for the Unification of Certain Rules Relating to International Transportation by Air, 1929, 137 L.N.T.S. II.

[144] LEG/CONF.5/C.1/WP.33 (3 Nov. 1976) (USA), in IMO (1983), p. 161.

[145] LEG/CONF.5/C.1/SR.11 (8 Nov. 1976) (USA) in IMO (1983) at p. 286.

[146] LEG/CONF.5/C.1/SR.11 (8 Nov. 1976) (USA) in IMO (1983) at p. 286.

[147] LEG/CONF.5/6 (27 Sept. 1976) (ICS); LEG/CONF.5/C.1/SR.11 (8 Nov. 1976) (USA) in IMO (1983) at p. 114.

for the personal claims of passengers and non-passengers in the convention they adopted.

3.4.1.4 Conventions on Oil Pollution Liability

Until 1969 oil pollution liability was governed by the general maritime liability conventions. Following the *Torrey Canyon* incident in 1967, the inadequacy of liability limit under the general conventions to cover the cleanup cost and pollution damage from an oil spill became evident.[148] As a result, the IMO adopted a separate convention for oil pollution liability, Convention on Civil Liability for Oil Pollution Damage (hereinafter 'the CLC').[149] A second convention, known as the Fund Convention, was adopted in 1971 to establish the International Oil Pollution Compensation (IOPC) Fund for additional compensation. With subsequent amendments to these conventions,[150] maximum compensation under them could be up to SDR 203 million.[151] Also, a third tier of compensation up to SDR 750 million is now available through a Supplementary Fund. The protocol creating the Supplementary Fund came into effect in March, 2005.[152]

Oil pollution liability conventions now provide adequate compensation for most of the oil pollution incidents. However, during the adoption of the CLC ship owners strongly opposed to any additional liability for oil pollution above the limit under the general liability conventions.[153] Again, their arguments mainly revolved around the high cost of insurance and the lack of insurance market capacity. As usual, there was not much evidence to support these arguments.

After long negotiation, the liability limit for oil pollution was set at 2,000 francs (US$134) per ton,[154] double the limit under the then existing general limitation of

[148] General limitation of liability at that time was governed by the 1957 Convention with the liability limit of 1,000 gold francs ($67) per limitation ton for property damage. However, as the US was not party to this convention and the liability limit was based on the value of the ship after the damage, a US District Court held the liability to be only $50, the value of the single salvaged lifeboat. The cleanup cost the British and French government about $13 million. See *In re Barracuda Tanker Corp*., 228 (S.D.N.Y.1960); Kiern (2000), p. 503.

[149] (1970) 9 I.L.M. 45; 973 UNTS 3.

[150] See Chap. 6 for various amendments.

[151] See article V.1 of the CLC and article 4.4 of the Fund Convention. Under article V.1 of the CLC the calculation is based on the tonnage of the ships and ship owners' maximum liability limit is SDR 89.77 million. However, for owners of ships with 5,000 gross register ton (grt) or less, the maximum is SDR 4.51 million. Any ship above 5,000 grt may incur additional liability of SDR 631 per ton, but the total could not exceed the SDR 89.77 million. It is noteworthy that one grt is equivalent to 100 cubic feet of enclosed space in a ship.

[152] See the status of Conventions at IMO webpage: http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[153] See generally M'Gonigle and Zacher (1979), Chap. 5 and Appendix II.

[154] Article V.1 of the CLC 1969.

liability law i.e., the 1957 Convention. The total liability was capped at 210 million francs ($14 million).[155] Arguing the lack of insurance market capacity, ship owners and maritime states refused to accept the new convention unless the additional liability[156] on ship owners under the new convention was reimbursed by oil companies.[157] Ship owners' insistence led to the adoption of a resolution to the effect that the future Fund Convention would contain provisions on the issue of reimbursement.

During the negotiation of the Fund Convention in 1971, the oil companies refused to provide any reimbursement because the available evidence at that time showed that the insurance cost for oil pollution liability was not as high as argued by ship owners during the adoption of the CLC in 1969. The evidence came from the experience of TOVALOP,[158] a voluntary agreement.[159] Under TOVALOP, ship owners agreed to bear the liability for oil pollution up to about $115 (1,725 francs) per ton until the entry into force of the CLC. Insurance costs for TOVALOP were only extra 7.5 cents per gross ton in 1970 and 2.5 cents in 1971.

Oil companies used this above information on insurance costs to argue that insurance could be obtained for the additional liability at a reasonable cost.[160] They argued further that the need for reimbursement for extra liability under the CLC 1969 ceased to exist as ship owners already factored the cost of TOVALOP into the charter hire or freight rate.[161] Ship owners, on the other hand, showed that the P&I premium for oil tankers increased from 2–3 cents per gross ton in 1969 to 29 cents in 1972.[162] However, this increase was partially due to inflation and the past adverse claim experience.[163] A compromise was reached at the end. The oil industry agreed to reimburse ship owners through the newly created IOPC Fund for any liability exceeding 1,500 francs ($100) per ton or any liability in excess of 125 million francs ($10 million) in total.[164]

---

[155] Article V.1 of the CLC 1969; see also LEG/CONF.2/5 (21 Oct. 1971) (memorandum submitted by the ICS), IMCO (1978), p. 199.

[156] I.e., 1,000 francs (2,000 francs under the CLC − 1,000 francs under the 1957 Convention).

[157] IMCO (1973), Document LEG/CONF/C.2/SR17, IMO, 727; cited in Faure and Hui (2005), p. 19 note 44.

[158] Tanker Owners' Voluntary Agreement on Liability for Oil Pollution; (1969) 8 I.L.M. 497. See generally Becker (1974), p. 609.

[159] LEG/CONF.2/5 (21 Oct. 1971) (comments of the OCIMF i.e. Oil Companies International Maritime Forum), IMCO (1978), pp. 191–192.

[160] LEG/CONF.2/5 (21 Oct. 1971) (comments of the OCIMF i.e. Oil Companies International Maritime Forum), IMCO (1978), pp. 191–192.

[161] Per ton coverage under the TOVALOP was about 1,725 francs per ton and the required coverage under 1969 Convention was 2,000 francs, leaving the coverage gap of only 275 francs or $19 per ton.

[162] LEG/CONF.2/C.1/WP.3 (30 Nov. 1971) (information provided by the managing director of SKULD, who was also an advisor to Norwegian delegation), IMCO (1978), pp. 241–243.

[163] LEG/CONF.2/C.1/WP.14 (2 Dec. 1971) (information paper submitted by the OCIMF), IMCO (1978) at pp. 254–255.

[164] Article 5 (1) of the Fund Convention.

As the victims of oil pollution are not usually insured,[165] the compensation of victims is the main focus of the oil pollution conventions.[166] During the negotiation of the CLC in 1969, the participating states realized that even the increased limit under the CLC would not be enough to provide adequate compensation in many cases of oil pollution. Thus, the 1969 resolution also contained that oil companies would provide additional compensation to pollution victims. The 1971 Fund Convention was adopted to implement the 1969 resolution. The convention created the IOPC Fund not only for reimbursement to ship owners but also for additional compensation to the victims of oil pollution up to 450 million francs (SDR 30 million) per incident.[167]

The capacity of insurance market was one of the main factors in setting both the ceiling of ship owners' liability and the starting point of the Fund's involvement. The drafters of the Fund Convention agreed in principle that the Fund's compensation would start from the point at which the capacity of insurance market is exhausted for ship owners' liability.[168] As the contributions to the Fund would come directly from the levies on oil companies on the basis of oil received by them via sea, the Fund does not have to buy insurance from the market. In reality the maximum liability of ship owners was set at a limit which does not reflect the actual capacity of insurance market[169] despite the repeated assertions of insurance market capacity as the basis for the liability limit of ship owners.[170]

Like the determination of liability limit, other issues were also influenced by insurance considerations.[171] For example, as the P&I clubs offer full liability coverage mainly to ship owners,[172] it was thought desirable that ship owners alone should be responsible for oil pollution liability. In itself this policy of channeling liability to ship owners alone would not cause any problem to oil pollution victims if they would get full compensation from the liable ship owners. As the liability of ship owners may fall short of the losses suffered by oil pollution victims, the policy deprives the victims from additional sources of compensation.[173]

---

[165] LEG/CONF.5/C.1/SR.8 (5 Nov. 1976); IMO (1983), p. 266. However, sometimes only the governments may incur expenses after an incident of oil pollution.

[166] This is also evident from the preamble to the conventions. The preamble of both conventions provides, "The State Parties to the present Convention. . .. convinced of the need to ensure that *adequate compensation* is available. . .." (Emphasis added).

[167] Art. 4.4(b) of the Fund Convention, 1971.

[168] Rosaeg (2001), p. 13.

[169] Rosaeg (2001), pp. 13–17.

[170] See Tan (2006), p. 295: "To bolster their case, the ship-owning interests argued that the prevailing world insurance market capacity would be insufficient to meet the multitude of claims which strict liability and increased limitation could be expected to unleash."

[171] Rosaeg (2001), pp. 17–19.

[172] Although charterers also can subscribe to P&I clubs, there are restrictions on the coverage charterers can obtain from the clubs. See generally Hazelwood (2000), pp. 230–233.

[173] Faure and Hui (2005), pp. 8–9.

In addition, when a ship owner is insolvent and its insurance policy is voided due to wilful misconduct, the oil pollution victims would not be able to bring suits against other potential liable parties.[174] To the extent the channelling of liability to ship owners alone exonerates other potential liable parties who could take care, the incentive effect of liability rule is weakened.[175] The argument in favour of channelling is that it helps the victims to easily identify the liable party. Its disadvantages probably outweigh its advantages. For the purposes of compensation and deterrence, joint and several liability is a better alternative than channelling.[176]

With a compensation level of SDR 750 (US$1.13 billion) per incident, the oil pollution liability regime came a long way to provide adequate compensation to the victims of oil pollution. However, half of the compensation money comes from the oil industry and the consumers of oil due to the limited liability of ship owners.[177] To the extent ship owners do not have to bear the liability for any negligently-caused oil pollution, the incentive effect of liability law is compromised.

3.4.1.5 Convention on the Liability for Bunker Oil Pollution

The oil pollution liability regime just discussed covers the cases of oil pollution mainly from oil *tankers* including from their bunkers. It does not compensate for any oil pollution from the bunkers of *non-tankers*. To compensate for the latter type of oil pollution, the Bunkers Convention[178] was adopted in 2001.[179]

Unlike other liability conventions, the Bunkers Convention does not provide any separate limit of liability for oil pollution from the bunkers of non-oil-carrying ships (non-tankers). Instead, a ship owner's liability for such oil pollution would be determined under general maritime law. Thus, ship owners' right to limit liability under the general limitation of liability conventions such as the LLMC 1976 is not affected by the Bunkers Convention.[180] A state party to both the Bunkers Convention and the LLMC 1976 cannot impose higher liability for oil pollution from

[174] Rosaeg (2001), pp. 17–19.

[175] Rosaeg (2001), pp. 17–19.

[176] Rosaeg (2001), pp. 17–19.

[177] 92 FUND/WGR.3/8/3, Annex at page 7; available at the IOPC Fund website at http://documentservices.iopcfunds.org/. Accessed 31 August 2013.

[178] For the official version of the convention, see LEG/CONF 12/19. Bunker Convention entered into force on 21 November 2008; see at http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[179] Canada was among the early initiators of the Bunker Convention. In 1996, Canada submitted a joint statement with Australia, Finland, Norway, South Africa, Sweden and the UK to the IMO highlighting the need for a Convention on oil pollution from bunkers of non-tankers as half of the total oil spills arises from this source. See http://www.imo.org/Newsroom/contents.asp?topic_id=67&doc_id=457. Accessed 11 March 2009.

[180] Article 6 of Bunkers Convention.

bunkers than the limit under the LLMC 1976. If a state is not party to the LLMC 1976, the liability for bunker oil spills may be unlimited.[181]

The Bunkers Convention adopted some of the features of the CLC and the HNS Convention. For example, it imposes strict liability on ship owners for oil pollution from the bankers of non-tankers. In addition, to ensure compensation for such oil pollution, insurance is made compulsory. However, insurance is compulsory only up to the liability limit of a ship owner under the LLMC 1976.[182] The low level of liability and compulsory insurance may deprive the victims of such oil pollution of adequate compensation and may also reduce the incentive effects of liability law.

Since the Banker Convention ties the liability limit under it to that of LLMC 1976, one may assume that the same insurance considerations as those discussed above in relation to the LLMC 1976 were also present in the minds of the drafters of the Bunkers Convention.[183] During the negotiation of the Bunkers Convention, Greenpeace International submitted a proposal for unlimited liability for oil pollution from bunkers.[184] The proposal did not receive much support at the conference.[185]

3.4.1.6 Convention on Liability for Damage from HNS

Suggestions to adopt a liability convention on damage from hazardous and noxious substance (HNS) were made as early as 1969 during the negotiation of oil pollution liability regimes following the incident of *Torrey Canyon*.[186] The HNS Convention[187] was finally adopted in 1996 after an abortive attempt in 1984.[188]

Like other maritime liability conventions, the HNS Convention too contains the principle of limited liability.[189] Predictably, ship owners used insurance arguments to maintain this principle and to keep the liability limit under the convention as low as possible. In this case also, the insurance arguments were mainly related to the capacity of insurance market and the cost of insurance. Without any empirical evidence, ship owners asserted that if their liability under the HNS Convention

[181] Wu (2002), pp. 561–562.

[182] See the Bunkers Convention, articles 3 and 7 for strict liability and compulsory insurance respectively.

[183] See IMO document LEG 77/11.WPD: "There was general agreement in the Committee that the limits of liability in the draft bunkers instrument should be tied to those in the LLMC, and accordingly no separate limits of liability would be established." Cited in Zhu (2007), p. 163 note 98.

[184] IMO document, LEG 74/4/3.

[185] See generally Zhu (2007), pp. 166–168.

[186] de Bievre (1986), pp. 62–63.

[187] International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996, (1996) 35 ILM 1406.

[188] Wetterstein (1996/1997), p. 596.

[189] Article 9 of HNS Convention.

were made unlimited or increased to a high level, the existing capacity of insurance market would be strained. This in turn would affect the availability of insurance not only for HNS liability but also for oil pollution and general liability.[190]

The drafters of the convention realized that the level of liability on ship owners may not be enough to compensate the victims of a large-scale incident involving the transportation of hazardous and noxious substances. It was, therefore, decided that additional compensation for such damage should come from cargo interests.[191] Thus, like the oil pollution compensation regime, the HNS Convention also contains the two-tier compensation system.

If and when the HNS Convention enters into force,[192] the maximum liability for any ship with 2,000 tons or below would be SDR 10 million.[193] For larger ships, the maximum liability could be up to SDR 100 million.[194] As for the second-tier of compensation, the convention would create an HNS Fund which would provide compensation up to SDR 250 million per incident inclusive of the SDR 100 million from ship owners.[195]

The contributions to the HNS Fund would come from the chemical companies in the contracting states based on the total claims paid from the Fund and the total HNS cargo received by a company in the preceding year.[196] Unlike the contributing oil companies to the IOPC Fund, the contributing chemical companies to the HNS Fund are very diverse and their products pose dissimilar risks and liabilities.[197] The diverse nature of HNS products and the accompanying risks may cause difficulties in calculating the contributions to be received from different chemical companies.

Like the CLC, the HNS Convention channels the liability only to ship owners. The HNS Convention also contains provisions of strict liability and compulsory insurance as is the case with oil pollution liability regime.[198]

---

[190] LEG XXXIV/7, paras. 20, 22, 49 and 61; LEG XXXVI/5, para. 38; cited in de Bievre (1986), p. 71.

[191] Although cargo interests and their insurers also expressed concerns about the cost and capacity of cargo insurance to bear the burden of this liability, the establishment of an HNS Fund would address these concerns as this burden would not fall on individual cargo interests or their cargo owners but jointly on all the cargo interests. For cargo interests' concerns, see de Bievre (1986), pp. 74–77.

[192] The convention has not yet been ratified by the required number of States to enter into force. See http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[193] Article 9.1 (a) of HNS Convention.

[194] See the proviso to article 9.1(b) of the HNS Convention. For a ship with tonnage above 2,000 tons, the maximum liability for each additional ton up to 50,000 is SDR 1,500 and for any additional ton above 50,000 tons SDR 360. See article 9.1(b).

[195] Article 14 of the HNS Convention.

[196] See Articles 16–19 of the HNS Convention.

[197] The number of hazardous and noxious substance may exceed 6,000. See Tan (2006), p. 336.

[198] See articles 7 and 12 respectively.

Although the victims of HNS damage in most cases would receive adequate compensation from the HNS Fund, limiting ship owners' liability and providing additional compensation from the HNS Fund instead of ship owners would reduce the deterrent effects of liability on negligent ship owners.[199] As the HNS Convention is not in force yet,[200] the liability for an accident involving HNS is still governed by the general maritime liability conventions like the LLMC 1976.

3.4.1.7 Conventions on Nuclear Liability

A ship owner as an *owner* of nuclear materials will not be liable for any damage to third parties from a nuclear accident involving the carriage of such materials.[201] However, a ship owner as an *operator* of nuclear ship will be held liable under the Brussels Convention.[202] This is because liability for nuclear damage is channelled to the operators of nuclear installations.[203] Of course, most of the nuclear operators are not ship owners. As the liability for nuclear damage is limited under various conventions, channelling liability would deprive the victims of additional sources of compensation when the damage exceeds the liability limit.

The main argument for the limited liability of nuclear operators is insurance capacity.[204] Considering the devastating effect of a nuclear incident, the argument of limited insurance capacity may be valid to some extent. Yet, the current liability limit for nuclear accident seems to be well below the actual capacity of insurance market in many countries. This can be inferred from the fact that the insurance market in countries with unlimited liability for nuclear damage shows greater capacity than the market in countries with limited nuclear liability. For example, the data from 1992/1993 shows that available insurance coverage for nuclear liability per operator in Switzerland, Germany and Japan, countries with unlimited liability, was $382, $343 and $241 million respectively. In contrast, the maximum available coverage in countries with limited liability such as US, UK and Canada was $200, $39 and $28 million respectively.[205]

[199] Wetterstein (1996/1997), p. 614.

[200] See the IMO homepage for the status of the Conventions at http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[201] Articles 1 and 2 of the Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material, 1971; 11 ILM 277 (1972).

[202] Convention on the Liability of Operators of Nuclear Ships, Brussels, May 25, 1962, (1963) 57 AJIL 268.

[203] See Paris Convention and Vienna Convention; *supra* note 73.

[204] Pelzer (1999), pp. 338–339, 344.

[205] See Trebilcock and Winter (1997), p. 221.

3.4.2 Rebuttal of Insurance Arguments

3.4.2.1 Insurance Capacity

Insurance capacity is not static. It changes with the change in the capital market. It also has close connection with insurance cycles and with the laws of supply and demand. Although the demand for insurance is somewhat inelastic, high profit may create excess capacity in the market as more capital would flow into the market (known as soft market). With excess capacity, competition would intensify and insurance rates would drop. Competition to attract the relatively inelastic demand for insurance would cause the insurers to undercut the price of insurance.[206] As a result, profit would decrease.

In a less profitable market, capacity may shrink (hard market) as investors leave the insurance market for more profitable ventures. This in turn would lead to higher insurance cost and consequently higher profits for insurers. Higher profits would attract more investment and the market capacity will grow again. This is what is known in the insurance industry as 'insurance cycle'.[207] Thus the market capacity may either increase or decrease without any change in liability law. For example, the Lloyd's capacity in 2005 was £13.7 billion, a 9 % decrease from 2004 figure of 14.9 billion.[208]

Given the right premium, there would be no shortage of capacity in the insurance market. If there is a substantial increase in the liability limit for an activity suddenly, the insurance market may need some time to meet the extra demand for liability insurance. In such case, there may be a temporary shortage of capacity. This would not usually happen in maritime liability law. When amendments are made to the maritime liability conventions, they take years to come into force. Thus, the issue of even a temporary shortage of capacity would not arise.[209]

At the Limitation Conference in 1976 the American delegation submitted that they had conducted a study on the marine insurance market and the study had not shown any capacity shortage.[210] The delegation also stated that they obtained information from marine insurance companies to the effect that high level of liability insurance coverage would be available if required by the new convention.[211] Like any other market, insurance market too is influenced by the laws of supply and demand. With increased demand and higher profit, the supply of capital into insurance market would be greater and this would lead to the higher capacity of the insurance market.

---

[206] See Brockbank (1992), p. 803.

[207] See Winter (1988), p. 455.

[208] Jardine Lloyd Thompson (2005), p. 25.

[209] Rosaeg (2001), p. 23.

[210] LEG/CONF.5/C.1/WP.32 (3 Nov. 1976) (USA) in IMO (1983), p. 159.

[211] LEG/CONF.5/C.1/WP.32 (3 Nov. 1976) (USA) in IMO (1983), p. 159.

Higher liability limit per se does not cause the capacity shortage in the insurance market and the lower limit of liability does not guarantee adequate capacity either. The increased limit of liability may cause higher premium and the prospect of higher premium may actually increase market capacity if profit is right. As mentioned in the previous section, unlimited liability for nuclear damage in Switzerland, Germany and Japan created a higher capacity for nuclear liability insurance in those countries than the capacity in countries with limited liability.[212]

A sudden and unexpected rise in liability may, however, cause a temporary shortage of capacity. This happens due to uncertainty in the future liability exposure both in its magnitude and frequency. In such a situation, insurers may be unwilling to provide coverage as happened in some cases of product liability during the 1980s liability insurance crisis,[213] or in the case of terrorism related insurance after September 11, 2001.[214]

In the history of maritime liability law, there seemed to have been some capacity shortage after the adoption of the *Oil Pollution Act of 1990* in the US due to the P&I clubs' refusal to provide coverage, fearing uncertain exposure to very high or unlimited liability under the new Act.[215] This type of capacity shortage is temporary and the insurance market needs some time to adjust.[216] This is a problem of insurability rather than capacity. Insurability requires certainty and predictability, while capacity relates to profitability. Profitability can be affected simply by the competition in the insurance market and by price-cutting i.e., charging very low premium.

3.4.2.2 Insurance Cost

Insurance cost (i.e., premium) for liability insurance depends on the expected liability of an insured. As mentioned earlier, expected liability is determined by multiplying the magnitude of liability with its probability. If on average there is 10 % probability of $1,000 liability on a ship owner, the expected liability of the ship owner would be $100 (10 % × $1,000). The premium for the liability insurance of the ship owner should be $100 (the expected liability) plus an amount representing the profit of the insurer.[217]

As the expected liability may differ from one ship owner to another, their premium would also vary. The premium paid by a careful ship owner is likely to

[212] See Trebilcock and Winter (1997), p. 221.

[213] Priest (1986–1987), p. 224.

[214] Swiss Re (2003), p. 15.

[215] The OPA adopted much higher liability limit than the existing limit under the CLC. In addition, the OPA did not pre-empt the right of states to adopt laws with higher or unlimited liability for oil pollution in their territory. See 33 USCA § 2718(a).

[216] Swiss Re (2003), p. 15.

[217] See Rejda (2008), p. 22.

be lower than that of a negligent ship owner. For example, proper care may reduce the probability of a $1,000 loss from 10 to 5 % and the magnitude of loss from $1,000 to 800. In this example, the expected liability would be reduced from $100 to 40 (5 % × $800). The lower expected liability should reflect in the premium charged. On the other hand, the lack of care may increase the probability and the magnitude of liability above average e.g., the loss of $2,000 with 15 % probability. The premium for liability insurance in this case would be $300 (15 % × $2,000) plus the cost of insurer's service (known as 'loading fees').

To some extent, ship owners are right when they argue for limited liability as a means to save on the cost of liability insurance. When liability is limited, the expected liability would be less and the premium should reflect the reduced liability. If the liability is limited to a maximum of $500 in our above examples, the expected liability of an average ship owner in our example would be $50 (10 % × $500). The expected liability of a careful ship owner and a negligent ship owner would be $25 (5 % × $500) and $75 (15 % × $500) respectively. The lower expected liability due to limitation of liability would also lower the premium.[218]

It can be observed in the preceding paragraph that limitation of liability reduced the expected liability of our negligent ship owner from $300 to 75, while the expected liability of the average ship owner and the careful ship owner decreased by $50 ($100–50) and $15 ($40–25) respectively. In other words, the higher liability a ship owner may incur the greater benefit s/he would obtain from limitation of liability. As negligent ship owners are likely to face greater liability, they benefit more from the principle of limited liability. Limitation of liability subsidizes ship owners especially the negligent ones at the expense of liability claimants as the loss above the liability limit is borne by the latter.

There is no doubt that the premium for liability insurance would increase if the privilege of limitation is taken away. The real question is whether the premium would be *unreasonably* high as argued by ship owners and their representatives during the negotiation of maritime liability conventions. Since premium reflects the expected liability, premium cannot be unreasonably high in the absence of liability being unreasonably high. Is the liability of ship owners going to be unreasonably high in the absence of limited liability?

The only area where the fear of very high liability is justified is the liability for nuclear damage. The nuclear incident in Chernobyl is the worst nuclear disaster in the world so far with estimated domestic financial cost alone exceeding $20 billion.[219] In 1986, the US Accounting Office estimated that in a worst-case nuclear scenario property claims alone would exceed $10 billion.[220] Theoretically, the premium for a nuclear accident giving rise to a $10 billion liability with 1 % probability of that happening in each nuclear installation would be a little more

[218] With $500 limit, the magnitude of liability can never be more than $500 but it can be less; the actual loss can be more than $500.

[219] Trebilcock and Winter (1997), p. 218.

[220] Trebilcock and Winter (1997), p. 218.

than $100 million (1 % × $10,000,000,000) in premium. This would be *unreasonably* high cost even for a company with $1 billion worth of assets as insurance would cost more than 10 % of the company's total asset.

If we modify the above example and assume that 1 % probability of a nuclear accident exists not in *each* nuclear facility but in *one* out of 100 facilities in a country,[221] the insurance premium for each facility should be $1 million (1 % × $100 million) plus the loading fees. It may be questioned though whether any pool of nuclear insurers would provide coverage for that amount. If coverage is available, paying $1 million in premium for a possible 10 billion worth of liability coverage may not be unreasonably high for a company with $1 billion assets. The possibility of a nuclear incident happening every year is not a realistic assumption. If we assume the possibility of such an incident once in every 10 years, for example, the premium would be reduced further by nine-tenths.

In the context of maritime liability, the damage from a shipping incident would be very unlikely to exceed $1 billion except an occasional oil pollution incident in a very highly sensitive area.[222] As the probability of such an incident is very low, the increased liability limit or even unlimited liability would *not* cause *unreasonably* high premium. The premium for ship owners' liability insurance may slightly increase in the absence of limited liability. However, it is possible that if the liability were unlimited, both the magnitude and the frequency of maritime losses would decrease because the fear of unlimited liability may induce ship owners to take better care against losses. With the lower probability and magnitude of losses, the expected liability (i.e. probability multiplied by magnitude) would also decrease and so would the premium. Premium would be unreasonably high only for those ship owners who fail to take proper care despite the liability being unlimited.

3.4.3 The Reality of Marine Liability Insurance Market

3.4.3.1 Capacity of Marine Insurance Market

As for maritime liability insurance, the question of capacity mainly arises with regard to reinsurance because the primary insurers for liability insurance are ship

[221] Even this probability is high considering the fact that there were only three significant accidents at nuclear power plants in the world and only one of those happened in the US, which has 109 nuclear reactors. In the US it is estimated that there is only a 5 % probability of one accident in 50 years (i.e. for each reactor that would be the probability of 0.0229 of one incident each year). In the US incident the liability for third party claim was $50 million. Other two incidents were at Chernobyl in Ukraine and at Windscale in the UK. Only the Chernobyl incident caused devastating effect on human life, with estimated domestic financial cost exceeding $20 billion. See Trebilcock and Winter (1997), p. 218.

[222] For example, in the *Exxon Valdez* oil pollution incident the ExxonMobil spent US$4.3 billion in total for clean-up, settlements of claims and fines. See http://www.exxonmobil.com/Corporate/about_issues_valdez.aspx. Accessed 01 September 2013.

owners themselves through their mutual P&I clubs. The capacity of marine reinsurance market remains fairly constant.[223] The reinsurers of International Group of P&I clubs are committed to provide coverage up to $3.07 billion per incident.[224] Lloyd's is the main reinsurance market for marine insurance and in 2005 its capacity was £13.7 billion.[225] The reinsurance for the P&I clubs is in the form of excess of loss reinsurance and is triggered only if the liability in an incident exceeds $70 million.[226]

Within this $70 million, the club of the liable ship owner retains $9 million. In other words, a club must first pay for the liability of any of its entered ships up to $9 million. The individual clubs also purchase reinsurance coverage for its retained amount.[227] If liability exceeds $9 million, the clubs in the group shares the burden based on each club's entered tonnage, loss experience and certain other factors[228] up to $70 million. Within this $70 million, there are four sub-layers. The first sub-layer covers from $9 to 30 million through the pooling of the clubs. The other sub-layers provide up to $70 million through captive reinsurance (of individual clubs) with Hydra Insurance Co. Ltd.[229]

When the liability from an incident exceeds $70 million, there are three layers of reinsurance. The first two layers are $500 million each and the third is for $1 billion. Each of the first three reinsurance layers is with unlimited number of reinstatements. The group has arranged for $1 billion collective overspill protection with one reinstatement on top of the $2 billion reinsurance layers. Beyond this total sum of $3.07 billion, the group can cover up to $7.5 billion through a loss-sharing pooling agreement among the clubs. It is noteworthy that there is no premium under the pooling agreement.[230]

3.4.3.2 Cost of Marine Insurance

The information in the preceding subsection proves that there is no shortage of insurance capacity for marine liability insurance. In the history of the International Groups of P&I clubs there was no incident requiring payment above the reinsurance

[223] Jardine Lloyd Thompson (2005), p. 60.

[224] See http://www.igpandi.org/downloadables/2013%20-%20Reinsurance%20Diagram.pdf. Accessed 01 September 2013.

[225] Jardine Lloyd Thompson (2005), p. 25.

[226] See http://www.igpandi.org/downloadables/2013%20-%20Reinsurance%20Diagram.pdf. Accessed 01 September 2013.

[227] Jardine Lloyd Thompson (2005), p. 65.

[228] Rosaeg (2001), p. 8.

[229] See http://www.igpandi.org/downloadables/2013%20-%20Reinsurance%20Diagram.pdf. Accessed 01 September 2013.

[230] See http://www.igpandi.org/Group+Agreements/The+Pooling+Agreement. Accessed 01 September 2013.

level,[231] let alone $7.5 billion overspill limit. Even if the principle of limited liability is abolished from all areas of maritime law, it would be an extremely rare incident for the liability to exceed this limit.

Since the capacity of insurance market is not the problem, we now inquire about the cost of marine liability insurance. Here we have to bear in mind that the cost of liability insurance, or of any insurance for that matter, varies from ship owner to ship owner. The cost of insurance for individual ship owner depends on many factors such as the ship owner's claim history, loss experience, the size of the fleet and the condition of the ships. For example, in 1969 the premium for individual tanker owners varied from 3 to 150 cents per gross ton in a Norwegian P&I club, SKULD.[232]

Data presented in the 1976 liability conference showed that insurance cost represented only 7–8 % of the total operating costs of ship owners.[233] Fifty percent of the total insurance cost related to liability insurance. In other words, the cost of liability insurance was 3.5–4 % of the operating cost. An increase in the liability limit would not cause a proportionate increase in the insurance cost but a much reduced ratio. This is because the payment for liability at the increased level would be made only in few cases.[234] In other words, for the P&I clubs the increased limit would only have an impact on their excess of loss reinsurance premium cost, which is only 15–20 % of the P&I premiums (i.e. 0.6–0.8 % of the total operating cost).[235]

We can also get some idea about the possible increase in insurance cost from the data on the contributions of oil companies to the IOPC Fund and the Supplementary Fund. The IOPC Fund provides oil pollution compensation up to SDR 203 million. Yet, oil companies' contribution was less than 1 cent in 2012 and less than 3 cents against per ton of oil carried via sea. The contribution never went above 6 cents in the last 17 years (1996–2012).[236] This again shows that the cost of insurance for very high or even for unlimited liability would not be an unbearable burden on ship owners. Therefore, the insurance arguments used by ship owners are aimed at keeping insurance cost at a low level as opposed to a reasonable level.

Keeping insurance cost as low as possible should not be the main consideration in designing liability law. The main focus of liability law should be to deter potentially liable parties from negligence.[237] Limitation of liability reduces the

[231] Rosaeg (2001), p. 8.

[232] LEG/CONF.2/C.1/WP. 3 (30 Nov. 1971), IMCO (1978), p. 242.

[233] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976), IMO (1983), p. 275.

[234] For example, if out of every two incidents today only one incident causes liability above the existing limit, doubling ship owners' liability limit would have no effect on insurance cost for the incident causing the loss below the current liability limit. Insurance cost will increase only for the incident giving rise to liability above the current limit.

[235] LEG/CONF.5/C.1/SR.9 (5 Nov. 1976), IMO (1983), p. 275.

[236] See IOPC (2013), p. 6.

[237] LEG/CONF.5/C.1/SR.7 (4 Nov. 1976) (International Authority for Ports and Harbours), IMO (1983), pp. 259–260.

deterrent effect of liability law. When ship owners do not have to pay fully for the losses caused by them, they would lack the incentives to take optimal care.

3.5 Abolition of Limitation of Liability and Its Consequences

With the well-developed marine insurance market, its high capacity and the low cost of insurance, there is no justification for the continued existence of limited liability today in the maritime law. If the maritime liability law is thought to have any effect in influencing the behavior of ship owners in inducing proper care, limiting the liability reduces that effect. As discussed earlier, the cost of proper care may appear more than the expected liability of a ship owner due to the limited liability even though taking such care is cost-efficient in the absence of limited liability. To the degree a ship owner does not take proper care due to limited liability, the concept of limited liability causes social loss.

It is argued that the incidents involving losses over the limited liability of ship owners are not that many[238] and thus the benefit of unlimited liability would be slight. If we consider this to be true, then the argument of unreasonable insurance costs[239] for unlimited liability would appear false. This is because the cost for liability insurance should reflect the expected liability. The expected liability would not increase much following the abolition of limited liability if the number of accidents with liability above the existing liability limit is few and far between.[240]

On the other hand, if there is a significant difference in insurance costs for the present liability limit and for the unlimited liability, this would indicate a wide gap between the actual maritime losses suffered by people and the limited liability paid by ship owners. Such gap may exist either because there are many incidents of losses above the existing liability limit or because there are few but disastrous accidents with losses exceeding the liability limit by many folds. Few devastating and costly incidents would increase the difference between the expected or average losses of claimants and the average limited liability of ship owners. Even if this to be true, there seems to be no justification why the victims of disastrous incidents should not receive full compensation for their losses.

---

[238] See IMO (1983) and IMCO (1978).

[239] The argument on the cost of insurance predominated in every international conference on maritime liability. For example, see IMO (1983) and IMCO (1978). Article 8.5 of the 1996 Protocol to the LLMC 1976 requires the Legal Committee of IMO to take into account the cost of insurance, among others, when an amendment to increase the liability limit is considered.

[240] This is also proved from the fact that the cost of insurance for personal injury and death is lower than the cost of insurance for property claim. This is due to fewer personal injury and death claims and their lower magnitude despite the fact that the liability limit has always been higher in the personal injury and death claim. See LEG/CONF.5/C.1/SR.20 (13 Nov. 1976), IMO (1983), pp. 368–369.

This is not to deny that unlimited liability may impose some extra costs on ship owners either in the form of additional premium or the cost of proper care.[241] The increased cost is likely to be offset by the social gain from the possible reduction in accident rates due to the improved care level induced by unlimited liability.

3.5.1 Confusion Between Insurability and Unpredictability

As mentioned earlier, ship owners and their representatives also warn us of the possible insurance capacity shortage if liability were made unlimited.[242] Here it seems that unlimited liability is mistaken for unpredictable liability. First of all, the concept of limited liability does not exist in most of the non-maritime liability areas such as accident liability and professional liability.[243] There appears to be no shortage of insurance coverage in those areas even though liability could be very high in some cases.

There may, however, be coverage shortage due to the unpredictability of future losses or liability. This is understandable because predictability is the basis on which to calculate insurance premium. Insurers cannot determine premium when the loss or liability in an area is highly unpredictable. Such unpredictability can be either a short-term phenomenon or a long-term one. The examples of coverage shortage due to short-term uncertainty are terrorism-related coverage after the September-11 incident in 2001[244] and the product-related liability insurance in the 1980s due to a sudden increase in the court awards for product-related injuries.[245]

The shortage of coverage due to long term unpredictability exists mainly in nuclear liability.[246] Even in the case of nuclear liability some countries adopted unlimited liability and this change actually led to the growth of the market capacity for nuclear liability insurance in those countries.[247]

---

[241] It is possible that premium may actually decrease due to optimal care, although cost of care will increase.

[242] See the statement of the ICS in *supra* note 3.

[243] It is true that limitation of liability exists for other types of transportation. However, that should not be a justification to maintain the principle in the maritime liability law.

[244] Swiss Re (2003), p. 15.

[245] See Priest (1986–1987), p. 1521.

[246] Even though liability is predictable, shortage of coverage may sometimes occur due to very high probability of loss or liability for each insured in the pool, making the insurers unable to spread the loss among the insured parties.

[247] For example, the data from 1992/1993 shows that available nuclear liability insurance coverage per operator in Switzerland, Germany and Japan—countries with unlimited liability—were $382, $343 and $241 million respectively, whereas in the US, UK and Canada the maximum coverage was $200, $39 and $28 million respectively. Trebilcock and Winter (1997), p. 221.

The losses from maritime accidents are unlikely to be of as high as those from nuclear incidents.[248] We also need to keep in mind that the International Group of P&I clubs are able to provide coverage up to US$7.5 billion per incident.[249] It is argued that this high level of coverage may be unavailable if the maritime liability becomes unlimited.[250] First of all, this argument equates unlimited liability with unpredictable liability. Second, unlimited *insurance* coverage may not be even desirable. In order to maintain incentives in the minds of the insured to take care, the insured need to personally bear part of the liability.[251]

3.5.2 Unlimited Liability and the Cost of Litigation

Unlimited liability may, however, increase the cost of litigation by reducing the number of settlements and increasing the frequency of litigation. As the maximum liability is fixed under the existing maritime laws, both parties to a lawsuit may have the same expectations about the trial outcome. Such expectations lead the parties to mutual settlements in order to avoid litigation costs. The concept of limited liability may thus encourage settlements[252] and save in litigation costs.

Yet, mutually beneficial settlements are possible regardless of limited liability as long as the plaintiff's expectation of trial outcome does not exceed the defendant's by more than their total cost of trial.[253] On the other hand, a plaintiff may prefer trial over settlement even under the limited liability system when the plaintiff believes rightly or wrongly that s/he can break the liability limit and can get compensation above the liability limit.[254]

---

[248] Chernobyl incident, the worst ever nuclear disaster seen by the world, cost more $20 billion in domestic financial damage alone. Trebilcock and Winter (1997), p. 218. On the other hand, in maritime liability history only few oil spill incidents such as *Exxon Valdez* in highly sensitive areas caused damage exceeding $1 billion.

[249] See http://www.igpandi.org/Group+Agreements/The+Pooling+Agreement. Accessed 01 September 2013.

[250] Steel (1995), p. 82.

[251] See *infra* Sect. 7.3.3.

[252] Steel (1995), p. 81.

[253] Shavell (2004), p. 403. For example, if the litigation cost is $600 for each party, the total cost is $1,200. Assume that each side has to bear his cost. Suppose also, the plaintiff thinks that it would receive $5,000 in damages but the defendant thinks that the maximum amount it would have to pay is about $4,000. The difference between the two expectations is $1,000 which is less than the total litigation cost of $1,200. As the trial cost is $600 for each side, the plaintiff would be willing to accept any offer above $4,400 ($5,000 compensation − $600 litigation cost), while the defendant would be happy to offer an amount less than $4,600 ($4,000 liability + $600 litigation cost). As the defendant's highest offer ($4,600) is more than the plaintiff's minimum acceptable amount ($4,400), mutually beneficial settlement between them is still possible.

[254] However, this is very unlikely today because under article 4 of the LLMC 1976 and similar provisions under other maritime liability conventions made the ship owners' right almost indefeasible.

3.5.3 Unlimited Liability and the Price of Consumer Goods

It is argued that the abolition of limited liability or an increase in the liability limit will ultimately hurt the consumers of products transported via sea due to high transportation costs. This argument presupposes that full liability has no effect on the behavior of liable parties or that maritime accident rate is irreducible. As argued before, there is no use of liability law if it has no impact on behavior. In most areas of maritime liability law, liability is imposed for negligence. Presence of negligence implies the possibility of proper care.[255]

The imposition of full liability may, in fact, reduce the cost of products in the long run by preventing many preventable losses. Full liability, of course, will affect the profits of *negligent* ship owners as they will have to spend more either on precaution or for higher liability. Following the abolition of limited liability, there may be slight increase in the freight charges and also an increase in the price of the products carried by ships. Other things being equal, the product price may ultimately become lower due to the reduction in maritime losses as a result of improved care in the absence of limited liability.[256]

3.5.4 Social Desirability of Maritime Liability Laws

So far we have assumed that maritime liability law is socially desirable based on a further assumption that the imposition of liability would motivate ship owners to take optimal care. As discussed earlier, optimal care implies that the cost of care is less than the reduction in expected loss. So, if the cost of care is more than the preventable expected loss or if the loss is unpreventable despite care (e.g., accidents from unexpected storm), then there should not be any liability. Liability in such case does not serve its function of deterrence.

Maritime law usually does not impose liability in such situations. For example, even though liability is strict for oil pollution, ship owners are exonerated from any liability in case the oil pollution damage was the result of an act of God, war, act or omission of third party, or the negligence of the government.[257] These events cannot be prevented by ship owners and thus they bear no liability for the losses caused by these events.

---

[255] See the definition of negligence in 'Hand Formula'; *supra* notes 40 and 41 with the accompanying text.

[256] Product price may become higher when higher liability will be paid to third parties, whose loss so far had not be accounted for in the price the product. This type of loss is known as 'externality' in economics. See generally Pigou (1932).

[257] Article III (2) of the CLC. The LLMC 1976 does not mention these exceptions because the convention does not deal with the basis of liability but only with the limit of liability. The basis of liability for maritime claims depends on the national law of the state parties. These exceptions are recognized in almost all national laws.

When the imposition of liability leads to optimal care, liability should be imposed without any limitation. Limiting or reducing liability in such situation discourages potentially liable people from taking proper care. In the context of maritime liability, ship owners or their employees are in a better position to take proper care as they are in control of both the ships and the cargoes on the ships.[258] There is thus strong possibility that the abolition of limited liability would lead to better safety measures.[259]

Even when optimal care is not possible, liability may still be socially desirable to internalize the losses generated from a particular activity especially when the activity is thought to exceed its optimal level.[260] Strict liability for oil pollution or for damage from hazardous and noxious substances (HNS) may be explained in this light. Strict liability, compulsory insurance, and the direct action against insurers should not, therefore, be thought as justifications for the limited liability.[261]

Strict liability may be further justified on the ground of difficulty in determining the actual care level or due to the dangerous nature of accidents involving oil and HNS. Compulsory insurance and direct action against insurers are sometimes necessary to prevent ship owners from escaping liability through corporate veils and using the flag of convenience.[262]

3.5.5 The Impossible Test to Break Limitation

The problem of limited liability is made worse by the new test to break the limitation. Under the new test, it is very difficult for a liability claimant to deprive ship owners of their right to limited liability. To break the limit, a claimant has to prove not only the personal fault of a ship owner but also the intention of a liable ship owner to cause the loss or damage.[263] The new test is adopted in almost all the conventions on maritime liability with minor differences in the wording.[264]

The new test reduces the incentive effect of liability law further because it would be a rare case for a negligent ship owner to be required to pay more than the limited

[258] Wetterstein (1996/1997), p. 614.

[259] Gauci (1995), p. 67.

[260] Such losses are known as 'externalities'. Liability is desirable in such situations only when due to high transaction costs the party generating the externality and the party suffering from it will not engage in a market transaction. See Coase (1960), pp. 1–23.

[261] *Cf.* the arguments of ICS in LEG/CONF.2/5 (21 Oct. 1971), IMCO (1978), p. 199.

[262] Detailed discussion on the benefits of compulsory insurance and direct action is undertaken in Chap. 6.

[263] Article 4 of the LLMC 1976 reads, "A person shall not be entitled to limit his liability if it is proved that the loss resulted from *his personal act or omission*, committed *with the intent* to cause such loss, or *recklessly and with knowledge* that such loss would probably result." (italics added).

[264] For the comparison of the wording and the possible effect of such difference, see Griggs et al. (2005), pp. 31–34.

liability. On the other hand, a ship owner could be deprived of the right to limited liability in case of the 'actual fault or privity' of the ship owner.[265] It was a much easier test to prove and it created some incentives in the minds of ship owners to take optimal care due to the fear of unlimited liability.[266]

In addition, the burden of proof was on ship owners under the previous test to show the absence of any actual fault or privity.[267] The new test under the LLMC 1976[268] shifted the burden of proof to the claimants. A ship owner now automatically gets the right to limit his liability, unless a claimant can discharge the heavy burden to prove that "the loss resulted from his [ship owner's] *personal act or omission*, committed *with the intent* to cause such loss, or *recklessly and with knowledge* that such loss would probably result."[269]

As can be seen from the italicised words above, this test includes many difficult conditions to break the liability limit. The conditions have made the right of ship owners to the limited liability practically unbreakable.[270] For example, as the act or omission causing the loss must be *personal*, courts can no longer impute the fault or negligence of a master or crew into that of a ship owner.

Under the old test of 'actual fault or privity,' courts sometimes held ship owners liable for the fault or negligence of their employees through the principle of vicarious liability. For example, in *The Lady Gwendolen*[271] the privity of the marine superintendent of a shipping company about a prior incident of the master's speeding in fog was imputed to that of the company and, consequently, the shipping company's right to limitation was denied. This would no longer be possible under the new test. If the alleged ship owners are individuals, it must be their personal act or omission. If they are corporations, the act or omission must be that of corporations' directing minds (alter ego) such as the head or the managing director of a company.[272]

In addition, the act or omission must be committed by a ship owner with the intention to cause a particular damage. This type of condition is normally required in criminal law in the form of *mens rea*. Alternatively, the loss-causing action or omission must be committed 'recklessly' by a ship owner. Proving this alternative may be as difficult as the condition of 'personal intention' to cause damage. A reckless action alone is not enough to hold a ship owner liable beyond the LLMC 1976s limit. The reckless ship owner must have knowledge that the particular damage would probably result. It can be argued that if a ship owner is reckless

[265] Article 1(1) of the 1957 Convention.

[266] See the statement of Canadian delegation at the 1976 Liability Conference in LEG/CONF.5/C.1/SR.8 (Nov.05, 1976), IMO (1983), pp. 268–269.

[267] Article 1(1) of the 1957 Convention.

[268] See article 4 of the LLMC 1976.

[269] See Article 4 of the LLMC 1976 (emphasis added).

[270] EU doc. COM (2000) 802 final at 56.

[271] [1965] P.294; [1965] 1 Lloyd's Rep. 335 (Probate Division).

[272] Gauci (1997), pp. 167–169.

about the act but is unaware of its consequence, the ship owner may still have the right to limit.[273] Only when a ship owner is reckless about his act and is aware of the probable consequence of the act, will the ship owner be deprived of the right or privilege.

Liability claimants have to prove all these conditions just to obtain compensation for their actual losses. It is not the case that the claimants would receive more than their losses if they satisfy all these conditions under the new test. The test obviously causes injustice towards the liability claimants when their proven losses exceed the limited liability of ship owners under various maritime liability conventions.[274] This is why Lord Donaldson in an inquiry on the 'Prevention of Pollution from Merchant Shipping' in 1994 commented that in the future this test may prove to be an 'unreasonable protection for reckless ship owners'.[275]

3.6 Conclusion

The identification of a problem is the first step to its solution. While the main problem of limited liability is under-deterrence, policy makers put emphasis only on adequate compensation. As a result, the usual focus in international conferences related to the maritime liability has been on improving compensation amount without abolishing the principle of limited liability. The policy makers usually do not question the desirability of this principle in terms of its effect on ship owners' behavior.[276] Sometimes the source of increased compensation is not the liable ship owners e.g., the compensation from the IOPC Fund and the HNS Fund. This approach ignores the very purpose of liability law i.e., deterrence from negligence.

If liability does not create any deterrence, there should be no liability in the first place. On the other hand, if the imposition of liability is thought desirable for its impact on ship owners' behavior, liability should be unlimited i.e., equal to the victim's actual loss. The costs of maintaining maritime liability system would be a social loss if liability fails to induce deterrence due to limited liability. Once

[273] Gauci (1997), pp. 167–169.

[274] The injustice inherent in limitation of liability is recognized by the courts. For example, Lord Denning said in *The Bramley Moore* [1963] 2 Lloyd's Rep. 429, at 437, "[Limitation of liability] is not a matter of justice, it is a rule of public policy which has its origin in history and its justification in convenience."

[275] Gauci (1997), p. 169.

[276] One exception is the European Commission's recent recognition of this fact in one of its proposal papers. See Commission Proposal for a Directive on ship-source pollution and on the introduction of sanctions, including criminal sanctions, for pollution offences, COM(2003) 92 final at 5–7; cited in Tan (2006), pp. 152, 343, and notes 394 and 941. Although Canadian delegation at the 1976 Limitation of Liability Conference recognized the incentive effect of an easily-breakable limit, they did not propose the abolition of this principle. See LEG/CONF.5/C.1/SR.8 (05 Nov. 1976), IMO (1983), pp. 268–269.

justified in the absence of market insurance, limitation of liability now creates under-deterrence and social loss.

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven
Becker G (1974) A short cruise on the good ships TOVALOP and CRISTAL. J Marit Law Commer 5:609
Billah M (2007) Economic analysis of limitation of shipowners' liability. Univ San Francisco Marit Law J 19:297–319
Brockbank ME (1992) The crisis in marine insurance market. Diritto Marittimo 94:803
Brown C (1978–1979) Deterrence and accident compensation schemes. Univ West Ont Law Rev 17:111
Calabresi G (1970) The costs of accidents: a legal and economic analysis. Yale University Press, New Haven
Calabresi G, Melamed AD (1972) Property rules, liability rules, and inalienability: one view of the cathedral. Harv Law Rev 85:1089
Coase RA (1960) The problem of social cost. J Law Econ 3:1
de Bievre AFM (1986) Liability and compensation for damage in connection with the carriage of hazardous and noxious substances by sea. J Marit Law Commer 17:61
Donovan J (1979) The origins and development of limitation of shipowners' liability. Tulane Law Rev 53:999–1045
Faure M, Hui W (2005) Economic analysis of compensation for oil pollution damage. Maastricht Faculty of Law Working Paper 2005/2
Gauci G (1995) Limitation of liability in maritime law: an anachronism? Mar Policy 19:65
Gauci G (1997) Oil pollution at sea: civil liability and compensation for damage. Wiley, Chichester
Gilmore G, Black C Jr (1975) The law of admiralty, 2dth edn. Foundation Press Inc., New York
Griggs P (1997) Limitation of liability for maritime claims: the search for international uniformity. Lloyd's Marit Commer Law Q 14:369
Griggs P et al (2005) Limitation of liability for maritime claims, 4th edn. LLP, London
Halpern P et al (1980) An economic analysis of limited liability in corporation law. Univ Toronto Law J 30:117
Hazelwood S (2000) P&I clubs: law and practice, 3dth edn. LLP, London
Hellawell R (1968) Less-developed countries and developed country law: problems for the law of admiralty. Columbia J Transnatl Law 7:203–221
Holmes OW (1949) The common law. Little, Brown and Company, Boston
IMCO (1973) Official records, international legal conference on marine pollution damage, 1969. IMCO, London
IMCO (1978) Official records of the conference on the establishment of an international compensation fund for oil pollution damage 1971. IMCO, London
IMO (1983) Official records of the international conference on the limitation of liability for maritime claims, 1976. IMO, London
IOPC (2013) The international regime for compensation for oil pollution damage: explanatory note. http://www.iopcfunds.org/fileadmin/IOPC_Upload/Downloads/English/explanatorynote_e.pdf. Accessed 01 Sept 2013
Jardine Lloyd Thompson (2005) Weathering the storm: insurance market overview 2005
Kiern LI (2000) Liability, compensation, and financial responsibility under the oil pollution act of 1990: a review of the first decade. Tulane Marit Law J 24:481

M'Gonigle RM, Zacher MW (1979) Pollution, politics, and international law: tankers at sea. University of California Press, California
Mustill L (1993) Ships are different – or are they? Lloyd's Marit Commer Law Q 490
Pelzer N (1999) Focus on the future of nuclear liability law. J Energy Nat Resour Law 17:322
Pigou AC (1932) The economics of welfare, 4th edn. Macmillan and Co., London
Popp AHE (1993) Limitation of liability in maritime law-an assessment of its viability from a Canadian perspective. J Marit Law Commer 24:335
Posner RA (2003) Economic analysis of law, 6th edn. Aspen Publishers, New York
Priest GL (1986–1987) The current insurance crisis and modern tort law. Yale Law J 96:1521
Rejda GE (2008) Principles of risk management and insurance, 10th edn. Pearson Education Inc., Boston
Rosaeg E (2001) The impact of insurance practices on liability conventions: legislative approaches in maritime law. In: Proceedings from the European colloquium on maritime law, Oslo. http://folk.uio.no/erikro/WWW/corrgr/insurance/Lysebu.pdf. Accessed 01 Sept 2013
Rose FD (2004) Marine insurance: law and practice. LLP, London
Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge
Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge
Smets H (1983) The oil spill risk: economic assessment and compensation limit. J Marit Law Commer 14:23
Steel D (1995) Ships are different: the case for limitation of liability. Lloyd's Marit Commer Law Q 77
Sturley MF (1993) Changing liability rules and marine insurance: conflicting empirical arguments about Hague, Visby, and Hamburg in a vacuum of empirical evidence. J Marit Law Commer 24:119
Sugarman S (1985) Doing away with tort law. Calif Law Rev 73:555
Sweeney JC (1975–1976) The UNCITRAL draft convention on carriage of goods by sea (part I). J Marit Law Commer 7:69
Swiss Re (2003) Reinsurance – a systemic risk? Swiss Re, Switzerland
Tan AK (2006) Vessel-source marine pollution: the law and politics of international regulation. Cambridge University Press, New York
The Administrator of Ship-Source Oil Pollution (2006) Ship-source oil pollution fund – the administrator's annual report 2005–2006. The administrator of ship-source oil pollution, Ottawa
Tilley M (1986) The origin and development of the mutual shipowners' Protection & Indemnity Associations. J Marit Law Commer 17:261
Trebilcock MJ (1987) The social insurance-deterrence dilemma of modern North American tort law: a Canadian perspective on the liability insurance crisis. San Diego Law Rev 24:929
Trebilcock MJ, Winter R (1997) The economics of nuclear accident law. Int Rev Law Econ 17:215
Wetterstein P (1996/1997) Carriage of hazardous cargoes by sea – the HNS convention. Ga J Int Comp Law 26:595
Winter RA (1988) The liability crisis and the dynamics of competitive insurance markets. Yale J Regul 5:455
Wu C (2002) Liability and compensation for bunker pollution. J Marit Law Commer 33:553–568
Zhu L (2007) Compulsory insurance and compensation for bunker oil pollution damage. Springer, New York

Chapter 4
Insurance Through General Average: Its Justifications and Effects on Optimal Care and on Social Costs

4.1 Introduction

"Let that which has been jettisoned on behalf of all be restored by the contribution of all."[1] This statement from Rhodian law summarizes the principle of general average in maritime law and it is as applicable today as it was in 916–700 BC. Like limitation of liability, general average is another peculiar maritime principle which arose in the similar background of pre-insurance era.[2] While the concept of limited liability is a feature common to all maritime liability laws, the issue of general average arises only in the context of maritime cargo liability law. Whenever ship owners can successfully declare an incident as general average, they not only avoid paying for the loss of the cargo under their care but can also ask the cargo owners to contribute to the expenses incurred in the repair of the ships necessitated by a general average incident.

Like limitation of liability, general average *served* an important commercial function in the pre-insurance era by protecting risk-averse individuals from the fear of maritime risks and contributed to the improvement of investment into shipping and maritime commerce.[3] Modern marine insurance has now taken over this function and in fact provides much better protection against maritime risks than general average can do. This is because general average can shift only part of the risk to other co-adventurers and spread it over a small group of people, while market insurance can absorb the total risk by spreading it over a large pool of insured parties.

In addition to its function as insurance, general average is also *thought* to encourage efficient mitigation of losses in the face of a maritime peril.[4] Yet, this

[1] Cited in Dover (1975), p. 6.

[2] Courts and commentators usually equate general average with insurance in their discussion on the origin of insurance. For example, see Strathy and Moore (2003), p. 5; Tetley (2008), p. 1751.

[3] See Selmer (1958), pp. 27, 190.

[4] See Gilmore and Black (1975), p. 258.

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_4, © Springer International Publishing Switzerland 2014

idea is based on some unrealistic assumptions and consequently not very sound.[5] On the contrary, general average, despite its appearance of a harmless maritime practice, may actually lead to negligent navigation and to an increase in the costs of maritime transportation.

After a brief description of the nature and function of general average in Sect. 4.2, we will examine various justifications behind this anachronistic maritime principle in Sect. 4.3. Section 4.4 will highlight how its presence today in maritime liability law may distort the deterrent effect of liability law and may also increase the costs of goods transported via sea. We will conclude with the recommendation that this principle too should be abolished from maritime law.

4.2 Nature and Practice of General Average

4.2.1 Meaning and Nature

General average means common loss. The word 'average' derives from the French word '*avarie*', meaning 'loss',[6] or from old Italian '*avere*' for 'property'.[7] General average thus refers to the *losses* suffered or the *expenses* incurred by any of the parties to a maritime adventure in order to prevent or minimize the impact of a peril of the sea affecting the whole adventure.[8] All the parties to the adventure would bear the burden of these losses and expenses in proportion to their respective saved interests. These interests comprise invariably ships and cargoes and may occasionally include freights.[9]

It is noteworthy to mention at the outset that the principle of general average is not governed by any national legislation, although reference to it can be found in the laws of some countries.[10] The principle and some of its specific examples contain in

[5] See Selmer (1958), p. 291.

[6] Gold et al. (2003), pp. 628–629; Tetley (2008), p. 1751.

[7] See Cooke and Cornah (2008), pp. 6–7, para 00.11. However, according to some greatest authorities on etymology its origin is unknown. Cooke and Cornah (2008), pp. 6–7, note 32.

[8] See *Birkley v Presgrave* (1801), 1 East. 220 at 228, 102 E.R. 86 at 89; *Northland Navigation Co. Ltd. and Northland Shipping (1962) Co. Ltd. v Patterson Boiler Works Ltd.*, [1983] 2 F.C. 59 (T.D.); *The Star of Hope*, 76 U.S. 203 at 228 (1869); see also *Marine Insurance Act*, S.C.1993, c22 (Canada), s. 65.

[9] Freight will be a contributing item only when it is at risk. This occurs when the earning of freight depends on the successful delivery of the goods. On the other hand, if the freight is pre-paid and non-refundable, it is already earned and therefore not at risk.

[10] For example, see *Marine Insurance Act*, S.C.1993, c22 (Canada), s. 65 and *Marine Insurance Act*, 6 Edward VII, ch. 41 (UK), s.66. See also article V of the *International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading*, Aug. 25, 1924, 51 Stat. 233, 120 L.N.T.S. 155 as amended by its 1968 Protocol, 2 U.N. Register of Texts ch. 2, at 180 [hereinafter the *Hague-Visby Rules*]; article 24 of the *United Nations Convention on the Carriage of Goods by Sea*,

the York-Antwerp Rules (YAR),[11] an international codification of the rules which are regularly incorporated into the contracts of carriage by reference.

4.2.2 *Modern Practice of General Average*

While general average in the past involved mainly the jettison of cargo overboard in order to lighten the ships caught in perils of the sea such as storm, strong wind, or high wave, today most incidents of general average involve ship owners' running expenses at the ports of refuge following a peril of the sea.[12] Though less frequent, the jettison of cargo or damage to the cargo may still arise in a general average situation, e.g., intentional destruction of some cargo in order to stop the spread of fire to the whole ship or the water damage to cargo in the process of extinguishing such fire originating from the adjacent cargo or from the ship itself.[13]

General average expenses towards the ship may include salvage charges,[14] towage charges, and various other expenses at a port of refuge such as port charges, additional running expenses of the ship, the wages and maintenance of the crew etc.[15] Because today in the majority of general average cases ship owners are the ones who would claim general average contributions from cargo owners, this state of affairs would be assumed throughout the chapter unless expressly stated otherwise.

Hamburg, Mar. 31, 1978, U.N. Doc. A/Conf. 89/5, (1978) 17 I.L.M. 608 [hereinafter *Hamburg Rules*]; article 84 of the newly adopted *UN Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea*, 2008 [hereinafter *Rotterdam Rules*]; available on the website of UNCITTRAL (UN Commission on International Trade Law) at http://www.uncitral.org/pdf/english/texts/transport/rotterdam_rules/09-85608_Ebook.pdf. Accessed 01 September 2013.

[11] The rules were first adopted in 1890 by the Conference of the Association for the Reform and Codification of the Law of Nations, held at Liverpool. Gilmore and Black (1975), p. 252. The rules have been subsequently amended in 1924, 1950, 1974, 1994 and 2004. See Bennett (2006), p. 763. Reference in this chapter to the rules will mainly be to their 2004 version unless indicated otherwise. The 2004 version was adopted at the CMI (Comité Maritime International) conference in Vancouver on 31 May–04 June 2008 and the rules can be accessed at the CMI website: http://www.comitemaritime.org/Uploads/YAR%202004%20english.doc. Accessed 01 September 2013.

[12] See Gilmore and Black (1975), pp. 248, 263; see also Strathy and Moore (2003), p. 332; Selmer (1958), pp. 21, 180–181.

[13] See *Century Insurance Co. of Canada v N.V. Bocimar, S.A.* (*The* "*Hasselt*") (1987), 39 D.L.R. (4th) 465 (S.C.C.), rev'g. (1984), 53 N.R. 383 (F.C.A.); see also Gilmore and Black (1975), p. 258.

[14] See *Ultramar Canada Inc. v Mutual Marine Office Inc.* (*The* "*Pointe Levy*") (*1994*), 82 F.T.R. 1; *Edward and Charles Gurney v Aeneas D. MacKay* (1875), 37 U.C.Q.B. 324 at 340.

[15] See *Ainsworth v Cusack* (1858), 4 Nfld. L. R. 236; *Canadian Transport Co. Ltd. v Hunt, Leuchars Hepburn* (*The* "*City of Alberni*") (1947), 63 B.C.L.R. 262 at 264. See also rules X and XI of the YAR.

4.2.3 *Function of General Average as Insurance*

General average is one of the most ancient maritime principles to contractually *transfer risks* from ship owners to cargo owners or vice versa. Risk-transfer is an essential function of modern insurance.[16] When market insurance either did not exist at all or did not fully evolve to its modern form, general average served the function of insurance by spreading the risk of maritime losses among all the parties involved in a maritime voyage rather than leaving the full burden of a loss concentrated on ship owners or cargo owners alone. In the absence of market insurance, general average helped improve investment in the maritime sector by solving the problem of risk aversion i.e., the fear of large uncertain losses.

Risk aversion is a person's tendency to be more afraid of a larger loss even with very low probability than of a smaller loss with high probability even though the expected loss in both situations might be the same. For example, a loss of cargo worth $1,000 with 10 % probability may not be as big a concern to a cargo owner as the loss of $10,000 worth of goods with 1 % probability even though in both cases the expected loss is the same i.e., $100 ($1,000 × 0.1) or ($10,000 × 0.01). The fear would be even worse if the magnitude of the loss is $100,000 although the odds of such loss are only one-tenth of 1 % (i.e., 0.001). Here again the expected loss is only $100.

On the other hand, to a 'risk-neutral'[17] person all of the above losses will be of equal concern. In general, most people are risk-averse. However, the degree of our risk-aversion varies according to the level of wealth we have; the wealthier a person is, the less risk-averse he would be, other things being equal.[18]

Risk aversion is a source of social disutility as it either causes risk-averse people to take excessive care or discourages them from engaging in socially beneficial activities.[19] For instance, as the expected loss in all the above examples is only $100, taking precaution against such loss at a cost more than $100 would be excessive precaution. Yet, risk-averse people will tend to spend more than $100 to avoid 1 % (0.01) risk of losing $10,000 or to prevent one tenth of 1 % chance (0.001) of suffering $100,000 loss.

Alternatively, risk-averse people may decide not to engage in such an activity at all even though their expected gain might be higher than their expected loss if they engage. For example, cargo owners may decide not to take their goods via ships to distant ports despite a sure profit of $200 because of their fear of losing $10,000 worth of goods even though the possibility of such loss is only l %. Both the cost of

[16] It existed in Rhodian law (916–700 BC), from which it was adopted in Justinian Digest. The Rhodian Law explained the principle, "Let that which has been jettisoned on behalf of all be restored by the contribution of all"; Dover (1975), p. 6; see also Gilmore and Black (1975), pp. 3–4, 244.

[17] 'Risk-neutrality' is the opposite concept of risk aversion. See Shavell (2004), p. 178.

[18] See Posner (2003), pp. 10–11.

[19] Shavell (1987), pp. 11–12.

excessive care and the forgone profit from not engaging in an activity are social loss.[20]

The availability of insurance now solves the problem of risk aversion. Utilizing the available data on loss history, insurance companies can roughly determine the expected losses of an activity in the future. By charging a premium roughly equivalent to the expected losses, insurance removes this exaggerated fear from a risk-averse insured and thus facilitates investment into activities with some risks but great social benefits such as shipping.[21] In the pre-insurance era, general average served the function of insurance to some extent by transferring part of the loss from one party to another in a maritime venture and thus solved the problem of risk aversion to a limited extent.

4.3 Justifications of General Average

4.3.1 Justification of General Average in the Past

As just mentioned, the main justification of general average in the past was its function as a partial solution to the problem of risk-aversion in the absence of market insurance.[22] Since spreading the burden of losses among many individuals is essentially an insurance mechanism, general average could be termed as a form of insurance. Provision of insurance is an economically and socially desirable action because its absence in shipping business would discourage potential investors from investing in maritime ventures due to their fear of loss occurring in perilous seas. In the absence of insurance, such fear would also lead ship owners to excessive care. As discussed above, both excessive care and underinvestment are the sources of social loss.

As insurance became widely available and as both ship owners and cargo owners almost invariably insure their respective interests, the question of who bears the losses has no bearing today to the investment decision in the shipping and maritime commerce. The total volume of cargo transported via sea or the number of ships involved would be roughly the same regardless of general average. For example, if there is $1,000 loss or expenses *on average* in each maritime voyage and ship owners bear the burden of the loss,[23] their insurance premium would reflect this

[20] See Billah (2007), pp. 308–309.

[21] Billah (2007), pp. 310–311.

[22] Selmer (1958), pp. 27, 190.

[23] In the absence of insurance, a ship owner may not be able to predict the average loss arising from general average incidents as he or she would not have the information about the losses of other ship owners. Even if the ship owner has that information, it will be of no benefit to him when his losses from general average incidents are above or below the average. On the other hand, it is the average loss which matters to an insurer in calculating the premium necessary to cover the insured losses.

burden. Ship owners may pass the cost of insurance to cargo owners in the form of higher freight. On the other hand, if the loss remains with cargo owners, their freight rates should be roughly $1,000 less than what would otherwise be the case but their cargo insurance premium would be $1,000 more.[24]

Since market insurance was not available when the practice of general average first came into existence, the practice might have made some difference in the volume of cargo transported via sea or the number of ships engaged in the carriage of goods. Without general average in the pre-insurance era, some people may have been reluctant to invest in the maritime sector due to their fear of heavy losses in a marine adventure.[25] This would have led to reduced activities in the maritime sector.

Although risk-sharing through general average is much more limited than market insurance due to the small number of people involved (i.e., the individual cargo owners and ship owners in a given adventure), it *was* still an important means to manage the risk during the pre-insurance era. With the availability of insurance today, the justification of general average as a means of solving the problem of risk aversion has ceased to exist. In the absence of the above justification, we need to ask whether general average serves any other functions to justify its continued existence in today's maritime liability law. Even if it has some other function/s, we have to ask whether the benefits from those functions are greater than any negative aspects of general average.

4.3.2 Possible Justification of General Average Today

Today general average is *thought* to lead to optimal *mitigation* of losses following a peril of the sea.[26] Since the losses and expenses necessitated by general average situations would not be solely borne by the owners of the ship in distress, the owners or the master of the ship will be less hesitant to take preventive measures even at the expense of the ship such as intentional grounding of the ship to save the

The insurers can determine the average loss very easily as they would have claim statistics of all the insured.

[24] We assume here that these average losses would occur despite proper care and precaution taken by ship owners. Theoretically, if general average losses would occur regardless of any precaution, it would be irrelevant who bears the loss. General average in such circumstances would just shift the losses from one party to another. However, as we will see below, the presence of general average encourages some ship owners to take less care and thus increases maritime losses.

[25] Even though ship owners could pass some of the cost of general average in the freight rates, the burden of general average loss on individual ship owners would have been very heavy in the absence of insurance. Fear of such loss would have discouraged some from investing into shipping even though their *expected* profit would have been more than their *expected* loss. Again, this is because most individuals are 'risk averse' when it comes to risk of high loss despite the probability of such loss being very low. See Posner (2003), pp. 10–11; Abraham (1986), pp. 11–12.

[26] See Gilmore and Black (1975), p. 258.

common adventure.[27] On the other hand, if the losses or damage to ships were to remain only with ship owners, as would be the case in the absence of general average principle, there *may* be a tendency among masters and crew *not* to exercise optimal preventive measures especially when such measures would entail damage to the ships.[28]

An alternative argument goes like this. In the absence of general average, masters and crew members may make disproportionately higher sacrifice of the cargo in order to save the endangered ship and cargo. Because of loss-sharing mechanism under general average, the parties do not have to worry about which side bears the initial losses or expenses. This in turn leads to proper measures to prevent or mitigate the loss.[29] In other words, the principle of general average is *thought* to reduce unnecessary cargo sacrifice and to induce optimal care in the mitigation of loss after an actual peril or in the face of an imminent one.

These justifications, however, are very weak as they are based on some unrealistic assumptions. First of all, there hardly arises any perilous situation today when jettison of the cargo is necessary either to prevent or to mitigate the possible damage from a peril of the sea.[30] Thus, the fear of disproportionate sacrifice of cargo in the absence of general average is greatly exaggerated.[31] Second, the arguments presuppose that the master would have several 'choices' such as intentional grounding of the ship or jettison of the cargo to save the ship and cargo from the danger when faced with a peril of the sea. In reality the master may be left with only one choice to mitigate the loss in most cases of general average.[32] For example, when a master intentionally grounds the ship or jettisons its cargo, there is hardly any 'choice' for the master as to decide which interest should be sacrificed.

---

[27] For the examples of intentional grounding, see *Dancey v Burns* (1880), 31 U.C.C.P. 313 (Ont. C. A.); *Gibb v McDonnell* (1850), 7 U.C.Q.B. 356 (C.A.); see also Tetley (2008), p. 1807.

[28] See generally Selmer (1958), pp. 42, 122–124, 138–139. This was the main argument against the abolition of general average invoked in the *Report of the General Average Committee to the Council of the International Union of Marine Insurance*, (1949); cited in Selmer (1958), p. 138 note 15.

[29] *Per* Vaughan Williams L.J in *Montgomery v Indemnity Mutual Assurance Co* [1902] 1 K.B. 734 at 740 (CA), "The object of the maritime law seems to be *to give the master of the ship absolute freedom to make whatever sacrifice he thinks best to avert the perils of the sea*, without any regard whatsoever to the ownership of the property sacrificed; and, in our judgment, such a sacrifice is a general average act quite independently of unity or diversity of ownership." [emphasis added].

[30] Selmer (1958), p. 291.

[31] Selmer (1958), p. 291.

[32] The lack of choice prompts some authors (the holders of "alternative theory") to argue that such situations cannot amount to general average because one of the conditions of general average is 'voluntary' sacrifice/action and this element would be missing in such situations. Selmer (1958), pp. 72–76, 214–215.

What may be achieved by intentional grounding of the ship may not be achieved by jettison of the cargo or vice versa.[33]

Even if, for the sake of argument, we assume that the above justifications are valid, do we really need general average to achieve optimal mitigation? The answer seems to be in the negative because taking measures to mitigate the loss is a duty on the party who could do so in any incidents. A ship owner, who could mitigate the loss after a maritime incident, would be held liable for additional losses due to his failure to mitigate the loss even though the ship owner would not be liable for the initial loss caused by a peril of the sea, which by definition is unpreventable by any cost-efficient measures.[34]

4.4 Effects of General Average on Optimal Care and on Social Cost

4.4.1 Possible Distortion of Incentives Towards Optimal Care

4.4.1.1 General Average *May* Not Affect Incentives at All

The distortion of incentives to use proper care due to the presence of general average may not be obvious at first. Strictly speaking, an incident of general average occurs when a ship faces 'a peril of the sea'. By definition, a peril of the sea is an element of the sea which no optimal care could prevent from occurring.[35] As proper care would not prevent the incidents giving rise to general average, imposing liability on ship owners in such situations neither improves nor reduces the deterrent effect of liability law.[36] Absence of any deterrent effect is probably the reason why a ship owner is not liable for cargo losses caused by perils of the sea

[33] For example, when a ship in the middle of the sea might sink due to the high waves caused by heavy storm, only jettison of the cargo can lighten the ship and prevent it from the danger of sinking.

[34] See *Federal Commerce and Navigation Co. v Eisenerz-G.m.b.H.* (*The Oak Hill*), [1974] S.C. R.1225, [1975] 1 Lloyd's Rep. 105. See also *Notara v Henderson*, (1870) L.R. 5 Q.B. 346; (1872) L.R. 7 Q.B. 225; cited in Cooke and Cornah (2008), pp. 36–37, para 00.61. *Per* Hobhouse J., "The fact that the master was acting as an agent of necessity in the interests of the joint adventure does not relieve him of his duty to exercise reasonable care in the preservation of the cargo." in *Corfu Navigation Co v Mobil Shipping* (*The Alpha*) [1991] 2 Lloyd's Rep. 515, 522.

[35] 'Peril of the sea' is defined as "something so catastrophic as to triumph over those safeguards by which skilful and vigilant seamen usually bring ship and cargo to port in safety." Per Hough J. in *The Rosalia*, 264 F. 285 at 288, (2d Cir. 1920).

[36] Although under the traditional analysis there are two purposes of liability rules: deterrence and compensation, deterrence should be the main, if not the sole, purpose of liability law. This is because deterrence from negligence would lead to the reduction of accidents caused by negligence. See generally, Shavell (2004), pp. 267–269; Billah (2007), pp. 300–301.

under the cargo liability regimes.[37] Imposing liability on ship owners for cargo damage caused by a peril of the sea would amount to strict liability. Under strict liability, care may be excessive.

In other words, if general average incidents occur solely due to perils of the sea, they are situations of necessity. In such situations, greater loss might result if sacrifice of the cargo/ship or the expenses necessary to rescue the ship and cargo from the peril is not made. Deterrent effect of liability law is not affected by spreading the costs of such sacrifice and preventive measures among all the parties in the adventure as is the case with general average. Because efficient care could not prevent such perils, the application of general average principle would cause no negative impact on the number of such incidents.

As we will see below, however, an examination of the actual cases of general average reveals that some general average incidents arise at least *partially due to the negligence of ship owners or their employees* and for which ship owners would have been liable but for the general average principle. In other words, general average in these instances partially exonerates negligent ship owners from their liability and thus reduces the deterrent effect of liability laws.

4.4.1.2 Divergence in Care Level Before and After an Incident

In order to induce optimal care in the carriage of cargo, the *expected liability* of a ship owner should not be less than the *expected loss* of a cargo owner. General average contribution from cargo interests reduces the expected liability of some *negligent* ship owners. Today in most cases of general average ship owners receive contribution from cargo owners for the expenses to repair their ships at the ports of refuge.[38] Without general average, cargo owners might claim for the loss of or damage to their cargo in ship owners' care and ship owners may have to bear the expenses to repair their damaged ships caused by a maritime peril. The sharing of losses and expenses by co-adventurers lead some ship owners to *suboptimal maintenance* of their ships *before* and to *excessive care after* an incident of general average. This is according to a study by the United Nations Conference on Trade and Development (UNCTAD).[39]

To elaborate, as ship owners and cargo owners share the expenses incurred to minimize the impact of a peril in a general average situation, such sharing may distort the incentives to take optimal care in two ways. First, a shipping company may decide *not* to take optimal care to make its ship seaworthy because the cost of

[37] See article IV.1 (d) and (c) of the *Hague-Visby Rules*; article 17.3 (a) and (b) of the *Rotterdam Rules*. Although the *Hamburg Rules* do not specifically contain these exceptions, ship owners will be exonerated from any cargo liability arising from perils of the sea because of the absence of any negligence on their part. See article 5.1 of the *Hamburg Rules*.

[38] See Gilmore and Black (1975), pp. 248, 263; see also Strathy and Moore (2003), p. 332; Selmer (1958), pp. 21, 180–181.

[39] UNCTAD (1994).

furnishing a seaworthy ship falls exclusively on the ship owner, while the expenses incurred for the repair of the ship after a general average incident would be partially borne by cargo owners.[40] Secondly, as cargo owners would pay for the partial cost of care (i.e., repairs and other improvements on the ship) after a general average situation, the post-general-average care may be excessive. While inadequate care may cause some preventable losses, excessive care leads to improper use of scarce resources.

The existence of this divergence in the care level before and after a general average is shown by the findings in the UNCTAD study that older ships with less contributing value have a higher tendency to claim general average.[41] In other words, the existence of general average encourages the owners of these ships towards substandard maintenance of their ships in the knowledge that they can declare general average if they find themselves in danger and a substantial part of the costs will be shifted to cargo owners.[42]

The reason this tendency is more prevalent among older ships is that the low value of these ships reduces the proportionate contribution of their owners and increases the contribution of cargo owners.[43] Conversely, the high value of new ships will make the owners of such ships bear most of the contribution. As a result, the owners of new ships take better care. Once in danger, the owners of older ships would be more generous towards the expenses at the ports of refuge again because the substantial burden of the expenses will be passed on to cargo owners. General average thus creates a 'double-jeopardy' for cargo owners caused by some older ships. Cargo owners face high risk of 'perils' due to suboptimal maintenance of these older ships. Once faced with peril, they pay higher contribution due to the lower contributing value of these older ships.

4.4.1.3 Negligence May Be Shadowed by Peril of the Sea

The social loss from substandard ships arises due to increased number of accidents causing cargo loss in the face of 'perils.' Technically, any loss attributable to

[40] It is true that no ship owner wants his ship to suffer a maritime peril because time wasted in the repair of the ship will deprive the owner of the profit the ship could make in such time. Yet, as the odds of peril are low, a ship owner may think that it would be able to escape any such peril despite his suboptimal care.

[41] UNCTAD (1994), p. 17.

[42] It is found in a survey of 400 cases of general average that ships with 'flag of convenience' represent only 12.2 % of total number of ships but have 34.2 % of total general average incidents, indicating suboptimal care. See UNCTAD (1994), pp. 5, 17–18. This may also be corroborated by the evidence that the highest causative factor in general average incidents is the failure of ships' machinery (37 %). Many other causes such as grounding (24 %), fire (14 %), collision and contact (11 %) are also indicative of lack of proper care on the part of ship owners. See UNCTAD (1994), pp. 19–25.

[43] It can be recalled here that contribution of the parties towards general average expenses is based on the value of their respective saved interests.

suboptimal care (i.e., negligence) of the ship would *not* amount to a general average loss because the absence of negligence is a pre-requisite to general average claims.[44] In practice, however, it is sometimes next to impossible to determine each causative factor among many leading to an accident. The most apparent factor may decide the matter. For example, any damage to a ship or to the cargo onboard during a storm or heavy wind will likely be considered as general average even though a different ship in the same or similar weather condition may navigate safely.

The fact that one ship suffers loss and another passes unharmed may be an indication of suboptimal maintenance of the former. Yet such fact may be hard to establish or, when established, the reasons for the difference in the extent of loss may be difficult to explain. Unless a negligent conduct is very obvious and its presence contributed to the loss by a large degree, the presence of negligence in the maintenance of a ship is *unlikely* to prevent ship owners from claiming general average which is *apparently* caused by a peril of the sea.

4.4.1.4 Express Exoneration of Employees' Negligence

Even when negligence is an obvious contributing factor to the loss termed as general average, negligence in the operation and management of a ship by its master and crew will not deprive the ship owner from receiving general average contribution. This exception to negligent navigation and management by the crew is expressly granted by article IV.2 (a) of the *Hague-Visby Rules*,[45] the most commonly used cargo liability law. This type of negligence is a reason behind most incidents of general average today.[46] Thus the negligence of a ship's employees in a general average situation causes cargo owners to bear the losses not only for the cargo damage but also for damage to the ship.[47] This is obviously not a just situation.

---

[44] See *The Portsmouth*, 76 U.S. (9 Wall.) 682 (1870); *Western Canada Steamship Co v Canadian Commercial Corp*., [1960] S.C.R. 632; *St. Lawrence Construction v Federal Commerce and Navigation Co*., [1985] 1 F.C.767 at 788. This principle is somewhat modified by rule D of the YAR as the negligence of any party is ignored for the purpose of calculating the contribution. However, the innocent parties are able to seek reimbursements from the negligent party for any contribution they have to make due to the latter's negligence.

[45] See *Louis Dreyfus & Co. v Tempus Shipping Co*., [1931] A.C. 726; *Drew Brown Ltd. v The Orient Trader*, [1974] S.C.R. 1286, 1333. Although this was not so in the US [see *The Irrawaddy*, 171 U.S.187 (1898)], the ship owners' insertion of a clause ('Jason clause'/'New Jason clause') in the bill of lading to exclude liability in such case was upheld by the US Supreme Court. See *The Jason*, 225 U.S. 32, 32 S.Ct. 560 (1912); Gilmore and Black (1975), pp. 266–267; Selmer (1958), pp. 80–81. As the *Hamburg Rules* and the *Rotterdam Rules* do not contain this negligent navigation exception, the 'Jason clause' will not have this effect under the latter regimes.

[46] UNCTAD (1994), pp. 24–25.

[47] However, if a loss occurs or is aggravated due to the negligence of a ship owner, as opposed to the crew, in providing a seaworthy ship or in caring for the cargo, the ship owner cannot claim for

4.4.1.5 Exemption of Liability of Negligent Ship Owners

To make the matter worse, there are even situations where a loss caused by the negligence of ship owners themselves as opposed to that of their employees may give ship owners the right to claim general average contributions from cargo owners. For example, when a ship is accidentally grounded, the expenses incurred to extricate the ship from grounding are considered general average regardless of the cause/s that led to the grounding in the first place.[48] Possible causes of such grounding may, of course, include the failure of the owner to furnish a seaworthy ship.

Another indirect and partial exoneration of ship owners from liability for negligence exists due to the combined effect of general average and limitation of liability. As general average contribution has to be calculated without regard to the fault of any of the parties in the common adventure,[49] a negligent ship owner also has the right to claim from cargo owners for his loss. It may initially appear that cargo owners would be able to claim reimbursement from the negligent ship owner for the additional contribution the cargo owners made in paying both the negligent ship owner and other co-adventurers (i.e., cargo owners). Such reimbursement may be subject to the ship owner's limitation of liability.[50] Consequently, the reimbursed amount may be less than the contribution made by the innocent cargo owners under the general average principle even though such contribution would not have arisen in the first place but for the ship owner's negligence.

---

general average contribution from the cargo owners. See *Century Insurance Co. of Canada v N.V. Bocimar, S.A.* (*The* "*Hasselt*"), (1987), 39 D.L.R. (4th) 465, rev'g. (1984), 53 N.R. 383, where the ship owner was found negligent to provide proper training to the crew to extinguish fire and was consequently denied general average contribution. See also *St. Lawrence Construction Ltd. v Federal Commerce & Navigation Co. Ltd.*, [1985] 1 F.C. 767, 56 N.R. 174 (C.A.); *Western Canada Steamship Co. Limited v Canadian Commercial Corp.*, [1960] S.C.R. 632; *Canadian Transport Co. Ltd. v Hunt, Leuchars Hepburn* (*The* "*City of Alberni*") (1947), 63 B.C.L.R. 262 at 264; *Montreal Trust Co. v Canadian Surety Co.*, [1939] 4 D.L.R. 614, aff'g. (1937), 75 R.J.Q. 278; cited in Strathy and Moore (2003), p. 329 note 52.

[48] *Grover v Bullock* (1849), 5 U.C.Q.B. 297. The apparent justification was that the accidental grounding itself was a peril which endangered both the ship and cargo. Thus, the expenses to rescue the ship and cargo from such peril are general average expenses.

[49] Rule D of the YAR.

[50] Selmer (1958), pp. 81–84. Although there is no decided case on the issue of the limitation of ship owners' liability in a general average situation, it was held in *The Ettrick* (1881) 6 P.D. 127 that the payment of limited liability by a ship owner did not give him the right to claim contribution later on for general average expenses caused by their own negligence. However, there are cases where ship owners had to contribute for general average despite the validity of contractual or statutory exoneration from total liability. Such cases may be taken to infer that ship owners have to pay full contribution for general average despite the availability of limitation for their ordinary liability. See *Schmidt v Royal Mail S.S. Co* (1876) 45 L.J.Q.B. 646, *Crooks v. Allen* (1879) 5 Q.B.D. 38, *Burton v. English* (1883) 12 Q.B.D. 218 and *Greenshields, Cowie v. Stephen & Sons Ltd* [1908] A.C. 431. These cases are cited in Cooke and Cornah (2008), pp. 168–169.

4.4.2 *Possible Social Costs Arising from General Average*

General average involves certain administrative costs. Once a party suffers a loss or incurs some expenses, any cost to redistribute the damage or expenses is a social waste *unless* such redistribution would bring some social benefits.[51] As we have already seen, the redistribution or transfer of loss from one party to another through general average has no social benefit in the presence of insurance market. Thus the administrative costs incurred in the process of general average are a social waste. These costs ultimately reflect in the price of the goods carried via sea and the consumers of these goods pay higher prices.[52] Discussed below are some of these costs necessitated by the presence of general average.

4.4.2.1 Costs to Determine Various Items

First, in order to calculate the respective *contribution* the value of both the ship and the cargo has to be determined. Of course, such determination involves costs. Second, if there is any *damage* in the process of general average, the value of the damaged goods and/or the ship needs to be determined. In this regard, general average damage has to be separated from other types of damage.[53] Third, in the case of *expenses*, there is a further need to determine how much of these expenses are solely due to general average.[54]

It is true that regardless of general average whenever there is any damage or loss in a maritime incident, the market value of the damaged or lost goods and their value after the damage or loss have to be determined for the purpose of insurance

[51] For example, redistribution from a negligent party to an innocent one would deter the former from similar negligence in the future and will thus reduce social loss or increase social utility. In addition to the creation of incentives, redistribution sometimes may further increase social utility if the money redistributed has more value to its recipient owner than its initial owner. The latter benefit of redistribution is the main justification for income tax on the rich and for the income subsidy to the poor. See generally Calabresi and Melamed (1972), pp. 1089–1128.

[52] Higher price may also reduce the consumption (utility) of the goods if there are perfect substitutes to such goods.

[53] For example, damage caused by fire is not general average but the damage done in extinguishing the fire is general average. See Rule III of 1994 York-Antwerp Rules; Strathy and Moore (2003), pp. 318–319.

[54] Expenses not allowed under general average are termed as 'particular average.' These expenses are borne by individual interests for whose benefit they are incurred. However, the distinction between 'general average' and 'particular average' is sometimes arbitrary and depends mainly on their historical labelling. For example, expenses to dry wet cargo due to a general average incident are not allowed under general average and are thus 'particular average', while expenses to store the cargo safely on the shore while the ship is being repaired are considered general average. See Selmer (1958), pp. 260–261.

claims.[55] Yet, in the absence of general average there would be no need to determine the value of the goods *not* damaged or sacrificed in a maritime incident.

4.4.2.2 Costs to Obtain Bonds and Guarantee

Another source of administrative costs due to general average which would not be incurred otherwise is the transaction costs involving general average bond from cargo owners or a guarantee from their insurers.[56] Although this may cost very little if all the goods belong to just one or two cargo owners, this cost would be considerable when many cargo owners are involved.[57] Again, this administrative cost is a social waste as such cost is not offset by any benefit from general average.

4.4.2.3 Costs of Collecting Contribution

A third possible source of administrative cost flowing from the existence of general average is the costs incurred in collecting the contributions from each interest benefited from general average. Most of the time collecting contributions may involve very little administrative costs as ship owners would have already obtained bonds or financial guarantees from cargo insurers before the release of the cargo from the ships. Money secured through the bonds or guarantees will suffice in most cases of contributions.[58]

If the money deposited earlier falls short of the contribution required, there may be additional expenses in collecting the difference. Also, the cargo interests who provide the bonds incur costs in obtaining these bonds. These costs, no matter how small, would *not* be incurred but for the existence of general average.

4.4.2.4 Costs May Be More than Total Contribution

Usually ship owners will receive contributions which would be more than their settlement costs.[59] Sometimes the *total* settlement costs for both parties may be

[55] See Selmer (1958) at pp. 160–161.

[56] See Gilmore and Black (1975), pp. 249–250. If a cargo owner is not insured or his insurer's solvency is doubtful, ship owner may require cash deposit or letter of credit from a bank. See Strathy and Moore (2003), pp. 332–333.

[57] For example, in one instant the ship was carrying 920 containers under 900 bills of lading with general average claim of more than $1 million. See Myerson (1995), p. 472.

[58] See Gilmore and Black (1975), pp. 249–250.

[59] Otherwise, they would not pursue such settlement except for mistaken calculation. Such mistakes do occur as there are instances where ship owners' or their insurers' settlement costs were more than the contributions they received from cargo owners or their insurers. See Selmer (1958), p. 164.

more than the contributions ship owners receive from cargo owners.[60] As profit-maximizing rational individuals, in deciding whether or not to proceed with general average claim ship owners would not take into account the possible costs cargo owners would incur.[61]

This problem exists in any claim of adversarial nature. However, other adversarial claims like law suits may bring some social benefits in the form of incentives to take care in the future. Such benefits may offset the administrative costs of litigation.[62] No such social benefits arise from general average settlements because the payers of contributions (i.e., cargo owners) cannot do much to prevent general average incidents in the future.

4.4.2.5 Social Costs due to Moral Hazard

Even if general average is still thought desirable as a form of insurance for some *uninsured* expenses of ship owners,[63] it is insurance with a high possible moral hazard. Moral hazard is the tendency of an insured either to reduce level of care or to inflate claims due to the availability of insurance.[64] As shown above, both these tendencies exist among the owners of some older ships because of general average. These ship owners take less than optimal care before an incident of general average and spend more than usual after the incident.

In market insurance, insurers have various tools such as deductibles, policy limits, policy exceptions etc. to check the problem of moral hazard among the insured.[65] In a typical general average situation today, the position of cargo owners is comparable to that of market insurers as cargo owners provide some insurance to ship owners through general average. Yet, cargo owners cannot use any of the

[60] For example, if the cargo's contribution is $2,000 but the total settlement costs are $3,000, a ship owner would press for settlement because he would only bear half of the settlement costs with a $500 margin.

[61] See Selmer (1958), p. 164.

[62] Although some writers contend that the administrative costs in some liability settings may be more than the social benefit from litigation, no one denies the presence of such benefits. See Landes (1982), p. 49; Posner (2003), pp. 201–202; Shavell (2004), pp. 281–282.

[63] The possibility of totally *uninsured* ships is almost non-existent. Some ships, however, may be *underinsured* or there may be *deductibles*. Such underinsurance and deductibles are mostly voluntary on ship owners' part and thus negates any real *need* for general average to fill the gap between the actual value and the insured value of ships or the proportionate gap between the actual loss and the insured loss. However, there are still cases where the cargo is uninsured. Yet, because in most cases of general average contribution would flow from cargo owners to ship owners, insurance through general average is of no use for *uninsured* cargo. In fact, uninsured cargo is a problem for ship owners claiming general average as the ship owners have difficulty in securing guarantee from such cargo interests. Besides, uninsured cargo tends to be of trifling value. See Selmer (1958), pp. 190–194.

[64] See Rejda (2008), pp. 5, 31–33.

[65] On moral hazard and the insurance mechanisms to prevent it, see Billah (2008), pp. 427–461.

above insurance mechanisms to check the possible moral hazard among ship owners. Unlike marker insurers, cargo owners can neither negotiate nor attach any conditions to the payment of general average contributions to ship owners.[66] On the other hand, market insurers are able to use the above insurance tools in order to maintain the incentives in the minds of ship owners to take proper care despite the presence of insurance.[67]

4.4.3 Abolition of General Average

As general average does not seem to have any justifications today, it should be abolished from the maritime law. Designed to serve insurance function in the past, general average now outlives its intended purpose and hinders the deterrent effect of maritime liability law. The abolition of general average will not create any insurance vacuum for any of the concerned parties. In general, both ship owners and cargo owners carry adequate insurance. Following its abolition, some minor changes may be necessary in the current insurance policies as are already done in some hull insurance policies through 'absorption clauses'.[68]

4.4.3.1 Absorption Clauses as Substitute for General Average

A positive development in the context of general average is the inclusion of 'absorption clauses' in hull policies. As their name suggests, through these clauses hull underwriters undertake to absorb the insured ship owners' total losses or expenses arising from general average incidents up to a certain limit, thus making it unnecessary for ship owners to claim contributions from cargo interests.[69] Such clauses in hull insurance policies save administrative costs which would have been otherwise incurred in general average.[70]

The use of absorption clauses also proves that the abolition of general average will not cause any coverage shortage or unreasonably high premium for ship owners. When inserted in hull insurance, insurers provide coverage for the insured ship owners' losses and expenses which would otherwise fall under general average. This is so despite the availability of general average. Following its abolition, it

[66] This is simply because contributions arising from general average are determined according to YAR Rules, which are incorporated by ship owners in the contract of carriage by reference, thus giving little option for cargo owners to have any say on the matter.

[67] See generally Shavell (1982), pp. 120–132.

[68] For various wordings of 'absorption clauses', see UNCTAD (1994), pp. 11–12.

[69] See Cooke and Cornah (2008), p. 18.

[70] Saving of administrative costs is the main motivation behind such clauses. In most of the cases where absorption clauses apply, the marginal recovery (gross recover minus administrative costs) from cargo owners would have been either little or negative. See generally Selmer (1958), p. 164.

is very likely that absorption clauses would become a common feature of all hull insurance policies.

Unfortunately, absorption clauses today are not uniform. Also, some ship owners may still insist on general average contributions from the cargo interests in order to have a better claim history with hull insurers despite the presence of absorption clauses.[71]

4.4.3.2 Possible Increase in Freight Rate

It may be argued that the abolition of general average would increase the freight rates. The increased freight rates may simply be equal to the *expected* general average contribution from cargo owners today.[72] It is possible that the *expected increase in freight rate* after the abolition of general average would be less than the *expected general average contribution* today. This is because the abolition of general average is likely to induce ship owners towards better care as they or their insurance companies have to pay for all the losses termed today as general average. Improved care would logically reduce these losses. This would ultimately lower the total costs for cargo carriage i.e., freight rates plus loss of cargo during transportation.

Another reason why the expected increase in freight rates following the abolition of general average would be less than the present general average loss is that the abolition would reduce the tendency of some ship owners to incur high repair costs and port-of-refuge expenses after an incident of general average. This is simply because ship owners alone would have to bear such costs and expenses after the abolition of general average.

4.4.3.3 Salvage in General Average Situation

All versions of the YAR except the 2004 one[73] recognize the payment of salvage in a general average incident as general average expense.[74] The principle of salvage serves a valuable economic function as it helps mitigate the losses following

[71] See Selmer (1958), pp. 165, 195–197.

[72] For example, if a ship on average receives $1,000 contribution in a year from cargo interests, abolition of general average will lead to an increase of $1,000 freight rate for each ship annually because in the absence of general average ship owners or their insurers would have to bear the loss which heretofore has been borne by cargo interests.

[73] Rule VI (a) of the YAR 2004 reads: "Salvage payments, including interest thereon and legal fees associated with such payments, shall lie where they fall and shall not be allowed in general average. . .".

[74] See rule VI of YAR 1994.

maritime incidents. The generous common law salvage reward[75] encourages potential salvors to invest in salvage operations. As salvage expenses are generally considered general average,[76] they are shared both by ship owners and cargo owners.[77]

If general average is abolished, some changes would also be necessary in the law of salvage. When a peril of the sea necessitates salvage operation in order to save both the cargo and the ship from the peril, ship owners alone should bear the salvage expenses.[78] As argued before, when cargo is under the control of a ship owner, the ship owner should be responsible for the care of the cargo. If salvage is what it takes for the proper care of the cargo in a perilous situation, it should be the ship owner's responsibility. The cargo owners have no control over the cargo in such situation.[79]

Even if salvage expenses are still shared by both cargo owners and ship owners after the abolition of general average, the removal of general average principle would likely to cut the number of claim settlements involving salvage *and* general average simply because there are many cases of general average where no salvage is involved.[80]

[75] Common law salvage is to be contrasted with contractual salvage as there is no contract under the former before any salvage operation is undertaken. Interestingly the generous reward for common law salvage may be attributed also to the absence of *insurance* for salvors in the past. As salvors were more risk-averse against losing their salving vessel without insurance, stronger incentive in the form of higher reward was necessary. Since salvors, like other maritime players, today carry insurance, the reward does not have to as high as that in the past to maintain incentives. As a result, 'moiety rule' (half the value of salved property), which was minimum reward in the past, now became 'a ceiling instead of a floor.' This may, however, also be due to the high value of today's salved property. However, the value of salvage ship and instruments has also increased proportionally. See generally Gilmore and Black (1975), pp. 563–564.

[76] The YAR 2004 did not gain much support from the shipping interests. Most contracts of carriage still contain the YAR 1994. Consequently, most salvage expenses would still be considered as general average. See Cooke and Cornah (2008), pp. 64–65 in para 00.111–00.112.

[77] Although salvage expenses can be incurred without an incident of general average, costs of salvage measures become part of general average expenses once an incident is declared as general average.

[78] That is, both the cargo and the ship have to contribute to the salvage award according to their respective value. See Gilmore and Black (1975), pp. 560–562. See also Rule VI of the YAR.

[79] The only exception where a cargo owner may still need to contribute to salvage costs is when the contract of carriage is frustrated without any fault of the ship owner, e.g., when the ship is wrecked with the cargo because 'frustration of contract' absolves the ship owner from any responsibility towards the cargo. For the effect of frustration, see *Taylor v Caldwell* (1863), 3 B. & S. 826, 122 E.R. 309; *Appleby v Myers* (1867), L.R. 2 C.P. 651; *Jackson v Union Marine Insurance Co* (1874), L.R. 10 C.P. 125. Some of today's general average situations may also amount to frustration of contract.

[80] Prof. Selmer investigated all the incidents of general average in Norway for the year 1952 and found that out of 82 cases of general average only 26 (or about 30 %) cases involved salvage. He also investigated 367 cases adjusted by one Swedish adjuster for the period 1946–1955 and found only 102 (or 27 %) cases were general average. See Selmer (1958), pp. 180–181, 203.

4.5 Conclusion

It is our innate human nature that we are afraid of leaving our comfort zone and abandoning our familiar territory. We like to stick to our existing practices even though some of such practices have lost their original justifications. They may now bring more harm than benefit. General average is one of such practices. Its historical justification lies in its function as insurance in the pre-market insurance era. The presence of modern market insurance obviates any practical need for general average. On the contrary, its presence may and does encourage some ship owners to maintain substandard ships as the losses caused by these ships would not be fully borne by their owners but would be passed on to cargo interests in the name of general average.

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven

Bennett HN (2006) The law of marine insurance, 2nd edn. Oxford University Press, Oxford

Billah M (2007) Economic analysis of limitation of shipowners' liability. Univ San Francisco Maritime Law J 19:297–319

Billah MM (2008) Incentive effect of liability rules in the presence of liability insurance in the maritime law context: an economic analysis. Dalhousie Law J 31:427–461

Calabresi G, Melamed AD (1972) Property rules, liability rules, and inalienability: one view of the cathedral. Harv Law Rev 85:1089–1128

Cooke JHS, Cornah RR (eds) (2008) Lowndes and Rudolf: the law of general average and the York-Antwerp rules, 13th edn. Sweet & Maxwell, London

Dover V (1975) A handbook to marine insurance: being a textbook of the history, law and practice of an integral part of commerce for the businessman and the student, 8th edn. Witherby & Co. Ltd, London

Gilmore G, Black CL Jr (1975) The law of admiralty, 2dth edn. Foundation Press Inc., New York

Gold E et al (2003) Maritime law. Irwin Law Inc., Toronto

Landes EM (1982) Insurance liability and accidents: a theoretical and empirical investigation of the effect of no-fault accidents. J Law Econ 25:49–66

Myerson HL (1995) General average – a working adjuster's view. J Marit Law Commer 26:465–474

Posner RA (2003) Economic analysis of law, 6th edn. Aspen Publishers, New York

Rejda GE (2008) Principles of risk management and insurance, 10th edn. Pearson Education Inc., Boston

Selmer KS (1958) The survival of general average: a necessity or an anachronism? Oslo University Press, Oslo

Shavell S (1982) On liability and insurance. Bell J Econ 13:120–132

Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge

Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge

Strathy GR, Moore GC (2003) The law and practice of marine insurance in Canada. Butterworths, Ontario

Tetley W (2008) Marine cargo claims, 4th edn. Thomson Carswell, Quebec

UN Conference on Trade and Development (UNCTAD) (1994) The place of general average in marine insurance today. http://r0.unctad.org/ttl/docs-legal/rep-doc/The%20Place%20of%20General%20Average%20in%20Marine%20Insurance%20Today.pdf. Accessed 01 Sept 2013

Chapter 5
Maritime Cargo Liability Law in Light of Insurance Realities

5.1 Introduction

As repeated throughout the book, liability rules may serve two functions: deterrence and compensation.[1] Deterrence from negligence is the main purpose of liability under an economic analysis.[2] Compensation would be important when liability claimants are not insured. This is because compensation only transfers the burden of loss from one party to another, while deterrence reduces possible losses by inducing a liable party to take care.

In the context of maritime cargo liability, both ship owners and cargo owners are almost always insured against their respective liability or loss.[3] Yet some provisions in the maritime cargo liability law exist mainly to provide for indirect insurance. These provisions contain, *inter alia*, the two principles discussed in the preceding two chapters i.e., general average and limited liability. In the pre-insurance era, these principles *served* the function of insurance either by transferring part of possible losses from more risk-averse people to less risk-averse people or by spreading the loss among ship owners and cargo owners.[4] With well-developed insurance market today, the justifications of these concepts can be questioned. Unfortunately, the new cargo liability regime adopted by the UNCITRAL, the *Rotterdam Rules*,[5] did not make any changes on these principles.

[1] See Brown (1978–1979), p. 111.

[2] See Shavell (2004), pp. 267–269.

[3] For empirical evidence, see *infra* Sect. 5.5.

[4] As compensation served the function of insurance, we will use the words 'compensation' and 'insurance' interchangeably. We will also use the word 'compensation' in a broader sense in that when a liable person does not have to pay at all or pay only partially for the loss generated from his activity, he is compensated at the expense of victim. The principle of limitation of liability is thus designed to compensate ship owners.

[5] Convention on Contracts for International Carriage of Goods Wholly or Partly by Sea, Dec. 11, 2008, G.A. Res. 63/122, U.N. Doc. A/RES/63/122 [hereinafter the *Rotterdam Rules*].

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_5, © Springer International Publishing Switzerland 2014

Generally, the maritime cargo liability laws do serve the function of *deterrence* because the presence of negligence is the basis of liability under all three conventions on cargo liability.[6] Also, some rules of cargo liability, though initially intended for compensation or insurance, have been gradually modified to include deterrence function. These rules include strict liability on common carrier, the absolute warranty of seaworthiness, and automatic cancellation of the contract of carriage after deviation.

After a brief description of cargo liability regimes in Sect. 5.2 and the economic analysis of liability law in Sect. 5.3, the chapter examines the functions of negligence-based cargo liability law together with its exceptions in Sect. 5.4.1. The main function of this law has always been deterrence from negligence. Section 5.4.2 examines those cargo liability rules which are intended mainly for compensation or insurance. Section 5.5 contains some empirical evidences on the insurance practice in maritime cargo transport setting. With these evidences, the chapter concludes that the sole function of maritime cargo liability law should be deterrence from negligence and neither compensation nor insurance.

5.2 Cargo Liability Regimes in Brief

The loss of or damage to cargo during transportation occurs in a contractual setting. The contracts of carriage between ship owners and cargo owners are evidenced by bills of lading or other similar documents.[7] They are governed either by the *Hague-Visby Rules*[8] or the *Hamburg Rules*.[9] The new convention on cargo liability law, the *Rotterdam Rules*, is not yet in force.[10]

[6] They are the *Hague-Visby Rules* [the International Convention for the Unification of Certain Rules of Law Relating to Bills of Lading, Aug. 25, 1924, 51 Stat. 233, 120 L.N.T.S. 155 as amended by its 1968 Protocol, 2 U.N. Register of Texts Ch. 2, at 180], the *Hamburg Rules* [the United Nations Convention on the Carriage of Goods by Sea, Hamburg, Mar. 31, 1978, U.N. Doc. A/Conf. 89/5, (1978) 17 I.L.M. 608] and the *Rotterdam Rules*.

[7] Although cargo is also carried under charterparties, we will confine our discussion mainly to non-charterparty situations because charterparties are not generally governed by the current cargo liability regimes except when a third party consignee is involved. See article V of the *Hague-Visby Rules*; article 2.3 of the *Hamburg Rules*; and articles 6.1 (a) and 7 of the *Rotterdam Rules*.

[8] Canada is not party to any of the cargo liability conventions but incorporated the *Hague-Visby Rules* in its *Marine Liability Act*, S.S.2001, c.6, Part 5 and Sch. 3. On the other hand, the United States is party to the *Hague Rules* and implements the convention with slight modification through its *Carriage of Goods by Sea Act of 1936*, 49 Stat. 1207, former 46 USCA Appx §§ 1300–1315.

[9] It entered into force on Nov 01, 1992. See Force (1995–1996), p. 2053.

[10] As of 02 September 2013, only two states, Spain and Togo, ratified the convention. See http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XI-D-8&chapter=11&lang=en. Accessed 02 September 2013. According to its article 94, 20 ratifications are required for it to come into force.

The main basis of liability under all these conventions is negligence. Under the *Hague-Visby Rules*, ship owners would be negligent if they fail to fulfill any of their two main duties. The duties are: (1) to exercise due diligence to make their ships seaworthy at the commencement of the voyage, and (2) to properly carry and care for the cargo during the voyage.[11] In other words, ship owners are liable only for their negligence either in making the ship seaworthy or in caring for the cargo.[12]

The presence of negligence is also the basis of liability under the *Hamburg Rules*. Whenever there is any loss or damage to cargo, negligence on the part of the ship owner is presumed. However, the presumption can be rebutted by the ship owner by proving that he or she "took all measures that could reasonably be required to avoid the occurrence and its consequences."[13] In other words, as long as ship owners can prove that there is no negligence on their part, they bear no liability for cargo damage or loss. The *Rotterdam Rules* also provides the same basis of liability.[14]

Despite the similar basis of liability, the burden to prove or disprove negligence is not on the same side under all the three conventions. Under the *Hague-Visby Rules*,[15] the burden is mainly on cargo owners to prove the negligence of an alleged ship owner. Under the *Hamburg Rules* and the *Rotterdam Rules*, the alleged ship owners have to disprove any negligence on their part. Although shifting this burden from one side to another may make a world of difference in the actual cases,[16] the basis of liability is same under all these regimes. It is negligence as opposed to either strict liability or no liability (i.e., loss lies where it falls).

This negligence-based liability law is further clarified by enumerated 'exceptions' in article IV.2 of the *Hague-Visby Rules*. Most of these exceptions are not exceptions to the negligence-based liability law but are 'explanations' of the negligence rule itself. However, two of them are real exceptions to the negligence rule. They are: the exemption of ship owners from the liability for negligent navigation and management of a ship by their employees,[17] or for fire damage caused by the negligence of the employees.[18] These real exceptions are objectionable under an economic analysis and we will shortly discuss the reasons. The good news is that none of these two exceptions appears in the *Hamburg Rules*[19] or in the

[11] Articles III and IV.1 of the *Hague-Visby Rules*.

[12] See Gilmore and Black (1975), p. 169.

[13] See article 5.1 and Annex II of the *Hamburg Rules*.

[14] See article 17 of the *Rotterdam Rules*.

[15] *Cf.* Gilmore and Black (1975), pp. 183–185.

[16] See Gilmore and Black (1975) at p. 141.

[17] Article IV.2 (a) excludes the ship owner from liability due to "[a]ct, neglect, or default of the master, mariner, pilot, or the servants of the carrier in the navigation or management of the ship."

[18] Article IV.2 (b) gives a ship owner exemption from liability for "[f]ire, unless caused by the *actual fault or privity of the carrier*." (Emphasis added).

[19] The *Hamburg Rules* do not contain a 'laundry list' of exceptions. Although few of the exceptions are mentioned in its sections, they are mainly based on reasonable care on the part of the ship owner. See Force (1995–1996), pp. 2065–2069.

Rotterdam Rules.[20] The bad news is that most shipping and maritime nations still follow either the *Hague Rules* or its amended version, the *Hague-Visby Rules*.[21]

Another objectionable feature in all the cargo liability regimes is the concept of limited liability. This means that even when ship owners are held liable for negligence, their liability could be limited in amount.[22] Finally, all the cargo liability regimes preserve the principle of general average.[23] These two concepts were originally designed to serve *insurance* function and now may affect the deterrent effect of liability. With the affordable market insurance, they lost their historical justifications.

5.3 Economic Analysis of Liability Rules

As mentioned at the beginning of the chapter, liability rules may serve two functions: deterrence from negligence, and the compensation of a party who suffered losses.[24] While the first function has a direct economic benefit in reducing loss or damage by inducing a potentially liable party to take care, the economic benefit from the second function is not so obvious. This is because when a loss occurs, the compensation of a claimant by a liable party only shifts money from the latter to the former and may not increase the total utility.[25] However, the transfer of risk through compensation may serve an important economic function if and only if the parties are not insured *and* the victims are more risk-averse than the injurers.[26]

In today's maritime cargo transport setting, both cargo owners and ship owners are invariably insured against their respective cargo loss and liability. A cargo owner will be compensated through cargo insurance regardless of the liability of ship owners. This reduces the importance of compensation (or solving the problem

[20] Although the *Rotterdam Rules* contain a list of exceptions, the list does not include the above two.

[21] See Tetley (2003–2004), p. 1.

[22] See article IV.5 (a) of the *Hague-Visby Rules*, article 6.1(a) of the *Hamburg Rules*, and article 59.1 of the *Rotterdam Rules*.

[23] Article V of the *Hague-Visby Rules*; article 24 of the *Hamburg Rules*; article 84 of the *Rotterdam Rules*.

[24] To be sure, however, legislatures and courts do not always give equal importance to these two functions of liability laws. One function may weigh more than the other in the decisions and public policies. See generally Fleming (1985), pp. 1–18.

[25] There is caveat to the statement; that is, transfer of loss from more risk-averse to less risk-averse through liability rules can serve a society's distributional goal and can increase social welfare or utility. This is because a dollar has more value or utility to a poor person (usually more risk-averse) than to a rich person (less risk-averse) due to 'diminishing marginal utility' of wealth with the growth of wealth. Such transfer is, however, done more efficiently through tax law than liability law. See Shavell (2004), pp. 648–649.

[26] See the reasons for 'distributional goal' of liability rule in the above note. These reasons will be further elaborated *infra* Sect. 5.4.2.

of risk aversion) through the imposition of liability. Therefore, the main function of cargo liability law should be the deterrence from negligence or the creation of incentives in the minds of ship owners to take proper care of the cargo.[27]

5.4 Economic Analysis of Cargo Liability Regimes

5.4.1 Function of Liability Rules: Deterrence

5.4.1.1 Deterrence When Care Is Cost-Effective

We have seen that negligence is the basis of liability in all the maritime cargo liability regimes. The main function of negligence or fault-based liability is *deterrence* from negligence or the creation of incentives towards optimal care.[28] If there were no liability for negligence and thus losses lie where they fall, ship owners would not spend money on precautionary measures especially when cargo owners are not able to verify the ship owners' care level. Negligence is simply the failure to take reasonable care. Care is reasonable if and only if the cost of care is less than the *expected* loss. For example, if the cost of care is $90 and it would eliminate an expected loss of $100, not taking care would amount to negligence. In a sure loss situation, people are hardly negligent.

Most of the time, however, the occurrence of a loss is uncertain and probabilistic, while the cost of care is certain. As discussed in the preceding chapters, losses are, therefore, expressed in the *expected* or *probability-discounted figure* under an economic analysis. For example, if there is 10 % probability of a loss of $1,000, the expected loss is $100 (10 % × $1,000). The optimal care here would be any amount less than $100 if such care would completely prevent the loss. Care may not *prevent* the loss; it may only *reduce* the probability. In the latter situation, care would be optimal if the cost is less than the difference in the expected liability before and after taking the precautionary measure. Not taking optimal precaution amounts to negligence.

We have seen in the earlier chapters the use of 'Hand Formula' in economic analysis to define negligence. Under this formula, negligence occurs when $B < PL$,

[27] See Shavell (2004), pp. 267–269, 647–649.

[28] Strict liability, on the other hand, focuses mainly on compensation. It may or may not produce deterrence depending on the nature of the loss. If certain losses are inevitable regardless of proper precaution, imposing strict liability will not serve the goal of deterrence. Deterrence will result from strict liability only when the loss is preventable with proper precaution. In the latter situation, strict liability may, in fact, produce stronger deterrent effect than negligence-based liability law. See Shavell (1987), pp. 8–9; Shavell (2004), pp. 98–99 and 189.

where B represents the cost of care, P the probability and L the loss.[29] Although neither courts nor ship owners determine reasonable care and the expected liability in mathematical terms, courts' rulings on negligence and on reasonable care roughly approximate such calculation.[30]

5.4.1.2 Objectionable Exceptions Under the *Hague Rules*

Not imposing liability for negligence may lead to more cargo loss or damage because ship owners would have no incentives to take proper precautionary measures in the absence of liability.[31] Unfortunately, this is the case in two of the exceptions or exonerating situations under the *Hague-Visby Rules*: a ship owner is not liable (1) for any "act, *neglect*, *or default* of the master, mariner, pilot, or the servants of the carrier in the navigation or in the management of the ship,"[32] and (2) for any loss from "fire, unless caused by the actual fault or privity of the *carrier*."[33] Although in both cases it is the negligence of the employees of a ship owner which is the cause of the loss, the absence of liability on the employer ship owner would make them even more careless as they would face no consequences for their actions.

It may be argued that the negligent navigation or management of a ship also puts the ship at risk. Therefore, the owner of the ship may be motivated to take

[29] *U. S. v. Carroll Towing Co*., 159 F.2d 169 at 173 (2d Cir. 1947). See also Posner (2003), p. 168; Shavell (1987), pp. 19–20 note 23.

[30] Courts-determined standards of 'reasonable care' in negligence settings will usually vary with the cost of care and the risk of harm arising from lack of care. The greater the harm or the higher the likelihood of its occurrence, the higher would be the standard of 'reasonable care'. For example, in a narrow channel where the probability of accident is higher in the absence of care, the standard of reasonable care is correspondingly higher. Care in such situation includes slowing the speed (slow navigation means more time for the transportation of cargo, which translates into more cost for the ship owner) and employing pilots (thus incurring the pilotage fees). See *The Alletta*, [1965] 2 Lloyd's Rep. 479 (where master's failure to use the service of a pilot caused an accident; the master was held negligent, even though pilotage was not compulsory). See generally, Shavell (2004), pp. 190–192.

[31] "If . . . the ship owner were immune from all liability for loss or damage which could have been avoided by physical precautions taken while the goods were in his custody, he would have no commercial inducement to expend money on precautions to preserve the cargo from loss or damage which were not also required for the safety of the vessel, *even if the cost were small in comparison with the resultant reduction in the risk of loss or damage*." Diplock (1970), p. 527 (emphasis added).

[32] Article IV.2(a) of the *Hague-Visby Rules* (emphasis added).

[33] Article IV.2(b) of the *Hague-Visby Rules* (emphasis added) i.e., negligence of master and crew in causing fire is excluded.

reasonable care[34] by self-interest despite the absence of any liability.[35] Yet, in the absence of liability a ship owner's incentives towards care would be weak because the financial burden from the loss of the ship alone is obviously less than the financial burden from the loss of the ship and the liability for the cargo loss together. To put it differently, a rational ship owner may weigh the cost of care against his or her own benefit only as opposed to the total benefits from such care to the ship and cargo.[36] In assessing the cost of care and the benefit from such care, the ship owner would take into account the benefit of care only to the ship, while efficiency requires that the ship owner consider the overall benefit from the care to the ship and the cargo.

It may be further argued that in the absence of liability ship owners would still consider the benefit of care to the cargo to improve their business reputation. However, for the fear of reputation to work as incentive in the minds of ship owners, *cargo owners must have perfect information* about each ship owner's care level. Cargo owners then would transport their goods on those ships in which the 'full cost' of transportation would be the lowest.[37] The full cost consists not only of how much freight charge a cargo owner pays to a ship owner but also the additional cost arising from the expected loss or damage to the cargo.

To elaborate, assume the freight rate for the transport of a particular quantity of cargo varies from $50 to $100 and the expected cost from cargo loss/damage ranges from $10 to $100 depending on care. Even if a ship owner offers the lowest freight rate i.e., $50, a cargo owner may not do business with that ship owner when the full cost is very high, say $150 in total because of the possible cargo loss of $100. The cargo owner may choose another ship owner who charges the highest freight rate (i.e., $100) because the expected cargo damage on that ship is only $10, thus lowering the full cost to $110 only. In reality, it is next to impossible for a cargo owner to have such perfect information on full cost. In the absence such information and in the absence of liability on ship owners for the negligence of their employees, ship owners are unlikely to take into account the possible cargo loss when deciding the precautionary measures. Thus, the above two exceptions in the *Hague-Visby Rules* are very likely to affect the incentives of ship owners towards proper care.

---

[34] Care in this context involves mainly employing adequate number of well-trained and certified crew members. As crewing cost is highest operational cost, there is a tendency among ship owners to employ insufficient and under-trained crews in order to save costs.

[35] Diplock (1970), p. 528; Gilmore and Black (1975), pp. 143–144.

[36] For example, with 10 % probability of $500 worth of damage to ship and $500 worth of cargo loss, ship owner may not take care in the absence of liability when the cost of care is $90 even though such care would completely eliminate the risk. However, with liability for negligent navigation he will take care as the net benefit from care will be $10 [$100 (10 % × $1,000) − $90] instead of net deficit of $40 in no liability situation [$50 (10 % × 500) (damage to ship) − $90 (cost of care)].

[37] See Shavell (1987), pp. 51–53.

5.4.1.3 Liability in a World of Perfect Information

In fact, the need for the liability law arises due to our lack of information on various aspects of care and loss. If a cargo owner were to have perfect information about the cost of care and the possible risk of cargo loss, optimal care would always be taken either by the cargo owner or by the involved ship owner regardless of liability law. This is the insight of the 'Coase theorem.'[38] The theorem states that parties would take optimal care regardless of liability rules if the transaction cost is zero or less than the sum of total gain from the transaction.

The theorem can be illustrated by a hypothetical example. Assume that in a cargo transport situation the only relevant aspect of care is the sufficiency in the number of crew members.[39] Suppose also that each crew member's wage for a single trip is $90 and the possibility of cargo loss increases by 10 % with one less crew member. If the value of the cargo is $1,000, the expected loss with 10 % possibility would be $100 (10 % × $1,000). Here employing one less crew member would amount to negligence as the wage of one crew member ($90) is less than the expected loss.

If both cargo owners and ship owners have this information, the adequate number of crew members would be employed regardless which side bears the liability or loss. If ship owners bear the liability for the loss, they would hire the additional crew member because the wage of the crew member is less than the ship owners' expected liability. On the other hand, if there is no liability on ship owners and the loss remains with cargo owners, cargo owners would pay ship owners to appoint that additional crew as this would prevent $100 cargo loss at a $90 wage. Due to the presence of perfect information, liability rules do not make any difference in the ultimate decision about care.

In reality, however, the information on optimal care and on the possible loss is imperfect. Because of imperfect information to a cargo owner or the asymmetry of information between a ship owner and a cargo owner there may not be any agreement on who should take care in the absence of liability rules. For example, in the above example the cargo owner may think the wage of an additional crew for the trip is $80 instead of $90 or may not know exactly how many crew members the ship needs in a particular voyage. In such case, mutually beneficial agreement with regard to taking care may not occur. Imposing liability on the party who can take care at a cheaper cost would bypass this information problem in inducing optimal care.

In addition, obtaining information involves cost. Costs are also incurred by the parties in negotiating and in reaching an agreement about care in the contract of

[38] Coase (1960), pp. 1–23. For the 'Coase theorem' to hold true, the following assumptions have to be made: the parties are rational; transaction cost for each side is zero or less than the net benefit for each side; their negotiation is not affected by their relative wealth. See Coleman (1982), pp. 10–11.

[39] Of course, in a real case there will be many aspects of care such as seaworthiness and cargo-worthiness of the ship, proper stowing of the cargo, proper training of the crew etc.

carriage. All these costs can be avoided simply by imposing liability on the party who has better information about proper care and/or who can take such care with less cost. Proper liability rules will thus save the cost of information, negotiation and conclusion of a mutually beneficial agreement.[40]

Many authors mention two reasons for imposing liability on ship owners for cargo loss or damage. They are the 'inequality of bargain' between ship owners and cargo owners[41] and the absence of real 'freedom of contract' in the contract of carriage.[42] The possession of perfect information by cargo owners would have made these reasons irrelevant. If cargo owners had perfect information as to the exact cost of care and as to which ship owner in fact takes care, they would offer the cost of care to that ship owner in the absence of liability[43] or ship owners themselves would take care in the presence of liability. With perfect information, liability law would not make any difference in terms of actual care.

Cargo owners may lack the information as to the cost of actual care. Even if they know about the exact cost, they may not know or are unable to verify whether a particular ship owner has taken care or not. In the absence of information, cargo owners may not credit those ship owners who actually take care through higher freight rates. Consequently, ship owners will not take care in the absence of liability. The imposition of liability on ship owners under all the conventions on cargo liability is thus important to maintain incentives towards care. On the other hand, the absence of liability for negligence in the two exceptions of the *Hague-Visby Rules* (negligent navigation and fire caused by crew) may lower the incentives towards care. The absence of proper care may cause more incidents of cargo loss or damage. As a result, the prices of goods shipped under the *Hague-Visby Rules* might be higher.

5.4.1.4 Other Exceptions in the Cargo Liability Law

The other exceptions under the cargo liability laws do not interfere with the deterrent effect of liability law. These exceptions either directly or indirectly require absence of negligence on the part of a ship owner. There is a list of exceptions to the liability of ship owners in the *Hague-Visby Rules* and in the *Rotterdam Rules*. The exceptions can be grouped together into four categories: (a) natural incidents, (b) the acts of third parties, (c) the acts of cargo owner or the

[40] Coase (1960), pp. 15–16.

[41] Gilmore and Black (1975), pp. 146–147, 198–199; Sturley (2004), pp. 140–143; Sturley (2003–2004), p. 89.

[42] Sturley (2004), pp. 140–143.

[43] This would be true even if the market is not competitive (absence of freedom of contract) and even if there is 'inequality of bargaining power' between a ship owner and a cargo owner. Lack of perfect information may be identified as the root cause of the problems of unequal bargain and the absence of real freedom in contract.

defect in the goods, and (d) certain reasonable acts of ship owners or their employees.

Under the category of 'natural incidents' fall the "act of God", "perils, dangers and accidents of the sea or other navigable waters" (perils of the sea).[44] An 'act of God' is a natural incident without any human intervention that could not be "prevented by any amount of foresight and pains and care reasonably to be expected from [a ship owner]."[45] 'Peril of the sea' is defined as "something so catastrophic as to triumph over those safeguards by which skilful and vigilant seamen usually bring ship and cargo to port in safety."[46] Although an act of God is not necessarily a peril of sea,[47] an act of God on the sea and a peril of sea may be one and the same thing.

What is important for our purpose here is that the definitions of an act of God and a peril of the sea make it clear that such acts are *beyond the control* of a ship owner and these acts may occur even to a seaworthy ship.[48] Thus the imposition of liability on ship owners for such acts will not create any incentives towards optimal care. Liability in such situation may in fact lead a ship owner to take excessive care. Care is excessive when the cost of care is more than the benefit in either the elimination or reduction of the expected loss. Liability in such cases would amount to strict liability without any corresponding justification for strict liability in such case. Strict liability is justified when it is difficult or almost impossible for courts to determine the actual care taken by an injurer *and* the failure to take such care is significant in terms of actual loss or damage.[49] An extreme example of such a situation would be the liability for a nuclear accident.

Under the second group of exceptions the list of acts is long but their common characteristic is that they are caused by third parties. They are an "act of war", an "act of public enemies", "arrest or restraint of princes, rulers or people, or seizure under legal process", "quarantine restrictions", "strikes or lockouts or stoppage or restraint of labour from whatever cause, whether partial or general", "riots and civil commotions".[50] Some of these acts are done by public authorities (whether political

[44] Article IV.1 (d) and (c) of the *Hague-Visby Rules*; article 17.3 (a) and (b) of the *Rotterdam Rules*.

[45] *Nugent v. Smith*, [1876] 1 C.P.D. 423 at 444; cited in Gilmore and Black (1975), p. 163 note 71. See also *Turgel Fur Co. Ltd. v. Northumberland Ferries Ltd.* (1966), 59 D.L.R. (2d) 1 (N.S.S.C.); Gold et al. (2003), p. 459 note 271.

[46] Per Hough J. in *The Rosalia*, 264 F. 285 at 288 (2d Cir. 1920); See also *The Xantho* (1887), 12 App. Cas. 503 at 509 (per Lord Herschell); *Charles Goodfellow Lumber Sales Ltd. v. Verreault*, [1971] S.C.R. 522 at 535 (*per* Ritchie, J.); cited in Tetley (2008), pp. 1038–1041; see also Gold et al. (2003), p. 459.

[47] Gold et al. (2003), p. 459.

[48] Gilmore and Black (1975), pp. 162–163.

[49] Shavell (1987), p. 30; Shavell (2004), pp. 197–198.

[50] Article IV.2 (e–h), (j) and (k) of the *Hague-Visby Rules*; see also article 17.3 (c–e) of the *Rotterdam Rules*. While some of the categories relating to arcane language of the *Hague-Visby Rules* such as 'restrain of prince' were deleted from the *Rotterdam Rules*, a new category ('terrorism') is added to this group; see article 17.3 (c).

acts such as war, administrative acts such as quarantine, or judicial acts e.g., seizure under legal process). Other acts are committed by the members of public under certain situations of political unrest.

Again what is important for this category of acts is that ship owners have to prove that they were in no way negligent for the cargo loss or damage. Imposing liability on ship owners for someone else's act does not create incentives and would fail to serve the main function of liability unless they have aggravated the situation. For example, even if ship owners may not have any control over a strike, they would still be negligent in knowingly proceeding to a strike-bound port with perishable cargo when there is an alternative safe port.[51]

The third group of exceptions contains the "act or omission of the shipper or owner of the goods, his agent or representative," "wastage in bulk of weight or any other loss or damage arising from inherent defect, quality or vice of the goods," "insufficiency of packing," "insufficiency or inadequacy of marks."[52] All these are situations where the fault or the defect lies either with the cargo owners or in the goods itself, and the loss should thus rightly lie where it falls.

The role of liability law in creating incentives is a two-way street. Negligence rule creates incentive to take care not only in the minds of ship owners but also in the minds of cargo owners. The failure of cargo owners to properly pack and mark their cargo will make them bear the loss or damage under the cargo liability law. As taking care involves cost, rational cargo owners would not take appropriate care if they can claim for the loss or the damage caused by their own negligence from ship owners, as might be the case under strict liability.[53] Negligence rule is thus the best liability rule under ordinary circumstances when both parties can take care *and* courts can determine the level of care taken by each side.

In the case of 'inherent defect or vice' of a goods causing loss or damage,[54] neither a ship owner nor a cargo owner has any control in preventing such loss. Liability rule has no role to play in such case at least in terms of creating incentives. As the main function of liability rule is to create incentives to take care, it does not make any difference from the point of economic efficiency either to impose liability on ship owners or to let cargo owners bear the loss in such situation.[55] The same can be said with regard to all those exceptions where losses occur without anyone's lack of care such as the act of God, war, or strike.

The fourth and the final group of exceptions includes "saving or attempting to save life or property at sea," "latent defects not discoverable by due diligence," and

---

[51] *Crelinsten Fruit Co. v. Mormacsaga* (*The*), [1968] 2 Lloyd's Rep. 184 (Ex. Ct.). See also *United States v. Lykes Bros. Steamship Co*, 511 F.2d 218 (5th Cir. 1975); cited in Gold et al. (2003), at p. 460 note 279.

[52] Art. IV.2 (i), (m–o) of the *Hague-Visby Rules*; art. 17.3 (h), (j), and (k) of the *Rotterdam Rules*.

[53] See generally Shavell (1987), pp. 9–20; Shavell (2004), pp. 182–192.

[54] An example of inherent vice is that flour shrinks and loses weight during the voyage. See Tetley (2008), pp. 1142–1143.

[55] See *infra* Sect. 5.4.2.

"any other cause arising without the actual fault or privity of the ship owner, or without the fault or neglect of the agents or servants of the ship owner. . ."[56] It is clear here that even though the loss or the damage is caused in these situations by an act or omission of ship owners or their employees, such act and omission are *not* due to their lack of care, thus implying the absence of any deterrent effect from liability rule.

The 'catch-all' provision of article IV.2 (q) would have sufficed for the whole negligence-based cargo liability law. This is because absence of fault or negligence is the all-encompassing requirement in all the cargo liability regimes for ship owners to be exonerated from liability for the damage to or the loss of cargo under their care.[57]

Although these exceptions are not specifically mentioned under the *Hamburg Rules*, they would be equally applicable to ship owners under the *Hamburg rules*' 'presumptive fault'-based liability.[58] For example, the loss of a cargo due to an act of God (an example from the first group of exceptions), war (an incident in the second group), defect in the goods (an item from the third group), and the latent defect in the ship (a fourth-group situation) would be exempted under the *Hamburg Rules* because the involved ship owners could prove the absence of their fault in causing or aggravating the loss in all these cases.

As mentioned before, the *Rotterdam Rules* contain most of these exceptions.[59] Under the *Rotterdam Rules* ship owners are also exonerated from liability for cargo loss or damage arising from reasonable measures to protect environment.[60] This may be grouped together with the fourth group of exceptions under which ship owners are not liable for the loss of cargo in their reasonable attempt to save life and property. The increasingly higher value of the environment makes such measures more cost-justified today than ever before.[61]

5.4.1.5 Liability for the Employees' Negligence

To maintain proper incentives, liability should be imposed on every one who can take care whether such persons are ship owner, cargo owners, their servants, agents, or independent contractors. However, the employees of a ship owner may not have the assets to pay for their liability. Imposing liability on someone who is *unable* to

[56] Art. IV.2 (l), (p) and (q) of the *Hague-Visby Rules*; art. 17.3 (g), (l), and (m) of the *Rotterdam Rules*.

[57] See *supra* Sect. 5.2 the discussion on the basis of cargo liability laws.

[58] See article 5(1) and Annex II of the *Hamburg Rules*; see also Force (1995–1996), pp. 2065–2069.

[59] Article 17.3(a–o) of the *Rotterdam Rules*.

[60] Article 17.3(n) of the *Rotterdam Rules*.

[61] The increasing value of the environment is due not only to the decreasing number of such resources but also to the increase of their aesthetic value in the eyes of the public. On the question of valuation of environmental resources, see Grady (1980–1981), p. 397.

pay may not create proper incentives to take care. This is because potentially liable parties who cannot pay their full liability may find the optimal cost of care more than their expected liability and thus may decide not to take care despite liability.[62] In addition, due to the low or no likelihood of obtaining compensation from such liable parties, liability claimants' cost of litigation may exceed their expected gain.[63]

As we have seen earlier, imposing liability on ship owners induces them to take care when the cost of care ($90) is less than their expected loss or liability of $100 (10 % × $1,000). The actual loss or liability amount here is $1,000. If a liable party has assets less than $1,000, say $500, he may not take care as his excepted liability ($500 × 10 % = $50) is more than the cost of care ($90). Also, a cargo owner, whose litigation cost is more than $500, will not sue such a party even if the cargo owner is certain to win the case because the liable party can only pay the cargo owner $500 maximum.[64]

In other words, the inability to pay for full liability distorts both the incentive of a potentially liable party to take care and the motivation of a liability claimant to sue a liable party. The incentive to take care would be further diluted if potentially liable parties think that they would not be sued at all. That is why it is economically efficient to impose *vicarious liability* on employers for the negligence of their employees,[65] who may not be induced to take optimal care by the fear of liability which they cannot pay for. However, employers may induce their employees to take care by some internal monetary disciplines and through the threat of firing.

All the conventions on cargo liability law impose liability on ship owners for the fault and neglect of their master and crew.[66] As discussed earlier, however, under the *Hague-Visby Rules* ship owners are not liable for any loss of cargo arising from the negligent fire or the negligent navigation and management of ships by crew members.[67] As the *Hamburg Rules* and the *Rotterdam Rules* do not contain these

[62] Shavell (1987), pp. 167–169; Shavell (2004), pp. 230–236.

[63] See generally Shavell (2004), pp. 387–401.

[64] Even if the cost of litigation is less than $500, the victim may not sue the injurer if he is not certain to win. For example, if the chance to win is only 50 %, the victim will not sue if his litigation cost is more than $250 (50 % × $500).

[65] See Sykes (1984), pp. 1231–1281. See also Posner (2003), pp. 188–189.

[66] Article 4.2(q) of the *Hague-Visby Rules*; article 5.1 of the *Hamburg Rules*; article 18 of the *Rotterdam Rules*.

[67] Article 4.2(a) and (b) of the *Hague-Visby Rules*. In the USA, an exception to this negligent navigation exoneration occurs in a both-to-blame collision situation. This happens when a negligently carrying ship has to contribute to the liability paid by the non-carrying ship to the owner of the cargo on the carrying ship. Although the carrying ship would not have to pay to its cargo if sued separately, it pays for such loss indirectly when the cargo owner sues the non-carrying ship. Ship owners insert a 'both-to-blame clause' in the bills of lading, under which cargo owner is required to indemnify the carrying ship for that amount. However, the US Supreme Court in *United States v. Atlantic Mutual Ins. Co*., 343 U.S. 236, 72 S. Ct. 666, 1952 A.M.C. 659 (1952), refused to uphold the validity of such clause. See Gilmore and Black (1975),

exceptions, these conventions are an improvement over the *Hague-Visby Rules* in this regard.

5.4.2 *Function of Liability Rules: Compensation or Insurance*

The main goal of liability law under economic analysis is the *deterrence* from negligence or the creation of incentives towards care. In the past, liability law served the function of *insurance* by allocating risks from more risk-averse to less risk-averse parties or by spreading the risk between equally risk-averse individuals.[68] As mentioned in the earlier chapters, the insurance function through liability law *was* important in the past to encourage investment when marine insurance was not well-developed. Today with everyone fully insured in a maritime cargo liability setting, the function of liability rule as a device for risk transfer has lost its significance.

The need for insurance arises due to the problem of 'risk aversion'. Risk aversion is our tendency to fear the loss or liability of a larger amount with less probability more than the loss or liability of a smaller amount with higher probability even though the expected loss or liability from both situations is the same.[69] Using our previous example, a cargo loss of $1,000 worth with 10 % probability may not be a big concern to a cargo owner as the loss of $10,000 worth of goods with 1 % probability, even though in both cases the expected loss is the same i.e., $100 ($1,000 × 10 %) or ($10,000 × 1 %).

Risk aversion is a source of social disutility as it either encourages risk-averse people to take excessive care or discourages them from engaging in socially beneficial activities.[70] For example, to spend *more* than $100 on precautionary measures in all the above examples would amount to excessive care as the maximum preventable loss is only $100 in a probability-discounted figure. In the absence of insurance, risk-averse people will tend to spend more than $100 to avoid 1 % risk of losing $10,000 or to prevent 0.5 % chance of suffering $100,000 loss.

Alternatively, they may decide not to engage in such an activity to begin with even though their expected gain might be higher than their expected loss. For example, cargo owners may decide not take their goods via ship to another port where they can make a profit of $200 because of their fear of losing $10,000

pp. 173–176. As 'negligent navigation' is not an exception in the *Hamburg Rules* and *Rotterdam Rules*, the carrying ship would be liable for its negligence whether sued directly or indirectly.

[68] See Shavell (1982), pp. 121–122.

[69] See Posner (2003), pp. 10–11. See Abraham (1986), pp. 11–12.

[70] Shavell (1987), pp. 191–192; see also Abraham (1986), pp. 11–12.

although the odds of such loss are only 1 %. The costs of excessive care and the forgone profit from not engaging in an activity are social loss.

We have seen in the previous two chapters that in the absence of insurance the concepts of limited liability and general average solved partly the problem of 'risk-aversion' by spreading the risk of losses between ship owners and cargo owners. Insurance now solves the problem of risk aversion to a much greater extent. An actuarially fair premium rate for all the above hypothetical situations would be $100.[71]

When both ship owners and cargo owners are insured, as is usually the case today in maritime cargo liability setting, the problem of risk aversion will have already been taken care of by insurance. Therefore, the need for liability law to serve the function of insurance is no longer there. Although some of the liability rules designed to serve insurance purpose in the past has now been modified in light of this reality, the principles of general average and limited liability still continue to exist in the cargo liability laws. The problem with these anachronistic rules is that they *affect the goal of deterrence* in liability law.

5.4.2.1 Liability Rules Which Used to Serve Insurance Function

Strict Liability of Common Carrier

The insurance function of liability law may explain the reason behind the imposition of strict liability on 'common' (i.e., public) carriers in the past.[72] Under the common law, a common carrier was liable for any loss or damage to the cargo under its custody regardless of its negligence. The only exceptions were an act of God, an act of public enemy, the inherent vice in the goods or the fault of a cargo owner.[73]

The apparent legal justification for this strict liability was the difficulty of cargo owners to prove negligence after they entrusted their goods with a ship owner for carriage.[74] However, this difficulty has always been there and still exists today in

[71] See Shavell (2004), p. 258 note 2. Of course, there will be some additional charges to the actuarially fair premium to reflect the insurer's administrative costs and profits.

[72] Common carriers are ships which carry goods of many shippers, while private carriers are chartered ships and carry only the goods of the charterers. See Chiang (1973), pp. 299–330. For a historical evolution of the common carrier liability, see Holmes (1949), pp. 180–205.

[73] See *Propeller Niagara v. Cordes*, 62 U.S. (21 How.) 7, 23 (1859); *The Willdomino*, 300 F. 5, 9, 1924 A.M.C. 889 (3d Cir. 1924), affirmed 272 U.S. 718, 47 S.Ct. 261 (1927); cited in Gilmore and Black (1975), p. 140 note 2.

[74] Per Holt C.J. in *Coggs v. Bernard*, (1672) 93 Eng. Rep. 107 at 112 (K.B.), "The law charges this person thus entrusted to carry goods, against all events but acts of God, and of the enemies of the King. For though the force be never so great, as if an irresistible multitude of people should rob him, nevertheless he is chargeable. And this is a politick establishment, contrived by the policy of the law, for the safety of all persons, the necessity of whose affairs oblige them to trust these sorts of persons, that they may be safe in their ways of dealing; for else these ship owners might have an opportunity of undoing all persons that had any dealings with them, by combining with thieves, &c.

any lawsuits by cargo owners against ship owners. The law sometimes overcomes this difficulty by shifting the burden to ship owners to show the absence of negligence rather than requiring a cargo owner to prove the negligence of ship owner.[75] Thus, the above justification for strict liability on common carriers is not very convincing.

The real justification for the strict liability on a common carrier seems to lie in its position being that of an insurer. This can be inferred from the very nature of 'common carriage' and 'private carriage'. A private carriage is where a cargo owner employs the service of the whole ship (e.g., charter party), while in a common carriage there are usually many cargo owners (e.g., liner service).[76] A cargo owner who hires the whole ship is likely to be a wealthier and less risk-averse merchant than a cargo owner in a common carriage situation who only hires some space for his or her cargo.[77] As a result, a cargo owner in private carriage has less need for insurance protection from the ship owner and both the ship owner and the cargo owner were probably on par in terms of their wealth. The same was not usually the case in a common carriage situation. Common carriers (i.e., ship owners) were likely to be wealthier individuals and thus comparatively less risk-averse than their cargo owners.

Common carriers were also in a better position than cargo owners to spread the extra cost of lost or damaged cargo over many individuals because they could pass such cost in the freight they charged.[78] In fact, courts expressly compared the position of common carriers to that of insurers.[79] As insurance is now widely available and is purchased by almost all cargo owners regardless of their wealth, it is no longer necessary or even desirable for liability law to serve the function of insurance. The strict liability of common carrier has thus lost its appeal. Negligence became the basis of most liability laws including the cargo liability law. In adopting

---

and yet doing it in such a clandestine manner, as would not be possible to be discovered. And this is the reason the law is founded upon in that point"; cited in Chiang (1973), p. 304.

[75] See Articles 4.1, 4.2(q) of the *Hague-Visby Rules*; article 5.1 of the *Hamburg Rules*; article 17.1 of the *Rotterdam Rules*.

[76] See Chiang (1973), pp. 326–327. See also *The Wildenfels*, 161 F. 864 at 866 (2d Cir. 1908), cert. denied, 215 U.S. 597 (1909); *Continental Ins. Co. v. Anchor Line Ltd.*, 53 F.2d 1032 at 1033 (E.D. N.Y.1931); cited in Chiang (1973), pp. 326–327.

[77] See *supra* note 25 about the connection between wealth and risk-aversion. In general, the wealthier a person the less risk-averse he or she is.

[78] "As a "common" carrier, entitled to make a reasonable charge for carriage, he could distribute the total cost of precautions that were economically productive among all his customers, and his charges in effect included *an insurance premium against the risks*. . ." Diplock (1970), p. 526 (emphasis added).

[79] Per Lord Mansfield in *Forward v. Pittard*, (1785) 1 T. R. 27, "A carrier is in the nature of an insurer." Cited in Beale (1897–1898), p. 168. Per Lord Wright in *Paterson Steamship Ltd. v. Canadian Cooperative Wheat Producers Ltd.*, "At common law, he [ship owner] was called *an insurer*, that he was absolutely responsible for delivering in like order and condition at the destination the goods bailed to him for carriage." [1934] A.C. 538 at 544 (PC) (emphasis added); cited in Gold et al. (2003), p. 363. See also Gilmore and Black (1975), pp. 176–182.

negligence as the basis of liability, the current cargo liability laws became aligned with this reality.

Deviation and the Automatic Cancellation of Contracts

Later on even when cargo insurance became widespread, ship owners continued to be placed in the position of insurers in case of deviation from the contracted routes. Ship owners were liable for any loss suffered by cargo owners after deviation *regardless of any causal connection between the loss and deviation*.[80] Ship owners could not exclude their liability for such loss through exoneration clauses as deviation would automatically cancel the contract of carriage together with all its terms and conditions.[81]

The justification for such strict liability was that cargo owners would lose their cargo insurance when the ships carrying their cargo deviated from the contracted or customary course.[82] Thus, under the common law ship owners were deemed to take up the position of cargo insurers after deviation.[83] The liability of ship owners for cargo loss was not excused even when the loss after deviation was caused by an act of God, an act of public enemy, or due to inherent vice of the goods.[84]

Imposing liability on ship owners for a loss not caused by their act (i.e., deviation) does not have any deterrent effect in preventing the possible future losses. If a loss would occur any way due to an act of God, the coincidence of its occurrence after deviation should not make the ship owners responsible for the loss. The only conceivable function of such liability was the provision of insurance by ship owners for the benefit of the cargo owners who automatically lost their cargo insurance after deviation.[85] For deterrence purpose, it does not really matter who bears such loss as these losses could not be prevented by optimal care.

On the other hand, it can be argued that leaving such losses to cargo owners would save the costs of unnecessary litigation. This is exactly the position now

---

[80] *Davis v. Garrett* (1830), 6 Bing. 716 at 724, 130 E.R. 1456 at 1459; *Edwards v. Newland*, [1950] All E.R. 1072 at 1081; cited in Tetley (2008), p. 1828 note 86.

[81] See Gilmore and Black (1975), pp. 176–177.

[82] *Ellis v. Turner* (1800), 8 T.R. 531, 101 E.R. 1529; cited in Tetley (2008), p. 1827 note 84. See generally Morgan (1978), p. 481.

[83] *Paterson S.S. Ltd. v. Canadian Co-operative Wheat Producers*, [1934] A.C.538 at 544–545 (P. C.); S.S. *Willdomino v. Citro Chemical Co*., 272 U.S. 718 at 725, 1927 AMC 129 at 130 (1927); cited in Tetley (2008), p. 1827 note 85.

[84] *Tate & Lyle Ltd. v. Hain S.S. Co. Ltd*. (1936), 55 Ll. L. Rep. 159 at 177 (per Lord Wright); see Tetley, *Cargo Claims* (*2008 ed*.), Tetley (2008) at p. 1882 note 88. These defences were acceptable in non-deviation cases. See *F. Kanematsu & Co. Ltd. v. The Shahzada* (1956), 96 C.L.R. 477 at 487, 30 A.L.J. 478; *Paterson S.S. Ltd. v. Canadian Co-operative Wheat Producers*, [1934] A. C.538 at 545 (P.C.); cited in Tetley (2008), p. 1828 note 89.

[85] For the consequence of deviation in marine insurance policy, see s.43 of *CMIA* and s.46 of *MIA*. See also *Green v. Young* (1702), 2 Salk 444; *Elliott v. Wilson* (1776), 4 Bro PC 470; *David v. Garrett* (1830), 6 Bing 716.

under all the conventions on cargo liability law. The *Hague-Visby Rules* and other cargo liability regimes now exonerate ship owners from liability in the cases of reasonable deviation.[86] Insurance market responded to this change by incorporating a 'held-cover' clause in the contract of marine insurance,[87] which extends the insurance coverage to cargo loss in the situations where ships deviate from the contracted routes.

In order to hold ship owners liable for deviation today, it is not enough to prove that the deviation is unreasonable but it has to be the *cause* of the cargo loss or damage.[88] Requiring the causal connection is also in agreement with the main function of liability rules i.e., the creation of incentives to take care. For example, if a sudden storm causes damage to cargo after deviation, imposing liability on ship owners for the damage would not change the behavior of ship owners in terms of taking care because such a peril may happen on a contracted route as well.[89]

The courts' requirement of causal connection in deviation cases may sometimes be narrower than what is necessary under an economic analysis. For example, in the case of *The Tai Shan*[90] there was an incident of fire damage after deviation. If there were no deviation, the ship owner would be excused for this fire damage due to the absence of any fault on his part.[91] The question before the court was whether there was a causal connection between the deviation and the fire damage. The court held that the connection could be established by proving that the incidence of fire occurred after the original scheduled delivery date.[92] This is very narrow test to determine causation. Under an economic analysis, any non-negligent fire damage would be excused whether the day of the incident happens to be before or after the scheduled day of delivery. An accidental fire is a mere happenstance and imposing liability in such a case cannot create any incentives towards care.

---

[86] Article 4.4. Although there is no direct provision in *Hamburg Rules* and the *Rotterdam Rules* on this issue, ship owner would not be liable for reasonable deviation under these Conventions because there has to be some 'fault' on the part of a ship owner to be liable and there can be no fault when deviation is reasonable. See article 5.1 of the *Hamburg Rules* and article 17(2) and 17 (3)(l) and (m) of the *Rotterdam Rules*. See also Force (1995–1996), pp. 2065–2069.

[87] See Gilmore and Black (1975), pp. 176–177.

[88] *General Electric v. Nancy Lykes*, 706 F.2d 80, 1983 AMC 1947 (2d cir. 1983); *Thiess Bros Ltd. v. Australian Steamships Ltd.*, [1955] 1 Lloyd's Rep. 459 (Supreme Court of N.S.W); *Drew Brown Ltd. v. The Orient Trader*, [1974] S.C.R. 1286 (S.C.C); cases cited in Tetley (2008), p. 1840 note 141.

[89] Unless that part of the sea where the ship deviated to happened to be under more unusual weather pattern. See Shavell (2004), pp. 249–256.

[90] *Frederick H. Cone & Co. Inc. v. The Tai Shan*, 111 F. Supp. 638, 1953 AMC 887 (S.D.N. Y.1953), aff'd 218 F.2d 822, 1955 AMC 420 (2d Cir. 1955); cited in Tetley (2008), pp. 1841–1842 and in Gilmore and Black (1975), p. 141.

[91] Under the US Fire Statute, 46 U.S.C. §182, the liability for fire damage is exonerated if the fire is not caused by the actual fault or privity of the ship owner.

[92] 111 F. Supp. 638 at 647, 1953 AMC 887 at 899.

Warranty of Seaworthiness

Although the warranty of seaworthiness in the past was not as strict as deviation in disregarding the causal connection, it was still considered as an 'absolute warranty' and the presence or absence of fault on the part of ship owners was irrelevant.[93] Ship owners used to be liable for the cargo damage or loss due to unseaworthiness of a ship regardless of their fault in such unseaworthiness.[94]

Making ship owners liable for defects in ships, which optimal care (due diligence) could not have prevented, does not deter ship owners from negligence. A probable reason for the existence of this rule is that it served the function of *insurance*. Ship owners were likely to be wealthier and less risk-averse than cargo owners although they both were individual merchants as opposed to corporations. Ship owners were also in a better position to spread the burden of loss over many cargo owners through extra charge in freight rates, a function similar to that of cargo insurance today.

In the presence of well-organized cargo insurance market today, ship owners do not need to serve as the insurers for cargo. Thus the 'absolute obligation' on a ship owner to make the ship seaworthy is now replaced with a requirement of 'due diligence' to do so under the current laws on cargo liability.[95] The difference between the previous 'absolute' obligation and the present 'due diligence' is that now a ship owner would not be liable for a loss caused by a defect in the ship which is so latent that proper investigation and care cannot detect and eliminate the defect.[96] As a latent defect[97] would remain un-detected whether the obligation of seaworthiness is absolute or not, imposing liability for a loss caused by such defect would not have any deterrent effect on the ship owner's behavior. The change of cargo liability law in this regard is thus justified under an economic analysis, which considers deterrence as the primary goal of liability law.[98] Cargo insurers responded to the change by inserting a clause into cargo insurance policies. In

[93] In *Putnam v. Wood*, 3 Mass. 481 (1807) the court held, "If the goods are lost by reason of any defect in the vessel, *whether latent or visible*, *known or unknown*, the owner is answerable to the freighter, upon the principle that he tacitly contracts that his vessel shall be fit for the use, for which he thus employs her." (Italics added); cited in Chamlee (1974), pp. 523–524. See also *Work v. Leathers*, 97 U.S.379 (1878); *The Caledonia*, 157 U.S. 124 (1895).

[94] See *Propeller Niagara v. Cordes*, 62 U.S. (21 How.) 7 at 23 (1859); *The Xantho*, [1887] 12 A.C. 503 at 515; *Lockett Co. v. Cunard S.S. Co.*, 21 F. 2d 191, 1927 A.M.C. 1057 (E.D.N.Y. 1927); cited in Gilmore and Black (1975), p. 140 note 4.

[95] Articles 3 (1) and 4 (1) of the *Hague-Visby Rules*; article 5.1 of the *Hamburg Rules*; article 14 of the *Rotterdam Rules*. Under the *Hague-Visby Rules* and *Rotterdam Rules* this duty is specifically assigned at the beginning of the voyage, while under the *Hamburg Rules* this falls under the 'presumptive fault' principle and extends throughout the voyage.

[96] Tetley (2008), pp. 878–880.

[97] Latent defect is expressly excluded by article 4.2(p) of the *Hague-Visby Rules* and article 17.3 (g) of the *Rotterdam Rules*. As such defect cannot be attributed to 'fault' of the ship owner, it would also be excused under the *Hamburg Rules*. See article 5.1 of the *Hamburg Rules*.

[98] See Shavell (2004), pp. 267–269 and 635–638. See also Shavell (1987), p. 208.

that clause, cargo insurers admit the seaworthiness of the ship carrying the goods of the insured cargo owner for the purpose of insurance claim settlement between the insurer and the insured.[99]

5.4.2.2 Existing Liability Rules Designed to Serve Insurance

The surviving cargo liability rules which were originally designed for insurance purpose are the principles of general average and limited liability. As these principles have already been discussed in detail in the previous two chapters, the discussion here will be brief and will be supplementary to the earlier materials.

General Average

Before the development of modern market insurance, merchants used to manage their risk of loss by various means.[100] One of the most ancient of these means is general average.[101] Under general average,[102] when a sacrifice is made in the form of a loss of a cargo or a ship for the safety of the common adventure in a time of peril, the loss is shared by the ship owners and cargo owners in proportion to the value of their respective saved interests in the adventure.[103]

In the pre-insurance era, general average served the function of insurance by spreading the losses over all the parties involved in an adventure rather than leaving the burden of loss on ship owners alone. It solved partly the problem of risk aversion in the minds of ship owners due to their fear of not only their own losses (damage to ships) but also the liability for cargo loss or damage. The Reduction of

[99] See Gilmore and Black (1975), pp. 154–155. See also cl 5 of the Institute Cargo Clauses (A)–(C); cl 4 of the Institute War Clauses (Cargo) and Strikes Clauses (Cargo).

[100] See Chap. 2. For example, the ancient practice of Chinese merchants on the Yangtze River of sending their cargoes on more than one vessel so as to spread the risk of loss. This practice goes back as far as 3000 BC. Another practice was bottomry and respondentia under which the risk of adventure was shared by financiers as they would receive their money with interests back only if the ship and/or cargo arrived safely. It can be traced back to the *Code of Hammurabi* in 2050 BC. See Dover (1975), pp. 3, 5; see also Vance (1908), pp. 1–17.

[101] It existed in Rhodian law (916–700 BC), from which it was adopted in Justinian Digest. The Rhodian Law explained the principle, "Let that which has been jettisoned on behalf of all be restored by the contribution of all."; Dover (1975), p. 6; see also Gilmore and Black (1975), pp. 3–4 and 244.

[102] For its classical definition, see *Birkley v. Presgrave*, (1801), 1 East. 220 at 228, 102 E.R. 86 at 89; *The Star of Hope*, 76 U.S. 203 at 228 (1869); see also s.65 of the Canadian *Marine Insurance Act*, S.C.1993, c22.

[103] Of course, general average is not limited to the sacrifice of cargo. On average cargo sacrifice accounts for only 6.7 % of total general average. In fact, today it is the ship owners who claim general average contribution more often from cargo owners for expenditures incurred for the ships. See UNCTAD (1994), p. 28; see also Gilmore and Black (1975), p. 262 and Selmer (1958), p. 180.

risk aversion in turn encouraged ship owners to invest into shipping, which ultimately increased the overall utility of the society (i.e., the benefits of increased shipping to ship owners, cargo owners, and the consumers of the shipped goods).[104] As both ship owners and cargo owners now invariably have insurance, general average has lost its real purpose. Instead of providing any social benefit today, it may indirectly reduce the deterrent effect of liability law, as we have seen in the preceding chapter.

A seeming justification of general average today is that its presence is *thought* to lead masters and crew to the proper mitigation of loss following a peril. This is because the decision of a master to make sacrifice or to incur expenses for the safety of both the ship and cargo will not be affected by the consideration of who bears the loss or expenditure necessary for such safety measure.[105] As shown in the preceding chapter, this justification is based on some false assumptions.[106] As the measures to mitigate the loss have to be reasonable in any way,[107] there is no need for general average to induce a master to take proper mitigation measure in the case of a peril.

When a peril of the sea such as storm affects *only* the cargo, the ship owner is still under a duty to take reasonable care to minimize the loss to the cargo and the ship owner is not entitled to claim for the cost of such care.[108] Why is then general average necessary when *both* the cargo and ship are in danger? The only beneficial function of general average *was* the provision of insurance by spreading the loss between ship owners and cargo owners. As such risk of loss or damage to cargo, ship or freight is already shifted to insurance, the principle of general average is no longer necessary to duplicate the insurance function.[109] In fact the administrative

[104] Broadly defined, utility is the satisfaction a person derives from an activity. As it is almost impossible to measure how much satisfaction a person would derive from an activity (e.g., driving a car or buying a product), it is roughly measured by a person's willingness to pay for the activity. See Shavell (2004), pp. 1–4.

[105] See Myerson (1995), pp. 465–466.

[106] See *supra* Sect. 4.3.2 on the discussion of justifications for general average.

[107] See Rule Paramount in the *YAR 1994* in *Documents of the Conference* in the CMI Yearbook 1992–1994, Part II, 146 (1994). This Rule has been inserted in response to the English decision of *Corfu Navigation Co. v. Mobil Shipping Co.* (*The Alpha*), [1991] 2 Lloyd's Rep.515 (CA), where negligence in subsequent activities of the master (i.e., unreasonable attempt to refloat the stranded ship) was held not to bar general average because reasonableness was not specifically mentioned in the relevant numbered Rule (Rule VII) even though it was required under Rule A. Cooke and Cornah (2008), pp. 75–76; UNCTAD (1995), p. 6. Reasonableness or the absence of negligence in subsequent actions has always been required by Canadian courts even before the insertion of Rule Paramount. See *Federal Commerce and Navigation Co. v. Eisenerz-G.m.b.H.* (*The Oak Hill*), [1974] S.C.R.1225, 1235–1236.

[108] *Wessels v. The Asturias*, 126 F.2d 999 at 1000 (2d Cir. 1942): ". . .although the loss occurs by a peril of the sea, the ship owner would be liable if the loss might have been avoided by skill and diligence at the time."

[109] General average now invariably involves the contributions between the insurers of ship owners and cargo owners. See UNCTAD (1994), p. 7; also Gilmore and Black (1975), p. 250.

costs[110] and time[111] in determining the value of each interest in order to determine their respective contributions for the purpose of general average is a social waste with no beneficial outcome. Yet, the principle of general average continues to exist in all the cargo liability regimes.[112]

As discussed in the previous chapter, the presence of general average leads some ship owners to suboptimal maintenance of their ships *before an incident* giving rise to general average and to excessive care *after the incident*. This is because ship owners alone have to bear the cost of care before a general average incident, while they will receive contributions from cargo owners for the cost of repairs after the incident.[113] Thus, the existence of general average encourages some ship owners to inadequately maintain their ships. Ship owners know that they can declare general average if they in fact find themselves in danger and the cost of repairs will be partly borne by the cargo interest.[114] General average thus creates a 'double-jeopardy' for cargo owners as they face higher risk of 'perils' due to not so well-maintained ships and, when faced with perils, they pay higher contribution due to the lower contributing value of such sub-optimally maintained older ship.

To make the matter worse, under the *Hague-Visby Rules*, the most-widely accepted cargo liability convention, ship owners are not liable for the negligent navigation and management of their ships by crew members.[115] Such negligence also does not bar ship owners from claiming general average contribution from cargo owners.[116] Most of the general average incidents arise from this type of negligence.[117] Cargo owners thus have to pay ship owners for the losses caused by the negligence of the ship owners' own employees.

---

[110] Such cost can be enormous if a ship is a carrying cargo for many cargo owners. In one instant, the ship was carrying 920 containers under 900 bills of lading with general average claim of more than $1 million. See Myerson (1995), p. 472.

[111] It may take several years for the final settlement. See Gold et al. (2003), p. 651. In some rare cases it took up to 10 years just to complete the statement and another 10–12 years to settle all claims. UNCTAD (1994), pp. 33–34.

[112] See Article V of the *Hague-Visby Rules*, article 24 of the *Hamburg Rules* and article 84 of the *Rotterdam Rules*. It is noteworthy here that some hull policies include an "absorption clause" which eliminates the need to seek general average contribution from cargo interest when the contribution owed from cargo falls below the specific threshold provided in the absorption clause. See UNCTAD (1994), pp. 9–13.

[113] UNCTAD (1994), p. 17.

[114] See *supra* Sect. 4.4.1.2.

[115] Article IV.2(a) of the *Hague-Visby Rules*.

[116] See *Louis Dreyfus & Co. v. Tempus Shipping Co.*, [1931] A.C. 726; *Drew Brown Ltd. v. The Orient Trader*, [1974] S.C.R. 1286 at 1333 (S.C.C). Although this was not so in the US [see *The Irrawaddy*, 171 U.S.187 (1898)], the ship owners' insertion of a clause ('Jason clause') in the bill of lading to exclude liability in such case was upheld by the US Supreme Court. See *The Jason*, 225 U.S. 32, 32 S.Ct. 560 (1912); Gilmore and Black (1975), pp. 266–267. As the *Hamburg Rules* and the *Rotterdam Rules* do not contain this negligent navigation exception, the 'Jason clause' will not have this effect under these regimes.

[117] UNCTAD (1994), pp. 24–25.

Limitation of Liability

The principle of limited liability for ship owners also evolved in a pre-insurance era and it too served the function of insurance in the absence of insurance market.[118] Even though ship owners in the past were likely to be wealthier and less risk-averse than individual cargo owners, an individual ship owner would have been highly risk-averse when faced with liability claims from *all* cargo owners at the same time after a serious shipping accident. The problem of risk aversion in the absence of market insurance discouraged investors from investing in shipping sector and led ship owners to excessive care.[119] In order to partly solve the problem of risk aversion and its resultant effects of excessive care and reduced investment into shipping, maritime nations adopted the principle of limited liability in their legislation.[120]

Modern marine insurance, however, now takes care of the problem of risk aversion. Limitation of liability is thus no longer necessary to address the same problem.[121] As liability is imposed in order to deter ship owners from negligent navigation, limiting the same liability would obviously reduce deterrence. Imposing liability initially and then limiting it later on are analogous to taking back with one hand what the other hand has given. When ship owners are negligent or even guilty of gross negligence,[122] they may not be *fully* liable for their action or omission. Their liability cannot be more than the limits provided in the conventions[123] even though the actual cargo loss may far exceed the limited amount.

To the extent the actual liability falls short of total loss, the expected liability of ship owners would also be less and consequently their care may be suboptimal. As

---

[118] To be sure, however, this was not the reason ascribed to the origin of the limitation of liability by earlier writers. Justice Oliver Holmes attributed it to the early Roman law principle of 'noxae deditio' i.e., the liability of the offending thing or the instrument of injury (deodand) itself. Other reasons include (1) the personification of ship as debtor and (2) the encouragement of investment to shipping. See Holmes (1949), pp. 6–7.

[119] See Holmes (1949), pp. 19–21.

[120] The intention of the government was clearly stated in the preamble of first English legislation on limitation of ship owners' liability, "Whereas it is of the greatest consequence and importance to this Kingdom, to promote the increase of the number of ships and vessels, and to prevent any discouragement to merchants and others from being interested and concerned therein. . .." Preamble to *Responsibility of Shipowners Act of 1733*; cited in Griggs (1997), p. 370. Similar concern was behind the American *Limitation of Liability Act*. For example, in *Moore v. American Transportation Co*., (1860), 65 U.S. 1 at 39, the Supreme Court held that the Act was adopted "to promote the building of ships, and to encourage persons engaged in the business of navigation."

[121] See Chap. 3.

[122] Ship owners would be deprived of limitation only if they caused the cargo loss or damage intentionally or "recklessly and with knowledge that damage would probably result." See article IV.5 (e) of the *Hague-Visby Rules*; art.8 of the *Hamburg Rules*; article 61 of the *Rotterdam Rules*.

[123] Under the *Hague-Visby Rules* the limit is either SDR 666.67 per package or unit or SDR 2 per kg, whichever is higher [article IV.5(a)], and under the *Hamburg Rules* it is SDR 835 per package or unit or SDR 2.5 per kg, whichever is higher [article 6.1(a)]. It is SDR 875 per package or shipping unit or SDR 3 per kg, which is greater [article 59(1)].

we have seen earlier, in a 10 % probability of $1,000 worth of loss, the cost of optimal care to eliminate the loss can be any amount up to $100 (10 % × $1,000). If, however, the liability is limited to $500, the expected liability would proportionately reduce to $50 (10 % × $500). Ship owners may not spend on care more than $50 i.e., the amount of their expected liability even though the expected cargo loss remains $100.

It is noteworthy here that a ship owner and a cargo owner may stipulate a higher limit of liability than the limitation amount mentioned in the conventions either by agreeing so or by declaring the actual value of the cargo on the bill of lading.[124] Such bill of lading is known as 'ad valorem' contract, and attracts higher freight rate.[125] As cargo owners already have insurance for their cargo loss, they would not usually want to pay the extra freight demanded by ship owners in such contracts.[126] The abolition of limited liability would make ship owners to bear the full liability for losses caused by their negligence. The presence of cargo insurance does not negate the need for liability on ship owners. Liability is imposed on ship owners to deter them from negligence and this need remains unchanged whether a cargo owner has insurance or not.

Although unlimited liability is likely to increase freight rate, the extra freight may turn out to be less than the savings cargo owners would get in the cargo insurance premium following the abolition of limited liability. In other words, the extra cargo insurance premium due to the cargo loss arising from the negligence of ship owner in the presence of limited liability is likely to be higher than the additional freight rate in case of unlimited liability.[127] This is because the additional freight rate would be equivalent to the cost of ship owner's optimal care, while the extra cargo premium would equal the expected loss from the negligence of ship

[124] Article IV.5 (a) and (g) of the *Hague-Visby Rules*, article 6.4 of the *Hamburg Rules*, and article 59.1 of the *Rotterdam Rules*.

[125] Griggs et al. (2005), p. 154.

[126] See Diplock (1970), p. 529 ("The option to declare a higher value is practically never exercised."). Although we used the fact observed by Lord Diplock (and many of his other observations throughout the chapter), we disagree, with respect, to his reasoning regarding the fact that cargo owners would rather pay extra cargo insurance than the additional freight rate. He suggested that it was probably cheaper for the cargo owner to do so. He also used this fact to infer that the ship owner's insurance cost for unlimited liability through the P&I coverage would probably be higher than the extra premium for cargo insurance. See Diplock (1970), pp. 529–530, 532. The real reason of cargo owners' reluctance to declare higher value could be explained by the concept of 'moral hazard' of an insured. Even though an insured will ultimately save more in the form of reduced premium rate by taking care (or paying others such as ship owners to take care), the insured may not do so once he purchased insurance. This is because reduction of premium rate may take some time, while the cost of care is immediate. See Shavell (2004), p. 262; Priest (1986–1987), pp. 1521–1590.

[127] There are opposing arguments whether the cost of cargo insurance or liability insurance is higher. These arguments are not really based on empirical evidence. See Sturley (1993), p. 145.

owners.[128] By definition, care is optimal when the cost of care is less than the expected loss in the absence of such care.[129]

5.5 Evidence of Widespread Insurance Practice

Throughout the chapter we maintained that both ship owners and cargo owners are invariably insured. This position is supported by the insurance practice in the shipping sector. There is hardly any maritime cargo loss or liability that is not already insured against.[130] As for ship owners, the relevant insurance here is the liability insurance.[131] The usual provider of this insurance is ship owners' P&I (protection and indemnity) clubs. The International Group of P&I clubs covers over 90 % of the world tonnage.[132] The remaining 10 % is insured either by other P&I clubs who are not members of the International Group or by non-mutual market insurers.[133] As for cargo, about 96 % of the cargo transported by sea is insured.[134] As a result, in the actual cases of cargo loss or damage the litigation or settlement is usually between the insurers of cargo owners and those of ship owners.

5.6 Conclusion

The negligence-based cargo liability laws apparently serve the *deterrence* function and consequently reduce cargo losses and damage. The reduction of cargo losses benefits not only the cargo owners but also the society in the form of reduced price for the goods shipped.

The principles of limited liability and general average in cargo liability laws interfere with the deterrent effect of liability law. These principles *were* justified in the absence of modern marine insurance. In the pre-insurance era, they functioned

---

[128] "In competitive freight and insurance markets . . . the cost of the precautions will be reflected in the charge for freight, but will be more than compensated for by the reduction in risk which will be reflected in the insurance premium." Diplock (1970), p. 527.

[129] See the 'Hand Formula,' *supra* Chap. 1 note 22 with the accompanying text.

[130] Gilmore and Black (1975), pp. 17–18.

[131] However, ship owner's hull policy also covers some liability aspects through 'running-down clause' in a collision situation. See Bennett (2006), pp. 400–401.

[132] See the group's website at http://www.igpandi.org/. Accessed 01 September 2013.

[133] Rosaeg (2001), pp. 10–11.

[134] This is based on only five major general average adjustments done by a firm. See Myerson (1995), p. 467. This is also supported by the 400 cases surveyed by the UNCITRAL, where it found that less than 5 % of total cargo (value wise) on the vessels involve in general average situations was not insured. The uninsured cargoes are mainly cargoes *en route* to developing countries. See UNCTAD (1994), p. 7.

as a form of *insurance* and increased the social utility by encouraging risk-averse individuals to invest into shipping. As both ship owners and cargo owners are now almost always insured, the need for these principles to serve insurance function ceased to exist in the maritime cargo liability regimes. Yet, these two principles still survive in the cargo liability regimes with no seeming justifications other than cutting the ship owners' operating costs at the expense of deterrence and efficiency.

If any liability for cargo loss or damage is deemed desirable, it is *only* because liability deters potentially liable parties from negligence. If such incentive is worth inducing through liability law, liability should be both unlimited *and* borne by the party who can take care. Both the limitation of liability and general average shift partly the burden of liability/loss from the party who can take care to the party who has no control over the cargo during its transportation. By abolishing these two principles from all the cargo liability regimes as well as the exceptions of negligent navigation and negligent fire damage from the *Hague-Visby Rules*, cargo liability law may serve its main function: the deterrence from negligence or the creation of incentives towards optimal care.

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven

Beale JH Jr (1897–1898) The carrier's liability: its history. Harv Law Rev 11:158–168

Bennett HN (2006) The law of marine insurance, 2nd edn. Oxford University Press, Oxford

Brown C (1978–1979) Deterrence and accident compensation schemes. Univ West Ont Law Rev 17:111–154

Chamlee GH (1974) The absolute warranty of seaworthiness: a history and comparative study. Mercer Law Rev 24:519

Chiang YF (1973) The characterization of a vessel as a common or private carrier. Tulane Law Rev 48:299–330

Coase RA (1960) The problem of social cost. J Law Econ 3:1–23

Coleman JL (1982) The economic analysis of law. In: Pennock JR, Chapman JW (eds) Ethics, economics, and the law, vol XXIV. New York Press, Nomos, p 1

Cooke JHS, Cornah RR (eds) (2008) Lowndes and Rudolf: the law of general average and The York-Antwerp rules, 13th edn. Sweet & Maxwell, London

Diplock L (1970) Conventions and morals – limitation clauses in international maritime conventions. J Marit Law Commer 1:525–536

Dover V (1975) A handbook to marine insurance: being a textbook of the history, law and practice of an integral part of commerce for the businessman and the student, 8th edn. Witherby & Co. Ltd, London

Fleming JG (1985) An introduction to the law of torts. Clarendon, Oxford

Force R (1995–1996) A comparison of the Hague, Hague-Visby, and Hamburg rules: much ado about (?). Tulane Law Rev 70:2051–2089

Gilmore G, Black CL Jr (1975) The law of admiralty, 2dth edn. Foundation Press Inc., New York

Gold E et al (2003) Maritime law. Irwin Law Inc., Toronto

Grady KT (1980–1981) Commonwealth of Puerto Rico v. SS Zoe Colocotroni: state actions for damage to non-commercial living natural resources. Boston Coll Environ Aff Law Rev 9:397

Griggs P (1997) Limitation of liability for maritime claims: the search for international uniformity. Lloyd's Marit Commer Law Q 369
Griggs P et al (2005) Limitation of liability for maritime claims, 4th edn. LLP, London
Holmes OW (1949) The common law. Little, Brown and Company, Boston
Morgan HS Jr (1978) Unreasonable deviation under COGSA. J Marit Law Commer 9:481
Myerson HL (1995) General average – a working adjuster's view. J Marit Law Commer 26:465–474
Posner RA (2003) Economic analysis of law, 6th edn. Aspen, New York
Priest GL (1986–1987) The current insurance crisis and modern tort law. Yale Law J 96:1521–1590
Rosaeg E (2001) The impact of insurance practices on liability conventions: legislative approaches in maritime law. In: Proceedings from the European colloquium on maritime law, Oslo. http://folk.uio.no/erikro/WWW/corrgr/insurance/Lysebu.pdf. Accessed 1 Sept 2013
Selmer KS (1958) The survival of general average: a necessity or an anachronism? Oslo University Press, Oslo
Shavell S (1982) On liability and insurance. Bell J Econ 13:120–132
Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge
Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge
Sturley MF (1993) Changing liability rules and marine insurance: conflicting empirical arguments about Hague, Visby, and Hamburg in a vacuum of empirical evidence. J Marit Law Commer 24:119–149
Sturley MF (2003–2004) The United Nations Commission on international trade law's transport law project: an interim view of a work in progress. Tex Int Law J 39:65
Sturley MF (2004) Scope of coverage under the UNCITRAL draft instrument. J Int Marit Law 10:138
Sykes A (1984) The economics of vicarious liability. Yale Law J 93:1231–1281
Tetley W (2003–2004) Reform of carriage of goods – the UNCITRAL draft and senate COGSA'99. Tulane Marit Law J 28:1
Tetley W (2008) Marine cargo claims, 4th edn. Thomson Carswell, Quebec
UN Conference on Trade and Development (UNCTAD) (1994) The place of general average in marine insurance today. http://r0.unctad.org/ttl/docs-legal/rep-doc/The%20Place%20of%20General%20Average%20in%20Marine%20Insurance%20Today.pdf. Accessed 1 Sept 2013
UN Conference on Trade and Development (UNCTAD) (1995) General average – reform of the system. UN Doc. UNCTAD/SDD/LEG/3
Vance WR (1908) The early history of insurance law. Columbia Law Rev 8:1–17

Chapter 6
Role of Insurance in Providing Adequate Compensation for Oil Pollution Damage and in Reducing Oil Pollution Incidents

6.1 Introduction

In the previous chapter, we have maintained that *deterrence* should be the main goal of liability law especially when both parties to a liability claim are insured. This may not be the case with the oil pollution liability law because the victims of oil pollution are not always insured against the damage from such pollution.[1] As a result, the oil pollution liability regime needs to cater for both goals of liability law: *deterrence* and *compensation*.[2] However, the intended goal of the international oil pollution liability regime[3] is to provide *adequate compensation* against oil pollution damage.[4] In fulfilling this goal, the oil pollution liability regime has succeeded to a great extent.[5]

An earlier version of this chapter was published in Billah (2011), pp. 42–78.

[1] Oil pollution victims may include local fishermen, the owners of hotels, restaurants and gift shops near a sea beach as well as any government entity in charge of marine resources. See the claim history of any large-scale oil pollution incidents at the IOPC website at http://www.iopcfund.org/. Accessed 01 September 2013.

[2] See Brown (1978–1979), p. 111.

[3] See the conventions on oil pollution liability: International Convention on Civil Liability for Oil Pollution Damage, 1969, 973 U.N.T.S.3, (1970) 9 I.L.M. 45, as amended by 1992 Protocol, LEG/CONF.9/15 [hereinafter the CLC or the Civil Liability Convention] and International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, 16 I.L.M 621 (1972), as amended by 1992 Protocol, LEG/CONF.9/16, and 2003 Protocol, LEG/CONF.14/20 [hereinafter the Fund Convention].

[4] This goal is explicitly stated in the preamble to both the CLC and the Fund Convention. The preamble to both conventions reads, "The State Parties to the present Convention. . .. convinced of the need to ensure that *adequate compensation* is available. . .." (Emphasis added). However, the word 'adequate compensation' was not defined in any of the conventions. The states parties probably wanted the compensation to be as high as possible.

[5] The problem with compensation as primary goal is that it ignores the possible effect of law on the behavior of liable parties in reducing pollution incidents. Consequently, the primary focus of the negotiations leading to the adoption of the CLC and the Fund Convention was on *who should pay*

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_6, © Springer International Publishing Switzerland 2014

The success of the oil pollution liability regime in guaranteeing adequate compensation can be attributed to its various insurance arrangements. It makes insurance compulsory for ship owners and requires them to carry the certificate of insurance as a proof. It ensures the access of oil pollution victims to insurance proceeds by allowing them to bring direct action against the insurers of ship owners. It created two compensation funds, contributed mainly by the oil industry. These funds are the International Oil Pollution Compensation (IOPC) Fund and the Supplementary Fund. The funds function as a second or third tier of *insurance* against oil pollution damage.

Although intended mainly to provide adequate *compensation*, the insurance arrangements also help the cause of *deterrence*. This is because insurance premium will reflect the actual compensation paid to oil pollution victims. Higher compensation will entail higher premium. Higher premium in turn will lead the insured ship owners or the oil industry towards better care so that their premium may decrease in the future. The incentive to reduce the premium may be the reason for the decrease in oil pollution incidents.[6]

The insurance arrangements under the oil pollution liability laws are not the only factor behind the decreasing number of oil pollution incidents. A combination of factors has brought about the reduction in oil pollution incidents.[7] Other factors include strict liability for oil pollution and very high limit of liability, the improved design and construction for oil tankers especially fitting them with double-hulls and the strong enforcement of regulations related to maritime safety and navigation by port states.

The success of oil pollution liability law in the presence of limited liability may raise question against our earlier contention that limited liability leads to *under-deterrence*.[8] The question can be answered by the fact that the liability limit for oil pollution is set at a much higher level than those under the general maritime liability law and cargo liability law.[9] In most cases of oil pollution, the actual losses suffered by the victims are within the limited liability of ship owners. In other words, ship owners have to pay *fully* for their negligence in these cases despite the presence of

for oil pollution damage instead of *who could be induced through liability to reduce the damage*. For an excellent account of the negations, see M'Gonigle and Zacher (1979), Chap. V.

[6] See *infra* Sect. 6.5. The main source of these statistics is the website of the International Ship owners Pollution Federation Ltd (ITOPF) at http://www.itopf.com/information-services/data-and-statistics/statistics/index.html. Accessed 03 September 2013.

[7] See Gold (1991), p. 427.

[8] See *supra* Chap. 3.

[9] For general limitation of ship owners' liability, see LLMC 1976. The liability limit of LLMC 1976 was further increased by an average of 2.3 times by a Protocol in 1996 (LEG/CONF.10/DC.2 of May 2, 1996), which came into force on May 13, 2004, See the status of the IMO Conventions at IMO website: http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

limitation principle.[10] Thus, the success of the oil pollution liability law is, in fact, a proof that higher or unlimited liability leads to better care and fewer losses.

After a brief outline of the oil pollution liability law in Sect. 6.2, we will analyze in Sect. 6.3 the reasons (i.e., various innovative insurance arrangements) for the success of oil pollution liability law in providing adequate compensation. Where appropriate, we will also discuss the challenges in the implementation of similar insurance arrangements in other comparable liability regimes. In Sect. 6.4, we will briefly discuss the possible effect of limited liability on ship owners with regard to optimal care. Finally in Sect. 6.5, we will examine the other factors leading to the reduction in oil pollution accidents.

6.2 Oil Pollution Liability Regime in Brief

Until 1969 there was no separate liability law for oil pollution damage.[11] Before the separate liability law, people suffering damage due to oil spill could claim under the general maritime liability law as well as under the common law principles of negligence, trespass, nuisance, and/or strict liability.[12] Ship owners could limit their liability under the general maritime liability conventions.[13] The international community woke up to the inadequacy of the general maritime law to cover the expenses of devastating oil pollution damage in the aftermath of the *Torrey Canyon* incident in 1967.[14]

Separate liability law for oil pollution was adopted to address the problem of inadequate compensation, which now consists of the Civil Liability Convention

[10] From 1978 to 2003, only 125 incidents required compensation from the IOPC Funds. In most of these cases the reason for the Fund's involvement was the inadequacy of ship owners' liability limit. See T. Mensah, "The IOPC Funds: how it all started" in IOPC Funds (2003), p. 48. As ship owners are required to purchase compulsory insurance against oil pollution liability, there may be some doubt about the deterrent effect of liability law in the presence of liability insurance. This issue is addressed in the next chapter.

[11] Tan (2006), p. 288.

[12] See *Southport Corporation v. Esso Petroleum Company Ltd*, [1953] 2 Lloyd's Rep. 414 (Trial Div.); [1954] 1 Lloyd's Rep. 446 (CA); [1955] 2 Lloyd's Rep. 655 (HL); *The Wagon Mound*, [1961] A.C. 388 (P.C.); see also Kiern (2000), pp. 490–502.

[13] There are three conventions on limitation of liability: (1) International Convention for the Unification of Certain Rules relating to the Limitation of Liability of the Owners of Sea-going Vessels, 1924; League of Nations Treaty Series No. 2763, Vol. CXX, p. 125; (2) and Convention on the Limitation of Liability of Owners of Sea Going Ships, 10 October 1957, 52 U.K.T.S. 355 (1968) and (3) Convention on Limitation of Liability for Maritime Claims, 1976, (1977) 16 I.L.M. 606, as amended by 1996 Protocol, LEG/CONF.10/DC.2.

[14] Cleanup alone cost the British and French governments £7.70 million (US$18 million). Although it was impossible to estimate the damage to the environment, total quantifiable cost was £14.24 million. Burrows et al. (1974), p. 258. Ultimately the UK and France settled for slightly over US$7 million. M'Gonigle and Zacher (1979), p. 153.

(CLC) and the Fund Convention. CLC deals with the liability of ship owners, which is strict but limited in amount. The Fund Convention created the IOPC Fund to pay for oil pollution damage when compensation from ship owners is either inadequate or not available.[15] Compensation from the Fund is also limited, albeit at a higher ceiling.

The maximum limit of compensation under the CLC and Fund Convention together is SDR 203 million [US$307.6 m].[16] In 2003, the IMO adopted a new Protocol to the Fund Convention to create a Supplementary Fund with the compensation limit of SDR750 million (US$1.13 billion) together with SDR203 m from the IOPC Fund.[17] The Protocol came into force on 3 March 2005.[18] It is now very unlikely that claims for oil pollution damage from any one incident will exceed this high ceiling of compensation.[19]

The United States played a leading role during the negotiation of the CLC and the Fund Convention and their 1984 Protocols,[20] but did not ratify them objecting to the inadequate limit of liability and the pre-emption of state laws.[21] Until 1990 the US had enacted numerous federal Acts to deal with both the general and the specific geographical oil pollution damage.[22] The need for a comprehensive oil pollution liability had long been felt and Congress had debated the issue for over 15 years.

[15] See the Fund Convention, article 4.1 (a)–(c).

[16] See article V.1 of the CLC and article 4.4 of the Fund Convention. Under article V.1 of the CLC the calculation is based on the tonnage of the ships and the ship owners' maximum liability can be SDR89.77 million. However, for owners of ships with 5,000 gross register ton (grt) or less, the maximum is SDR4.51 million. Any ship above 5,000 grt may incur additional liability of SDR631 per ton but the total cannot exceed SDR89.77 million. It is noteworthy that one grt is equivalent to 100 cubic feet of the enclosed space in a ship.

[17] Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 [hereinafter the Supplementary Fund Protocol]; the Protocol can be found in the IMO document: LEG/CONF.14/20.

[18] See http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[19] As of 03 September 2013, there are 29 state parties to the Supplementary Fund; they are mostly from European Union. See at http://www.iopcfunds.org/about-us/membership/map/. Accessed 03 September 2013.

[20] Protocol of 1984 to Amend the International Convention on Civil Liability for Oil Pollution Damage, 1969; Protocol of the 1984 to Amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971; reprinted in (1984) 15 J. Mar. L. & Com. 613 and 623 respectively. These protocols never came into force due to the US's non-ratification, but were reintroduced in 1992 with modification in the entry-into-force requirement.

[21] Gold (1991), pp. 432–433; see also Tan (2006), pp. 318–319.

[22] There were four federal statutes in this regard: s.311 of the *Federal Water Pollution Control Act*, Pub. L. No. 92-500, 85 Stat. 816 (1972); *the Deep-Water Port Act*, Pub. L. No. 93-627, 88 Stat. 2126 (1974), *the Outer Continental Shelf Lands Act Amendments*, Pub. L. No. 95-372, 92 Stat. 674 (1978), *the Trans-Alaska Pipeline Authorization Act*, Pub. L. No. 93-153, 87 Stat. 589 (1973). See Ayorinde (1994), pp. 69–70. See also Kiern (2000), p. 507.

The *Exxon Valdez* incident in 1989, the largest oil pollution disaster in the US's history,[23] brought a quick end to the congressional debate and Congress enacted the *Oil Pollution Act of 1990* (OPA) in reaction to the incident.[24]

The scope of the OPA is wider than that of the international oil pollution law in terms of vessel types[25] and polluting oil.[26] Also, the liability of ship owners is higher under the OPA than under the CLC especially for large ships.[27] The right to limit liability can be denied more easily under the OPA than under the CLC.[28] Unlike the international regime, there is no ceiling on the total liability of ship owners under the OPA other than the per ton liability limit.[29] Per ton liability limit for single-hull tanker is US$3,000 and for double-hull tankers US$1,900.[30] In addition to the liability of ship owners, up to US$1 billion can be spent for any single oil pollution incident from the Oil Spill Liability Trust Fund (OSLTF).[31]

[23] A total of 37,000 tons of crude oil were spilled on the pristine water of Prince William Sound, Alaska. Although it is the largest ship-sourced oil spill in the US, it ranks only 35th in major oil spills worldwide. See http://www.itopf.com/information-services/data-and-statistics/statistics/index.html. Accessed 03 September 2013. Its total economic cost is estimated over $12 billion. Kiern (2000), pp. 481–482.

[24] PL 101-380 (HR 1465). It was enacted on August 18, 1990.

[25] "Vessel" is defined in the OPA to include "every description of watercraft or other artificial contrivance used, or capable of being used, as *a means of transportation on water*, other than a public vessel." §2701(37). (Emphasis added). On the other hand, in the CLC and the Fund Convention it is defined to include only *oil tankers* and other ships which are adapted *to carry oil and are actually carrying oil*. See articles I.1 of the CLC as well as 1.2 of the Fund Convention. The latter adopted the same definition as that of the CLC by cross-reference.

[26] While international regime covers only pollution from "persistent oil" such as crude oil, fuel oil, heavy diesel oil, and lubricating oil (art.I.5 of the CLC), the OPA includes pollution damage occurring both from persistent and non-persistent oil.

[27] This is because per ton liability for oil pollution from a tanker cannot be less than US$3,000 for single-hull tankers or US$1,900 for double-hull tankers. Under the original OPA, per ton liability could not be less than US$1,200 for any kind of tanker. See *Coast Guard and Marine Transportation Act of 2006*, PL 109-241, which increased the limit of liability provided in the OPA. On the other hand, under the CLC liability could be less than SDR 450 for a large tanker of 200,000 tons because the maximum liability for a tanker owner under the CLC cannot exceed SDR 89,777,000. See proviso to article V(1)(b) of the CLC.

[28] See article V.2 of CLC and 33 USC § 2704 (c) (1) (a) and (b).

[29] See Chao (1996), p. 241.

[30] See *supra* note 27. The concept of maximum ceiling on liability was something new at that time for maritime liability law. Such ceiling did not exist in the then existing general liability law, the 1957 Convention, and its predecessor the 1924 Convention. It even did not appear in the IMO's Legal Committee's draft CLC. It was proposed in the 1969 IMO conference by the UK delegation and the proposal was probably inspired by the existence of similar measure in the tanker-owners' private agreement, TOVALOP, designed to provide governments' clean-up cost for oil pollution. See M'Gonigle and Zacher (1979), pp. 158–159, 173.

[31] 26 U.S.C. § 9509 (c)(2)(A).

6.3 Adequate Compensation by Various Insurance Arrangements

The oil pollution liability regimes under both the international law and the US national law have provided adequate compensation in most of the actual oil pollution cases. Since the adoption of the OPA no oil pollution incident in the US exceeded the combined limit of ship owner's liability and that of the OSLTF.[32] Some of the oil pollution incidents under the international regime required compensation above the earlier available compensation limit.[33] With the establishment of the Supplementary Fund, it is very unlikely to have such an incident today.[34]

The success of oil pollution liability regimes in providing adequate compensation can be attributed to the various insurance arrangements and the high limit of liability on ship owners. In this chapter we used the word 'insurance' in its wider sense i.e., any guaranteed source of compensation for the victims of oil pollution damage.[35] Thus, not only the compulsory insurance for the ship owners' liability comes under the term, but also the IOPC Fund, the SOPF, and the OSLTF all fall under this term as the common goal of all these funds is to ensure adequate compensation against oil pollution damage. Following is an analysis of how various insurance arrangements in the oil pollution liability regime led to its success in providing adequate compensation for oil pollution damage.

6.3.1 Compulsory Insurance

The most important factor in oil pollution liability regime to ensure adequate *compensation* is the imposition of compulsory insurance on ship owners.[36] The concept of compulsory insurance was quite new in maritime law at the time of the

[32] See the Report to Congressional Committees by the US Government Accountability Office (2007), p. 28; available at www.gao.gov/cgi-bin/getrpt?GAO-07-1085. Accessed 03 September 2013.

[33] Among these incidents are the *Amoco Cadiz* in France in 1978, the *Erika* again in France in 1999, and the *Prestige* in Spain in 2002. See the IOPC Fund's website for detail accounts of these incidents at http://www.iopcfund.org/. Accessed 03 September 2013.

[34] The limit in the Supplementary Fund is SDR 750 billion.

[35] 'Insurance' in its narrower sense means only commercial insurance. See Vance (1908), pp. 2–3.

[36] Under the CLC, the owners of tankers over 2,000 gross registered tons (grt) are required to carry insurance, while under the OPA insurance is compulsory on any ship over 300 grt. See article VII.1 of the CLC and § 2716 of the OPA. Although the provisions give ship owners option to have other financial security or guarantee instead of insurance, in terms of their effect they all are similar to that of insurance i.e., the guarantee of compensation against oil pollution damage. Consequently, we treat them all as insurance in their functional sense. Such insurance proceeds are exclusively available for the oil pollution compensation. See article VII.9 of the CLC.

adoption of the CLC although it was not without precedent.[37] At that time compulsory insurance existed mainly in some non-maritime liability laws such as the automobile accidents and workmen compensation laws.

The main objective of compulsory insurance is to ensure compensation for the victims of accidents.[38] Compulsory insurance up to the maximum liability limit of ship owners guarantees the availability of insurance proceeds for the victims of oil pollution damages. Without compulsory insurance, the imposition of liability even with very high limit may prove useless due to the ability of a shipping company to hide behind the 'corporate veil'.[39]

The provision of mandatory insurance forces all ship owners including those who would not otherwise buy insurance to obtain insurance up to the required limit.[40] Empirical evidence in the automobile insurance bears out this fact. Evidence shows that in the absence of compulsory insurance the number of uninsured motorists could be as high as 20 %. On the other hand, the number of such motorists is only 1 % in states where insurance is compulsory.[41]

6.3.1.1 Tendency to Keep Assets Low Checked

Although it would be a rare case where the liability of a shipping company would exceed its assets, the company may artificially keep its assets low through the formation of corporate subsidiaries. A ship-owning company usually forms a separate corporation for each ship in its fleet, thus practically limiting its liability to the value of the ship.[42] The value of the ship may be zero in case it becomes a

[37] The concept of compulsory insurance existed in the 1962 Convention on the Liability of Operators of Nuclear Ships, Brussels, May 25, 1962, (1963) 57 AJIL 268. As can be seen from the name of the convention, the ships on which compulsory insurance was imposed under it were *not ordinary merchant ships*. See A. Popp, "The Civil Liability and Fund Conventions: model compensation schemes" in IOPC Funds (2003), p. 82. See also Røsæg (2000).

[38] Although compulsory insurance is mainly thought of as providing protection for victims of accidents, it also protects the injurer from the ruinous effect of high liability. See the judgment of Stuart-Smith L.J. in *Richardson v. Pitt-Stanley* [1995] 2 W.L.R. 26 (CA), where he rationalized the provision of compulsory workmen compensation insurance as a protection for *employers* by saying that "a small or even medium-sized *employer* may be faced with disastrous consequences for his business . . . if he is faced with a large claim by an injured workman, which will make large inroads into his resources". In the same case, the dissenting justice Sir John Megaw opined that it was the "protection to a particular class of individuals, the employees" which was the purpose of compulsory insurance. Cited in O'Sullivan (1995), pp. 242–243. (Emphasis added).

[39] See *infra* note 45.

[40] Some people may decide not to buy liability insurance because their total assets are less than their maximum expected liability. See Shavell (2000), p. 166. Calabresi (1970), pp. 58–59 notes 28–29.

[41] Schwartz (1987), p. 419; Sloan et al. (1995), p. 54.

[42] Even though under the general maritime law a ship's liability is now calculated based on the tonnage of the ship, the only asset a plaintiff can get hold of may be the damaged ship in the absence of compulsory insurance.

total wreck following an incident. The practice of forming one-ship company is very wide-spread in the maritime setting.[43] The consequence of this can sometimes be that the liability of the corporation is limited to the 'congeries of wooden planks or pieces of iron.'[44] This is exactly what would have happened in the case of *Torrey Canyon* had the liability not been ultimately settled.[45]

6.3.1.2 'Flag-of-Convenience' Tendency Checked

In order to ensure adequate compensation insurance is required on all ships over 2,000 grt. The contracting states are required to ensure that insurance is carried not only by their own ships[46] but also by any foreign ship entering their ports or off-shore terminals.[47] This requirement made immaterial the fact whether the flag-state of a ship is a party to the international oil pollution liability regime or not. It neutralizes any competitive advantage a ship from a non-contracting state may have over the ships from the contracting states.

It was something new in maritime law for a state to require foreign ships to purchase insurance. Traditionally, a ship is obliged to follow the law of its flag-state; coastal- and port-states could not usually impose their laws on a foreign vessel.[48] This principle of flag-state supremacy over port- or coastal-states gives the ships of a state with less stringent maritime laws some competitive advantages over the ships registered in states with more strict laws.[49] For example, a state may decide to stay outside the CLC regime so that the ship owners from it do not have to incur the cost of compulsory insurance. This provision of compulsory insurance makes this strategy useless because a ship has to buy insurance if it wants to use the ports or off-shore terminals of a contracting state whether or not its flag-state is a party to the CLC. Thus, this provision removes the incentives for ship owners to have their ships registered in those so-called 'flags of convenience' to avoid

[43] See Tan (2006), p. 34.

[44] *Per* Lord Watson in *Sailing Ship* "*Blairmore*" *Co. Ltd. v. Macredie* [1898] AC 593, 603 (HL).

[45] On the basis of the US *Limitation of Liability Act*, 46 USC § 183, under which liability is based on the value of the ship and the pending freight after an incident, the liability of the ship owner was held by a US district court to be US$50, the value of the single salvaged lifeboat. See *In re Barracuda Tanker Corp*. (*The Torrey Canyon*), 281 F.Supp. 228 (SDNY 1968), rev'd on other grounds, 409 F.2d 1013 (2d Cir. 1969). See Kiern (2000), p. 503. The corporate structure of the *Torrey Canyon* also illustrates the 'corporate veil' concept in its extreme. The ship was registered in Liberia and owned by a Bermudian company, the Barracuda Tanker Corporation, which was a corporate creation of the Union Oil, an American company. The ship was then bareboat-chartered to the Union Oil, which in turn voyage-chartered it to a UK company, the British Petroleum. See M'Gonigle and Zacher (1979), pp. 149–150; Tan (2006), pp. 288–289.

[46] Article VII.10 of the CLC.

[47] Article VII.11 of the CLC.

[48] Mitchell (1994), p. 76. See, however, *infra* Sect. 6.5.5 for the increased power of port-states today.

[49] See Tan (2006), pp. 23–25, 34–35, 47–67; See also Tetley (1992), p. 175; Payne (1980), p. 67.

additional insurance cost. In other words, when it comes to the compulsory insurance for oil pollution liability, these ships cannot avoid the cost of insurance by hiding behind the flags of non-CLC states.[50]

6.3.1.3 Compulsory Insurance in Other Conventions

The success of the oil pollution liability regime to provide adequate compensation led the International Maritime Organization (IMO) to adopt similar insurance provisions in other maritime liability law conventions. For example, the PAL 1974,[51] the HNS Convention and the Bunkers Convention all now contain provisions on compulsory insurance.[52] There were also attempts to include similar provision in the LLMC 1976 during the negotiation of its 1996 Protocol.[53]

Although no provision on compulsory insurance is included in the LLMC 1976, ship owners may be required to carry insurance up to the liability limit of the LLMC 1976.[54] This is because the Bunkers Convention imposes compulsory insurance for bunker oil pollution liability but sets the maximum limit for compulsory insurance as to the liability limit under the LLMC 1976 or its 1996 Protocol.[55] Consequently, any ship registered in a contracting state to the Bunkers Convention may be required to carry insurance up to the liability limit under the LLMC 1976.[56] Even when a ship is not registered in a contracting state to the Bunkers Convention but intends to enter the ports of a contracting state, the ship has to carry such insurance.[57]

---

[50] See Hawkes and M'Gonigle (1992), p. 224; M'Gonigle and Zacher (1979), p. 226 and note 67, 236; see also Tan (2006), pp. 181–182.

[51] Article 5 of Athens Convention Relating to the Carriage of Passengers and their Luggage by Sea, 1974; (1975) 14 I.L.M., as amended by its 2002 Protocol, LEG/CONF.13/20 [hereinafter the PAL 1974].

[52] Article VII of the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996, 35 I.L.M. 1406 [hereinafter the HNS Convention]; Art.7 of International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001, LEG/CONF 12/19 [hereinafter the Bunkers Convention].

[53] See OECD (2004), p. 62.

[54] Bunker Convention entered into force on Nov. 21, 2008; see the status of the conventions at http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[55] Article 7(1) of Bunkers Convention. Insurance is required for any ship over 1,000 grt; Bunker Convention entered into force on Nov. 21, 2008; see the status of the conventions at http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx. Accessed 03 September 2013.

[56] Oil pollution from the bunkers of *tankers* is already covered by the CLC; see the definition of 'oil' in article I.5: "'Oil' means any persistent hydrocarbon mineral oil such as crude oil, fuel oil, heavy diesel oil and lubricating oil, whether carried on board a ship as cargo or *in the bunkers* of such a ship". (Emphasis added).

[57] See article 7.12 of the Bunkers Convention. Like the similar provision in article VII.11 of the CLC, this provision prevents competitive advantage of ships flying the flag of non-contracting states over the ships from contracting states. See Zhu (2007), p. 34.

6.3.1.4 Compulsory Insurance Now in All Maritime Laws

The claimants of bunker oil pollution and general maritime losses would have to share the same limitation fund.[58] Thus, the existence of compulsory insurance for bunker oil pollution would automatically secure the benefit of insurance to the claimants of general maritime losses. General maritime liability law covers most of the maritime losses including cargo loss.[59] As a result, the compulsory insurance for bunker oil pollution would also guarantee the compensation for cargo liability claimants despite the fact that the conventions on cargo liability law do not require compulsory insurance.[60] In short, the provision of compulsory insurance under the Bunkers Convention will indirectly ensure the availability of insurance against most cases of a ship owner's liability. Through the Bankers Convention, compulsory insurance thus became a feature common to all types of maritime liability.[61]

6.3.2 Direct Action Against Insurers

The objective of adequate compensation to oil pollution victims is further achieved by the provision of direct action against the insurer of a liable ship owner.[62] This is a major departure from the traditional insurance policy under which a third party cannot bring an action against the insurer. Insurance is a contract between the insurer and the insured ship owner. As such, there is no privity of contract between the insurer and the third party victim. This is especially the case in *indemnity* insurance as opposed to mere *liability* insurance.[63] Although the purpose of both liability and indemnity insurance is the same i.e., protection of the insured against

[58] This is because unlike the CLC or the HNS Convention, the Bunkers convention does not envisage an *exclusive fund* for bunker oil pollution. Liability for bunker oil pollution would be treated like any other liability of ship owner under general liability conventions in terms of priority of payment from the liability fund. See Wu (2002), p. 564; see also articles VII.9 of the CLC and 12.9 of the HNS Convention.

[59] See art. 2(1)(*a*) and (*b*) of LLMC 1976; see also Griggs et al. (2005), pp. 134–136.

[60] See *the Hague-Visby Rules*; *the Hamburg Rules*. The liability limit under the cargo conventions is further subject to the limit under LLMC 1976 as cargo is only one of many possible property claims to be met from the general limitation fund set up according to LLMC 1976.

[61] The Bunkers Convention entered into force on 21 November 2008; see *supra* note 54. However, the claimants for non-bunker oil pollution may encounter difficulties to obtain compensation despite compulsory insurance because they would not be able to bring direct action against the insurer. See *infra* Sect. 6.3.2.

[62] Article VII.8 of the CLC.

[63] See Hazelwood (2000), p. 141. See also *West Wake Price & Co. v. Ching* [1957] 1 W.L.R. 45 at 49; *Ali Galeb Ahmed, et al. v. American Steamship Owners Mutual Protection and Indemnity Association Inc. et al.* [1978] A.M.C. 586; *Weeks v Beryl Shipping Inc.* (1988) 845 F. 2d. 304; these cases were cited in Hazelwood (2000), p. 141 note 4.

the financial burden of third party liability, *indemnity* insurance especially that provided by the P&I clubs is strictly based on a 'pay-to-be-paid' policy.[64] An insured ship owner has to pay out the victim first in order to claim indemnification from the insurer. The oil pollution liability regime has changed this policy and practice by according pollution victims the right to bring direct action against insurers.[65]

6.3.2.1 No Policy Defence or Exception Allowed

Compulsory insurance will be of no use to a victim of oil pollution if insurers can deny compensation by pleading policy defences or exceptions against the insured ship owners.[66] Commensurate with its primary goal of adequate compensation, the oil pollution liability regime prevents insurers from invoking the insured's breach of contractual obligations such as failure to pay premium to deny pollution victims the insurance proceeds. The CLC stipulates that insurers cannot avail themselves against a pollution victim of any defence which they could use against their insured.[67] The only exception to this provision is the defence of 'wilful misconduct' of the insured. However, insurers never have to pay more than the liability limit under the CLC even when an insured ship owner is liable above the CLC limit due to certain conducts which may not amount to wilful misconduct.[68]

[64] See Gauci (1997), pp. 221–224; Tan (2006), pp. 42–43.

[65] Article VII.8 of the CLC provides, "Any claim for compensation for pollution damage may be brought *directly* against the insurer or the person providing financial security for the owner's liability for pollution damage." (Emphasis added).

[66] Røsæg (2000), p. 10.

[67] Article VII.8 of the CLC.

[68] Article VII.8 of the CLC. Wilful misconduct appears to be different from conducts barring limitation of liability under Article V.2 of the CLC. The latter conducts are ship owner's "personal act or omission, committed with the intent to cause [pollution] damage, or recklessly and with knowledge that such damage would probably result." Ship owners' personal act or omission to cause pollution damage does not appear to be a defence for the insurer against a pollution victim's claims. In this respect, wilful misconduct seems to be a more serious offence than a personal act or omission with the intent to cause damage. Yet, for the purpose of denying the right to limited liability, wilful misconduct appears to be a lesser fault than personal act or omission as only the latter deprives the ship owner the right to limit liability. In practice and in their ordinary meaning, they may be one and the same thing. In that case, there seems to be some contradictions or oversight in Article VII.8 of the CLC because one conduct is a defence and the other is not. Similar comments can be made also with regard to 'a reckless conduct,' another conduct barring the right of limitation. However, if these conducts also amount to wilful misconduct, victims of pollution will lose the right of direct action against insurers more often than would be the case otherwise.

6.3.2.2 Direct Action in Other Maritime Convention

Again, inspired by the success of the oil pollution liability regime in providing adequate compensation, the IMO incorporated the provision of direct action against insurers in some other maritime liability conventions together with the provision of compulsory insurance. These are the HNS Convention, the PAL 1974 and the Bunkers Convention.[69] Although the provision of compulsory insurance under the Bankers Convention would benefit the liability claimants under the 1976 LLMC in securing their compensation up to the liability limit under the latter convention, these claimants cannot take advantage of the direction action provision under the Bankers Convention. Only the claimants for bunker oil pollution damage could bring a direct action against the insurer.[70] This is because the basis of general liability claims is the 1976 LLMC which does not allow direct action, while the basis of bunker oil pollution damage is, of course, the Bunkers Convention with its provision on direct insurance.

6.3.3 Arguments for Direct Action and Compulsory Insurance

Direct action against insurers as well as compulsory insurance should be included in the general liability convention i.e., the LLMC 1976 if *adequate compensation* is thought to be a desirable goal of general maritime liability law. Although compensation *per se* should not be the goal of liability law,[71] securing compensation through compulsory insurance and direct action may enhance the *deterrent* effect of liability law.[72] This is because, without compulsory insurance and direct action, there is always some possibility that ship owners may escape their liability and this possibility may in turn induce them to reduce their care level.

[69] See article 12 (8) of the HNS Convention, article 5.10 of 2002 Protocol to PAL 1974 and article 7.10 of the Bunkers Convention.

[70] Article 7.10 of the Bunkers Convention.

[71] Because when both injurers and victims can buy liability insurance and first party insurance respectively, the appeal for liability law as a means of compensation greatly disappears. The only justified goal of liability in the presence of widespread insurance is the creation of deterrence, which would lead to the reduction of negligently-caused accidents. See Shavell (2004), pp. 267–269, 635–638.

[72] It is noteworthy here that *compensation* does not affect the goal of *deterrence* if compensation is *fully* borne by the party who can cost-effectively prevent or reduce oil pollution. On how to balance both deterrence and compensation goals through liability law, see generally Trebilcock (1989), pp. 19–54.

6.3.4 Capacity of Insurance Market

Naturally ship owners and their liability insurers, the P&I clubs, would be opposed to the inclusions of provisions on compulsory insurance and direct action in the general maritime liability laws. They might argue that such provisions are not feasible in non-oil pollution liability regimes because of the diverse nature of cargoes on non-tankers and the lack of insurability for such cargoes.[73] These arguments would not be very persuasive as ship owners already have insurance against these types of liability through their P&I clubs. There may not be any need to change the present insurance arrangements at all. All that would be needed is to make compulsory what ship owners always purchase on their own volition and then to secure the benefit of the existing insurance for liability claimants through direct action against insurers. As mentioned earlier,[74] compulsory insurance will force those ship owners who try to escape liability through 'corporate veil' to pay for their liability. Direct action, on the other hand, will ensure that the intended beneficiaries do in fact have access to the proceeds of the compulsory insurance.

6.3.5 Certificate of Insurance

Compulsory insurance and direct action against insurers would fail to guarantee *adequate compensation* if ship owners can avoid verification by the state authorities of contracting states about the existence of insurance. In order to facilitate such verification, ship owners are required under the CLC to carry on board the proof of insurance in the required form of an insurance certificate.[75] A state party to the CLC can deny a ship without such certificate to enter its ports or terminal installations.[76] Traditionally, the flag state is the authority to issue the various certificates a ship is required to carry under international laws.[77] However, for the insurance certificate

[73] Ship owners and their P&I clubs made these and similar arguments in almost every maritime liability convention intended either to increase their liability or to provide compulsory insurance. See IMO (1983); IMCO (1978).

[74] *Supra* notes 40 and 41 with accompanying texts.

[75] Article VII.4 of the CLC.

[76] Article VII.11 of the CLC.

[77] For example, under the MARPOL 73 flag States are required to issue certificates of compliance with regard to the conformity of a ship to the construction and design provisions. Similarly, it is also the duty of the flag State to issue certificate confirming that the tank size of the tankers conforms to the MARPOL provisions. See also article 217(3) of United Nations Convention on the Law of the (LOSC), United (1982) 21 I.L.M. 1261, which requires flag States to ensure the existence of necessary certificates on board their ships: "States shall ensure that vessels flying their flag or of their registry carry on board certificates required by and issued pursuant to international rules and standards. . .."

under the CLC the issuing state must be a party to the CLC in order for its certificate to be acceptable to the CLC state parties.[78]

A ship from a non-CLC state wishing to trade in the CLC states thus has to obtain the certificate from a CLC state. This provision has checked the possibility of a certificate by a flag state without properly verifying the existence of insurance and the financial viability of the insurers. The provision also indirectly encourages states to ratify the CLC so that they can issue the certificate to their own ships in order to enable them to trade with the major oil-importing countries.[79] Most of the major oil-importing countries are parties to the CLC/Fund convention regime with the noticeable exception of the US.[80] When in doubt about the financial capability of the insurer, a contracting state can consult with the certificate-issuing contracting state.[81] This ensures that insurance does not exist only in paper.

6.3.6 *Insurance Through the IOPC Fund*

The primacy of the goal of adequate *compensation* over that of *deterrence* under the oil pollution liability regime is most obvious in the establishment of the IOPC Fund. As the contributions to this fund come exclusively from cargo owners i.e., the oil industry and not from ship owners, the question of *deterrence* is not relevant with regard to the fund. When negligence is a causative factor in an oil pollution incident, in most of the cases it would be that of ship owners or their employees.[82] Yet, part of the compensation for pollution damage from such an incident would come from the IOPC Fund when the damage exceeds the ship owners' liability

[78] Article VII.2 of the CLC.

[79] The major oil importers are now the USA, Japan, China, Italy, and South Korea. With the exception of the US, the rest of the countries are parties to the CLC. See the list of countries parties to the CLC/Fund Convention at the IOPC Fund website at http://www.iopcfunds.org/about-us/membership/map/. Accessed 03 September 2013.

[80] However, in the USA similar certificate is also required under the OPA. See 26 U.S.C. § 9509 (c)(2)(A).

[81] Article VII.7 of the CLC.

[82] Although it is true that oil spill due to a ship owner's negligence may give rise to more harm and lead to higher liability than would be the case for a similar accident involving *non-oil* cargo, there is no justifications in shifting the liability to cargo owners i.e., the oil companies for ship owners' negligence. Once the cargo is in the ship, oil companies have no control over its care. Despite this, during the negotiations of the CLC and the Fund Convention some states wanted to impose liability on the oil industry because of the inherent nature of the oil cargo to cause higher damage. For example, the Danish delegate reasoned during 1969 conference, "Maritime transport was not dangerous in itself: it was only dangerous if the goods carried were dangerous and it was therefore normal to impose liability on the cargo for any damage caused to a third party. The industry which made a profit from that business should also accept the risks entailed." IMCO (1973), p. 628. On the other hand, Canada's main concern was adequate compensation for oil pollution regardless of who would pay for it. See M'Gonigle and Zacher (1979), p. 172.

limit. Despite the absence of any direct *deterrence* from it, the IOPC Fund provides another source of *compensation*, the main goal of the oil pollution liability regime. The Fund's function is similar to that of a second insurance layer.

6.3.6.1 Situations When the IOPC Fund Gets Involved

As a second layer of insurance, the IOPC Fund provides compensation only when a claimant for oil pollution damage is unable to obtain *full compensation* from ship owners. The claimant may fail to obtain full compensation either because no compensation is available from ship owners[83] or because it is inadequate.[84] The first of these two situations may arise in the highly unlikely event of both a ship owner and his liability insurer becoming bankrupt.[85] It may also be due to the fact that the involved ship owner is not liable at all.[86] The second situation i.e., inadequate compensation is more common and exists due to the ship owners' limited liability. Most cases requiring compensation from the IOPC Fund in the past arose due to the inadequacy of the ship owners' liability limit.[87]

6.3.6.2 The IOPC Fund's Source of Contributions

The contributions to the fund come from cargo interests i.e., the oil companies who receive oil via sea in the contracting states to the Fund Convention.[88] The contributions are comparable to the premium paid by ship owners to their mutual P&I clubs. In both cases, the total contribution is determined on the basis of the Fund's and the P&I club's respective annual payouts to the victims of oil pollution. The only difference is that the P&I clubs take into account the *claim history* and/or *care level* of each ship owner for the calculation of that ship owner's contribution, while the IOPC Fund does not consider these factors in determining the levies it imposes on each contributing oil company.

The single factor for the calculation of an individual oil company's contributions is the amount of its oil-receipt via sea transport.[89] Like the advance and

[83] Article 4 (1) (b) of the Fund Convention.

[84] Article 4(1) (c) of the Fund Convention.

[85] This may also occur if a tanker does not have insurance at all because insurance is not compulsory on the tankers of 2,000 grt or below.

[86] For example, oil pollution caused by an exceptional natural phenomenon. See article III.2 (a) of the CLC.

[87] See T. Mensah, "The IOPC Funds: how it all started", IOPC Funds (2003), p. 48; see also Tan (2006), pp. 305–306.

[88] Article 10 of the Fund Convention.

[89] Some suggested imposing differentiated levies on oil companies based on actual incidents involved in the carriage of each company's oil. The justification for this suggestion is that such differentiation will force the oil companies to charter ships of best qualities and to avoid chartering sub-standard ships as a means of cutting the cost of chartering at the expense of safety. See Tan

supplementary "calls" made by the P&I clubs,[90] the IOPC Fund also levies contribution on the oil companies first based on the anticipated liability and then based on the actual liability.[91] Technically, there may be credit back to the contributors if the actual liability is less than the anticipated amount, although such situation is rare.[92]

6.3.6.3 The IOPC Fund's Effects on Deterrence

Although the establishment of the IOPC Fund ensures adequate *compensation*, the provision of compensation from the Fund may reduce the *deterrent* effect of liability on ship owners to the extent the Fund pays for oil pollution caused by the negligence of ship owners. As can be seen, this argument is not really against the Fund's function to provide adequate compensation but against its function to partially absorb a negligent ship owner's liability.

Although in many cases both functions may occur at the same time, in some cases the Fund serves the first function without the second one. For example, there are situations under the Fund Convention where the Fund pays for compensation against oil pollution even though there is no question of ship owners' liability because the polluting incidents happened *without any negligence* on the part of ship owners.[93] These situations include natural disaster,[94] the action of a third party, or the negligence of the government authority in charge of maintaining lights and navigational aids.[95] In the latter two situations, the Fund may claim reimbursement from the third party and the government under the principle of subrogation.[96]

(2006), pp. 342–343. The benefit of such mechanism would be indirect. On the other hand, inducing ship owners to proper maintenance of their ships would be direct and more efficient. For comments on similar suggestions about the identical contribution formula to oil industry's private agreement i.e., CRISTAL (Contract Regarding an Interim Settlement of Tanker Liability for Oil Pollution, (1971)10 I.L.M. 137), to compensate oil pollution damage, see M'Gonigle and Zacher (1979), p. 182 note 105.

[90] Hazelwood (2000), p. 122.

[91] See IOPC (2013), pp. 5–6. See also M'Gonigle and Zacher (1979), p. 192 note 131.

[92] In the 1992 IOPC Fund, only in the year 2000, £3.7 m was credited back to the contributors from the unused contributions of 1999.

[93] Article 4 (1)(a) of the Fund Convention.

[94] This situation is expressly mentioned in article III.2 (a) of the CLC as an exonerating factor for ship owner's liability. Its absence among exonerating factors in the Fund Convention is deliberate as article 4 (4) (b) of the convention describes the conditions for the Fund to pay compensation in such situation.

[95] The liability of the Fund in these two situations is by implication as they are not mentioned among the exonerating situations. This is also clear from the negotiation of the parties at the 1971 Conference, during which some states including Canada and the US demanded that the Fund should cover *all* cases of oil pollution damage not covered by the CLC. However, as a compromise the Fund is exonerated only from liability for oil pollution from unknown sources (mysterious spill) or when the cause of the damage is war or war-like situation. See M'Gonigle and Zacher (1979), pp. 184–185.

[96] Article 9.2 of the Fund Convention.

The payment from the IOPC Fund for oil pollution damage caused solely by natural disaster reinforces the fact that the primary goal of oil pollution liability regime is the provision of *compensation* as opposed to the creation of *deterrence* from negligence.[97] However, the provision of adequate *compensation* from the fund in the above three situations does not reduce the *deterrent* effect of the liability law because no optimal precautionary measures by ship owners could prevent the pollution incidents from occurring in those cases.[98] Consequently, there can be no objection to the Fund's function in providing compensation where ship owners' *negligence* has *no* causal connection with an incident of oil pollution damage. In such cases, the fund functions solely as the insurer for the pollution victims and not for any negligent ship owner.

6.3.6.4 The Fund's Payment for Natural Disaster

The justification of compensation from the IOPC Fund in the cases of natural disaster lies in the social benefit of internalizing the cost of 'externality' arising from oil pollution.[99] The oil pollution damage suffered by third parties such as fishermen is an external social cost (externality) flowing from the transportation of oil.[100] If neither ship owners nor oil companies bear this cost, the price of oil paid by consumers would not reflect this externality. Consequently, the market price of oil would be less than its real social cost and there would be an excessive consumption of oil. In other words, some people whose benefits from the consumption of oil are less than its real social costs would buy oil.

On the other hand, if the oil industry pays for this kind of oil pollution damage, the price of oil will reflect its real social cost and those consumers whose utility from the consumption of oil falls below this cost would not consume this valuable scarce resource.[101] Put differently, the price of oil will internalize the external cost of oil pollution. Internalization of externality leads to the optimal resource allocation and prevents social waste. This also indirectly reduces the incidents of oil pollution to the extent they are causally correlated to the amount of oil transported via sea because the reduction in consumption also brings the reduction in the

[97] It is noteworthy here that the liability of the Fund to its maximum limit applies *per natural disaster* regardless of the *number of shipping incidents* from the same disaster. See article 4.4(b) of the Fund Convention. M'Gonigle and Zacher (1979), p. 185.

[98] The deterrent effect of liability is compromised when a potentially liable person who can take care to prevent or to reduce the loss does not have to pay for full liability because other parties such as the IOPC Fund foot the bill.

[99] 'Externality' is the cost to third parties arising from the transaction between the parties to a contract, e.g., financial damage to fishermen from oil pollution. For the definition of 'externality,' see d'Arge and Hunt (1972), pp. 266–267.

[100] Mitchell (1994), pp. 74–75.

[101] See generally Calabresi (1970), pp. 70–72.

transportation of oil. This is why imposing levies on oil companies for oil pollution damage from ships due to the natural elements of the sea makes economic sense.

6.3.6.5 A Similar Fund Under the HNS Convention

This second-tier insurance arrangement through the IOPC Fund has greatly contributed to the success of oil pollution liability regime in providing adequate *compensation*. Although provisions have been made for a similar fund under the HNS Convention,[102] the HNS Fund faces a huge challenge in terms of charging levies on a very diverse group of contributors. Unlike oil, the substances covered under the HNS Convention and carried via sea are different in nature and also pose dissimilar risks. The number of such substances is likely to exceed 6,000 and they are carried by different types and sizes of vessels.[103] This would be the main obstacle to the provision of second tier insurance through the HNS Fund if and when the HNS Convention comes into force. The contributors of the HNS Fund would be various chemical companies.[104]

6.3.7 Insurance Through the Supplementary Fund

The goal of *adequate compensation* for oil pollution damage has been greatly advanced when the Supplementary Fund was created in 2003 in a succession of initiatives following the *Erika* incident off the coast of Brittany, France, in 1999.[105] The Supplementary Fund can provide up to SDR 750 million (US$1.13 billion) for a single oil pollution incident on the waters of a contracting state.[106] The Supplementary Fund functions as the *third tier insurance* against oil pollution damage.[107] It kicks in when the liability limit of the IOPC Fund is exhausted in compensating for oil pollution damage. The compensation mechanisms of the Supplementary

[102] See article 14 of the HNS Convention. The HNS Fund would cover damages up to SDR 250 million including SDR 100 m from ship owners.

[103] See Tan (2006), p. 336.

[104] See generally Tan (2006), p. 334 *et seq*.

[105] The ship broke into two with 30,000 tons of heavy fuel oil. It spilled 19,800 tons of oil. A total of 7,131 claims for compensation were made for a total of €388.9 m. The total compensation paid is €129.7 m. See the IOPC Fund website at http://www.iopcfunds.org/incidents/incident-map/#1999-235-December. Accessed 03 September 2013.

[106] See *supra* note 16 with accompanying text. This amount is, however, in combination with SDR 230 m from the IOPC Fund and SDR 89.77 m from ship owners.

[107] Even though no incident requiring compensation from the Supplementary Fund has yet occurred since its coming into existence on 03 March 2005, the contracting states or the oil companies in those states have been levied £0.0017223 per ton of contributing oil on 01 March 2007 for meeting the Supplementary Fund's administrative expenses. IOPC (2013), p. 7.

Fund are similar to those of the IOPC Fund. As a result, all the above discussion relating to the IOPC Fund's effect on *deterrence* from negligent navigation equally applies to the Supplementary Fund.

6.3.7.1 Contribution Mechanism

The contributions to the Supplementary Fund come from the oil companies in the contracting states to the Supplementary Fund Protocol. Like the IOPC Fund, the Supplementary Fund levies those oil companies which receive oil over 150,000 tons via sea in the contracting states.[108] One big difference between the two funds is that each *contracting state* to the Supplementary Fund has to make a minimum contribution whether or not any company in that state receives oil over 150,000 tons. For the purpose of the minimum contribution, a state is presumed to have received 1 million tons of contributing oil.[109] The responsibility to pay for any amount falling short of the minimum in a contracting state lies with the government of that state.[110] The purpose of this provision is to ensure that each contracting state bears some expenses of the Supplementary Fund.[111]

The compulsory payment for a minimum amount makes the Supplementary Fund resemble more a mutual *insurance* fund than a compensation fund for oil pollution. Like an insured in an insurance pool, each contracting state to the Supplementary Fund Protocol has to contribute something in order to benefit from this extra layer of insurance protection. On the other hand, a state to the Fund Convention does not have to pay any contribution to the IOPC Fund if no oil company in that state received over 150,000 tons of oil in a fiscal year.[112] In fact, 16 out of 62 state parties to the Fund Convention in 2001 did not have to pay any contribution to the IOPC Fund because no oil companies in those states received oil over the minimum threshold.[113] The non-contributing states are mainly from *developing* countries with small economy. This formula of the IOPC Fund is a better approach than that of the Supplementary Fund to achieve the goals of adequate compensation for oil pollution damage and the protection of marine environment.[114]

---

[108] Article 10 of the Supplementary Fund Protocol.

[109] See article 14.1 of the Supplementary Fund Protocol.

[110] Article 14.2 of the Supplementary Fund Protocol.

[111] 92FUND/A.6/4; 92FUND/WGR.3/9, 7.2.26 at pp. 19–20.

[112] Article 10 (1) of the Fund Convention.

[113] IOPC (2001), p. 165.

[114] It is noteworthy here that oil pollution compensation covers not only losses suffered by individual victims but also environmental damage and the expenses for preventive measures to reduce or eliminate the environmental damage from spilled oil. See article I.6 of the CLC on the definition of 'pollution damage'. In fact, compensation for environmental damage represents the highest cost in total payouts for oil pollution.

6.3.7.2 Objection to the Contribution Mechanism

From the environmental point of view, the contribution formula of the Supplementary Fund is objectionable. The mandatory minimum contribution formula discourages the developing states to become parties to the Supplementary Fund Protocol. Yet, an oil spill incident may cause as much damage to a developing country as to a developed one and may require as much compensation both for the clean-up and for the monetary damage arising from the incident. Despite this equal need for compensation, the burden of minimum compulsory contribution under the Supplementary Fund on developing countries would be unequally heavy. This burden is an obstacle to the wider ratification of the Supplementary Fund Protocol.[115] Most of the ratifying states are the wealthy European countries.[116]

It is true that developing countries may receive less oil and may transport oil in smaller tankers. They may thus be less exposed to devastating oil pollution incidents, an observation supported by the history of the most disastrous oil pollution incidents.[117] This observation also supports against the minimum compulsory contribution to the Supplementary Fund by developing countries as they would rarely require compensation from it. This does not mean that they do not need to have the assurance of compensation from the Supplementary Fund for an unexpectedly large incident exceeding the limit of the IOPC Fund.

In addition, oil pollution incidents in some developing countries may occur due to the transportation of oil to some developed countries *en route* the former. For example, the oil tankers from the Persian Gulf to Western Europe, Japan and the US touch the waters of many African and Asian countries.[118] Yet, if a disastrous oil pollution incident occurs in one of these countries, compensation will not be forthcoming from the Supplementary Fund because these countries are not parties to the Supplementary Fund Protocol. They have been discouraged to ratify the Supplementary Fund Protocol by its requirement of minimum contribution.

6.3.8 Insurance from National Oil Pollution Funds

Although the issue of adequate compensation may seem to have been fully settled by the creation of the Supplementary Fund, neither all types of 'oil' nor the

[115] One of the factors for the widespread acceptance of the Fund Convention is that the governments of the contracting states do not have to contribute any money to the IOPC Fund. It is only oil companies in the states on whom the burden falls. See Tan (2006), pp. 332–333.

[116] As of 03 September 2013, there are 29 state parties to the Supplementary Fund. They are mostly from European Union. See at http://www.iopcfunds.org/about-us/membership/map/. Accessed 03 September 2013.

[117] *Torrey Canyon*, *Amoco Cadiz*, *Exxon Valdez*, *Erika*, *Nakahodka* and *Prestige* all occurred on the waters of the developed countries.

[118] M'Gonigle and Zacher (1979), pp. 115, 185–187, 233.

pollution from the recognized types are covered under the international oil pollution liability regime. Compensation is limited to the pollution damage from 'persistent oil.'[119] Even if the polluting oil is persistent oil but the source of pollution (i.e., the ship which discharged the oil) is not known, no compensation would be provided from any of the funds.[120] In addition, many states may be unwilling to become party to the Supplementary Fund due to its compulsory minimum contribution. As a result, the Supplementary Fund would be of no help to these states. Thus, there still remains the need for some additional source of compensation.

Canada responded to this need through the establishment of the Ship-Source Oil Pollution Fund (SOPF).[121] The SOPF provides coverage for any oil pollution damage not covered by the international liability law regime due to any of the above reasons. However, this fund is heavily subsidizing ship owners at the expense of its contributors i.e., the oil companies. In many cases of domestic oil pollution, there is no connection between the contributors and the beneficiaries of the SOPF. Most of the oil pollution cases compensated by the SOPF arise from the bunkers of *non-tankers*.[122] Non-tankers are not usually involved in the transportation of oil for the oil companies. The solution seems to lie in requiring non-tankers to carry compulsory insurance against the oil pollution from their bunkers.[123]

[119] Article I.5 of the CLC defines "oil" as "any *persistent hydrocarbon mineral oil* such as crude oil, fuel oil, heavy diesel oil and lubricating oil, whether carried on board a ship as cargo or in the bunkers of such a ship." (Emphasis added). The same definition is included in article 1.2 of the Fund Convention by reference. Canada's proposal to define 'oil' under the Fund Convention more widely to include 'liquid hydrocarbon of any kind' was opposed by the oil industry and many oil-importing countries on the ground, *inter alia*, that such wide definition would cause the involvement of the Fund in a large number of minor oil spill cases. See LEG/CONF.2/C.1/SR.3 in IMCO (1978), pp. 320–321.

[120] An American proposal to require the IOPC Fund to pay compensation for 'mysterious' spills also rejected by the oil industry and their supporters on the same ground that it would necessitate frequent involvement of the Fund for many small spills. Yet, the Scandinavian proposal (LEG/CONF.2/C.1/WP.26) to limit the Fund's contribution only to cases of oil pollution damage exceeding 15 million francs (US$1 m) was also rejected. See IMCO (1978), pp. 355–365, 384–388; M'Gonigle and Zacher (1979), pp. 185–187 and note 118.

[121] S. 77 of *Marine Liability Act*, 2001, c. 6.

[122] The Administrator of Ship-source Oil Pollution (2006), p. 37. This was one of the reasons for the oil industry in the 1971 IMO conference to reject the provision of compensation in cases of oil spills from unknown sources. See IMCO (1978), pp. 320–321.

[123] Although the entry into force of the Bunker Convention will address the problem to a large extent, the convention does not apply to smaller ships with 1,000 or less gross tons. See article 7.1 of the Bunker Convention.

6.4 Limitation of Liability: An Impediment to Deterrence

Despite its success in providing adequate *compensation*, the oil pollution liability regime may fail to fully *deter* ship owners from negligent navigation because their liability under the regime is limited.[124] However, since the limit of ship owners' liability under the CLC is set at a substantially higher level than under other maritime liability conventions, *most incidents* of oil pollution damage fall within the liability limit of the CLC.[125] In other words, ship owners pay fully for their liability in most of the oil pollution cases. To the extent ship owners bear full liability for oil pollution caused by their negligence, they will be motivated to take optimal care to prevent such pollution.

Due to the presence of limited liability there will still be some cases where the oil pollution damage would exceed the liability limit of ship owners and the IOPC Fund would have to pay for the additional damage in those cases.[126] As some of these incidents may be caused by the negligence of ship owners, the limited liability for oil pollution in those cases would interfere with the deterrent effect of liability law. The prospect of limited liability may influence the decision of ship owners on precautionary measures especially when the costs of such measures are more than their *expected oil pollution liability* even though they are less than the *expected oil pollution damage*. This divergence between expected liability and expected damage is caused by the limitation of liability and it distorts the incentives towards optimal care level.[127]

This distortion will not occur if the cost of care is less than the expected liability despite the liability being limited or if the accidents causing oil pollution damage above the liability limit are unusual or 'freakish' in nature and thus are unforeseeable.[128] The latter possibility exists in some maritime liability cases. For example, marine insurers usually do not increase insurance premium following shipping accidents with liability above US$2 million.[129] This is because such high liability is normally the result of a combination of factors and not merely the consequence of negligence even though negligence might have triggered the incidents in the first place. These factors may include the place and the time of an incident, the post-incident control measures and the lack of proper coordination

[124] See Chap. 3 for the effect of limited liability on deterrence.

[125] From the inception of the IOPC Fund in 1978–2003, only 125 incidents necessitated the involvement of the Fund; most of the payments were due to the inadequacy of ship owners' limitation amount. See T. Mensah, "The IOPC Funds: how it all started" in IOPC Funds (2003).

[126] From 1978 to 2003 in the 125 incidents affecting 20 countries involving the payment from the Fund, it paid more than US$700 million. See T. Mensah, "The IOPC Funds: how it all started" in IOPC Funds (2003).

[127] See Sect. 3.3.2.1.

[128] See Shavell (2004), pp. 238–239.

[129] See OECD (2004).

etc.[130] However, if the same insured incurs very high liability in more than the usual number of cases, this fact may be an indication of the insured's negligence as opposed to random mishaps.

The main objection raised by ship owners and their P&I clubs against unlimited liability is the un-insurability of such liability.[131] As discussed in Chap. 3, this objection may be rebutted by the fact that liability law in most non-maritime cases does not contain the concept of limited liability and still there appears to be no problem with the availability of liability insurance. Liability insurance in those cases is, of course, limited in amount. The insured bears the risk of liability exceeding the insurance limit. Same practice can be adopted in marine oil pollution liability i.e., to impose unlimited liability but to require insurance for a minimum threshold. Although unlimited liability with compulsory insurance up to a limit would fail to guarantee compensation above the insurance limit, the fear of liability beyond the insurance limit would motivate potentially liable parties towards optimal care. In any case, there will always be the IOPC Fund to cater for the portion of oil pollution compensation which is not paid by ship owners or their insurers.

6.5 Decrease of Accidental Oil Spills: Possible Reasons

The higher limit of liability may be the partial reason for the decline in the incidents of oil pollution damage. Empirical evidence shows that the incidents of *accidental* oil spills from *tankers* are steadily decreasing.[132] A survey of oil spill incidents in Canada shows that between 1993 and 2006 only 7.5 % of the total spills were from *tankers*, while 75.5 were from *non-tanker* and 17 % from unknown ships/other sources ('mysterious spills').[133] This trend can be observed not only in Canada but worldwide. Except South Korea, every country in the world saw a dramatic decrease in the number of oil spills from *tanker* in the last 30 years.[134]

For large spills over 700 tons, there were more than 25 spills worldwide on average per year from 1970 to 1979. The number of such spills declined to 9.3 per

[130] For example, the *Exxon Valdez* incident cost the highest amount of liability, despite its being only the 35th largest world-wide oil spills in terms of volume. The total economic cost was estimated over US$12 billion. Kiern (2000), pp. 481–482.

[131] The official records of maritime liability conferences, organized to adopt liability conventions, are full with this objection. See, e.g., IMO (1983), pp. 112–113, where the International Chamber of Shipping (ICS) said, ". . .the main justification of limitation of liability today is *the insurability of the risk* with its two elements, the availability of cover and economic cost." (Emphasis added.)

[132] Oil pollution liability regime addresses oil pollution damage from tankers only. See article I.1 of the CLC.

[133] The Administrator of Ship-source Oil Pollution (2006), p. 37.

[134] See the following link for the website of the International Shipowners Pollution Federation Ltd (ITOPF) at http://www.itopf.com/information-services/data-and-statistics/statistics/index.html. Accessed 03 September 2013. See also Huijer (2005).

year during 1980–1989, 7.8 incidents in the period of 1990–1999, 3.3 spills per year over the period of 2000–2009 and only 1.7 spills per year between the years 2010 and 2012.[135] In addition to the number, the size of oil spills also gradually decreased. Out of almost 10,000 oil spills from 1970 to 2007, 81 % of them were below 7 tons, with most of the large spills occurring in the earlier years.[136]

Logically, the amount of oil spilled per year is also on the decline from 1980 onward except few random years when one or two large spills made the total quantity exceed the annual average by a large margin.[137] This downward trend in the incidents of oil spill is the result of many factors including the above-mentioned insurance arrangements, the strict liability for oil pollution, high liability limit as well as some *non-liability* law factors. Among the non-liability law factors include improved tanker design and strong port state control. We will shortly discuss all these factors below.

6.5.1 The Role of Insurance in the Decrease of Oil Pollution

Although we have highlighted mainly the role of insurance in adequate *compensation* in the above, the insurance arrangements in the oil pollution liability regime also incidentally improved the *deterrent* effect of liability law. Improved *deterrence* in turn contributed to the reduction of oil pollution incidents. As we have occasionally alluded to the latter role of insurance when discussing the justifications of the various insurance arrangements, the discussion here will be brief.

6.5.1.1 Compulsory Insurance Increases Liability

First of all, *compulsory insurance* makes it impossible for a negligent ship owner to escape liability through the 'corporate veil' by forming 'one-ship' company.[138] This increases the probability of actual liability on ship owners. If, for instance, ship owners could escape their liability in one case out of two in the past, they will now have to pay in both cases. As a result, their expected liability would be higher now than before. This will in turn reflect in the insurance premium they pay. Higher expected liability and insurance premium will make the expenditure on care more cost-efficient. In other words, if the cost of optimal care seemed higher than the

[135] See ITOPF website; Huijer (2005).

[136] See ITOPF website; Huijer (2005).

[137] See ITOPF website; Huijer (2005). As for similar progress in the USA, see the statement of the US Coast Guard's Commandant, Mr. James Loy, in Joint Hearing on Oil Pollution Act of 1990 Before the Subcommittee on Coast Guard and Maritime Transportation and Water Resources and Environment of the House of Commons on Transportation and Infrastructure, 106th Cong. (1999).

[138] See *supra* note 45 with accompanying text about the widespread practice of forming 'one-ship' corporation and its consequent evasion of ship owners' liability.

expected liability in the past due to some possibility of the escape from liability through 'corporate veil', the cost may now appear lower than the expected liability due to the higher probability of liability. Consequently, a ship owner will now have more incentives to take optimal care.[139]

6.5.1.2 Direct Action Further Increases Liability

Direct action against the insurers makes the *probability* of actual liability even higher than what would be the case otherwise even with the presence of compulsory insurance. The probability of liability increases in the presence of direct action because in its absence there would be some cases where an insured ship owner may be bankrupt and at the same time the insurer could deny the insurance proceeds arguing one of the following two reasons. First, despite compulsory insurance, an insurer could refuse to pay on the ground that the insured had breached a policy condition. Secondly, the insurer could also deny the proceeds to a victim of oil pollution by arguing the absence of privity of contract between the insurer and the victim. Both these possibilities are eliminated in the direct action provision of the oil pollution liability regime.[140]

As the insurers are now more exposed to liability claims, they will increase the insurance premium. Increased premium will in turn induce the insured ship owners to reduce the insurer's exposure to oil pollution claims.[141] The only way the insured can do this is by improving their care level. Dramatic reduction in oil pollution accidents may at least partly be due to this indirect incentive towards care caused by the provision of direct action in the oil pollution liability regime.

This provision also motivates the insurers to be extra vigilant against the negligent conducts of their insured ship owners. As will be discussed in the next chapter, insurers have various tools such as premium rate variance, deductibles, policy limit, and even the outright denial of coverage to check the carelessness of the insured.[142] As insurers use these tools even when there is no provision on direct action against them, they now have added incentives to use them more often. The end result is more pressure on the owners of substandard ships to take optimal care.

---

[139] The cost for *optimal care* cannot be more than expected liability because *optimal care*, by definition, is care which costs less than the 'probability-discounted' i.e., expected liability. See Calabresi and Hirschoff (1972), pp. 1056–1057. However, the cost of optimal care *might appear higher* due to the lower probability of being held liable or the higher probability of escape from paying for liability judgment. See Shavell (2004), pp. 230–232, 387–401.

[140] See article VII.8 of the CLC and *supra* the discussion on direct action against insurer.

[141] See generally Abraham (1986), p. 15.

[142] These mechanisms make the insured as 'co-insured' or 'self-insured' by making the insured bear at least partially the risk of the loss or liability. See Arrow (1974), pp. 141–143.

6.5.1.3 Pressure from Oil Industry on Ship Owners

Lastly, although the second and third tiers of insurance through the IOPC and Supplementary Funds are funded by the oil industry, the oil industry indirectly puts some pressures on ship owners to be more diligent in the operation of their ships. This is because oil companies, who are the main contributors to the Funds, are also the major customers of the oil-carrying ships (tankers). As the operation of these ships has direct effect on the ultimate contributions made by the oil companies to the Funds, the oil companies as a group are naturally opposed to and united against substandard shipping. This opposition led to various oil-industry initiatives to motivate ship owners towards optimal care. One such initiative is a database maintained by the oil industry to identify substandard ships, known as Ship Inspection Report (SIRE) Program.[143]

Another initiative is to demand some indemnification from ship owners for compensation paid out of the IOPC and the Supplementary Funds especially in cases of liability for smaller ships where the Funds are more likely to bear a disproportionately higher burden. In this regard, following the creation of the Supplementary Fund two voluntary agreements[144] were reached between the oil companies and ship owners (through their International Group of P&I clubs). Under the agreements ship owners will indemnify the Funds for oil pollution either arising from smaller ships or requiring contribution from the Supplementary Fund. Again, the increased burden of liability on ship owners through these insurance arrangements leads to more deterrence and to the consequent reduction in oil pollution incidents.

6.5.1.4 'Coase Theorem' and the Reduced Oil Pollution

The point just discussed proves at least partially a much repeated statement in the economic analysis of liability law. If there is no transaction cost, optimal care (i.e., the optimal allocation of resources to bring such care) will be undertaken regardless of which party bears the initial liability.[145] Although a transaction with zero cost may never exist in the real world, transaction cost would be minimal and the parties

[143] See the following link from the website of Oil Companies International Marine Forum (OCIMF) at http://www.ocimf.com/SIRE/Introduction. Accessed 03 September 2013.

[144] They are: Small Tanker Oil Pollution Indemnification Agreement (STOPIA) 2006 and the Tanker Oil Pollution Indemnification Agreement (TOPIA) 2006. These agreements were in operation since 20 February 2006. Under the first agreement, ship owners' International Group of P&I clubs (the Group) will bear the liability up to SDR 20 million for oil pollution from any ship with total tonnage of 29,584 or less in the contracting states to Fund Convention despite the lower limit of ship owners' liability under the CLC. Under the latter, the Group will indemnify the Supplementary Fund 50 % of the payment for oil pollution arising from any ship covered by the Group. See IOPC (2013), pp. 7–8.

[145] Coase (1960), pp. 1–23.

could allocate the resources optimally where the parties are in a bargaining position and "are of approximately equal size, number, expertise, and wealth".[146]

In the context of oil pollution liability, such transactions do exist between ship owners and oil companies due to their equal bargaining power and their mutual dependency on each other.[147] As a result, although the contributions to the IOPC and the Supplementary Funds come from oil companies, through market mechanisms the oil companies are able to induce ship owners to take optimal precaution in order to reduce oil pollution incidents.

6.5.2 *Higher Limit of Liability*

Despite the existence of limitation principle in oil pollution liability regime, the liability limit in it is very high compared to other maritime liability law conventions. The higher liability limit is certainly a contributing factor in the reduction of oil pollution incidents. As discussed above, higher limit means damages for most of the oil pollution incidents are within the ship owners' liability limit. In these cases, the liability of ship owners is *practically unlimited* because they pay for the full liability arising from these incidents.[148] This high liability limit guaranteed by compulsory insurance and direct action against insurers makes negligent ship owners pay the full price of their negligence in most of the time.[149] Consequently, ship owners are more careful in preventing or reducing oil pollution damage than is the case with other areas of maritime liability.

6.5.3 *Strict Liability for Oil Pollution Damage*

In addition to higher limit, the oil pollution liability regime imposes strict liability on ship owners.[150] A claimant for oil pollution damage does not have to prove any negligence on the part of an involved ship owner in order to receive compensation.

---

[146] Calabresi (1970), p. 172.

[147] Both oil companies and ship owners have their own organizations protecting their respective interests in any international forum and bilateral meeting. Oil Companies International Marine Forum (OCIMF) represents the former, while International Chamber of Shipping (ICS) is the main voice of the latter.

[148] Only 125 oil spills involved contributions from the IOPC Fund during 1978–2003. Not in all the cases the contributions from the Fund were due to the limited liability of ship owners, although most of them were so. See T. Mensah, "The IOPC Funds: how it all started", in IOPC Funds (2003), p. 48.

[149] As ship owner's liability is strict under the CLC, the issue of negligence arises indirectly. For connection between premium and care level, see Shavell (2004), pp. 261–265.

[150] See article III.1 of the CLC.

Strict liability creates stronger *deterrence* in the minds of polluters than the negligence-based liability and consequently leads to more reduction in oil spills. This is simply because in a negligence-based liability there is always some likelihood that courts or victims will not be able to detect or prove the fault of the defendant.[151] This likelihood may in turn encourage a potentially liable party to reduce his or her care level especially those aspects of care which are difficult to observe or prove by other people.[152]

The above likelihood does not exist in strict liability situation because ship owners will be liable for oil pollution regardless of any proof of fault. As a result, they will be motivated to take any cost-justified care to prevent or reduce oil pollution damage notwithstanding the possibility that courts or victims may be unable to detect or prove certain aspects of care. Although it is hard to say how many incidents of oil pollution are prevented or their magnitude is reduced by the imposition of strict liability, one can surmise that strict liability certainly contributes to the improvement of care and to the reduction of oil pollution incidents.

The flip side of strict liability is that it may lead a potential victim of oil pollution to relaxing their safeguards against pollution damage[153] if they can in fact take any such cost-efficient safeguards in the first place. The likelihood of being affected by oil pollution for an individual victim is, however, so low that the victim may not take any precautionary measures designed specifically against possible oil pollution damage regardless of liability rule. For example, many fishermen or tourist shops on the world's sea beaches will never be affected by oil pollution. Consequently, those few who will randomly suffer losses from oil pollution may not find it worthwhile to spend on any precautionary steps against oil pollution damage even if they do not receive any compensation from ship owners.

On the other hand, the likelihood of ship owners not taking proper precaution[154] and thus causing oil pollution is very high if they are not liable for such pollution. Imposing liability on ship owners would, therefore, lead to better precaution and reduce oil pollution incidents. In other words, liability on ship owners has positive incentive effect on their behavior. As the negative incentive effect of strict liability on victims is non-existent in oil pollution liability situations, strict liability for oil pollution is a better choice than negligence-based liability law. To put it differently, as the design of liability rule for oil pollution has no or little impact on the victims' behavior, liability rule should be based on its effect on the ship owners' behavior.

Strict liability does not mean that ship owners bear liability for other people's fault; that would be the case in *absolute* liability.[155] Strict liability makes ship

[151] Shavell (1987), pp. 8–9; Shavell (2004), pp. 98–99 and 189.

[152] Shavell (1987), pp. 8–9; Shavell (2004), pp. 98–99 and 189.

[153] See Shavell (1987), pp. 11–17.

[154] For example, if a ship is not equipped with a properly-functioning radar or up-to-date chart, or the master of the ship is not well-trained, the ship is more likely to be stranded in shallow water or hit a rock and spill oil.

[155] See M'Gonigle and Zacher (1979), pp. 150–151.

owners *prima facie* liable for oil pollution, which most likely occurs due to the fault of ship owners or their employees. It puts the burden of proof on ship owners to show otherwise in order to escape from liability. Where ship owners can show that the incidents of oil pollution arose due to some natural catastrophes or the negligence of the victims themselves, of third parties or of governments in charge of maintaining navigational aids and lights, ship owners will not be liable for the pollution damage.[156]

6.5.4 Improved Design and Construction of Tankers

6.5.4.1 Double-Hull Tankers

One of the important factors leading to the reduction of *accidental* oil pollution is the gradual improvements of tanker design and construction. Double-hull tankers are very effective design in reducing oil pollution. As the term suggests, double-hull tankers contain an extra layer on the bottom and on the side of a ship in addition to the layer covering the oil tanks. The additional layer reduces the impact of collision or grounding and thus lowers the possibility of oil spills from the tanks containing oil.[157]

Through various amendments to the MARPOL 73/78,[158] most of the world oil tankers today are fitted with double-hulls. Unlike the case with many *discharge* provisions[159] in the MARPOL 73/78 and its predecessor the OILPOL 54,[160] the requirement of double-hulls met with unprecedented success. As of January 2007, 72 % of the world's tankers above 10,000 dwt (dead-weight ton) are fitted with double-hulls.[161] This success is largely due to the comparative ease in the

[156] Article III.2 of the CLC.

[157] See Tan (2006), pp. 139–140.

[158] 1973 International Convention for the Prevention of Pollution form Ships, 12 I.L.M. 1319, as amended by its 1978 Protocol, 1341 U.N.T.S. 3; 17 I.L.M. 546 (1978). Subsequent amendments will be noted below.

[159] Discharge provisions are related to the amount of oil, mixed with waste water, which can be released on various zones of the sea by ships as part of their operation such as ballast, bilge waste, or tank-washing.

[160] 1954 International Convention on the Prevention of Pollution of the Sea by Oil, 327 UNTS 3, as amended in 1962, 600 UNTS 332, in 1969, 9 ILM 1, and in 1971, 9 ILM 25.

[161] Tanker Facts 2007 in *Annual Review and Report 2006/2007* (INTERTANKO, 2007), available at http://www.intertanko.com/about/annualreports/2006/index.html. Accessed 28 March 2008. Data on small tankers is difficult to obtain as most of them are engaged in coastwise navigation.

enforcement and verification of *physical standards* such double-hulls or "segregated ballast tanks" (SBT)[162] as opposed to *discharge* or navigational standards.[163]

Like the case with many other oil pollution prevention initiatives, the proposal for double-hulls was first made after the *Torrey Canyon* oil pollution incident in 1967. Following the incident, increased public outcry against oil pollution in the US and elsewhere led to the adoption of many new initiatives against both *operational* and *accidental* oil pollution problem. The adoption of the MARPOL 73 is one of those initiatives, the US being its main initiator and the driving force. In the 1973 International Conference on Marine Pollution, which adopted the MARPOL 73, the US proposed double-hulls/bottoms and SBT for all *new* tankers over 70,000 dwt. Although the proposal for the SBT on new tankers over 70,000 dwt was incorporated in the MARPOL 1973,[164] the proposal for double-hulls was rejected at that time as a compromise.[165]

Following the *Argo Merchant* incident on its waters in 1976, the US made another proposal in the 1978 Tanker Safety and Pollution Prevention (TSPP) Conference to require the installation of double hulls as well as SBT on *all* the new and existing tankers above 20,000 dwt.[166] Again, the US had to compromise on its demand for double-hulls. The 1978 Protocol required only that all *new* tankers above 20,000 dwt had to be fitted with SBT and that such SBT has to be 'protectively located' on the edge of the tankers[167] so that they can absorb the impact of collisions and prevent accidental oil spills.[168] Although the design of SBT itself is mainly intended to reduce the *operational* oil pollution by doing away with the need to use oil tanks for ballast, a 'protectively located' SBT reduces also the oil spills from *accidental* collisions.

The final push for double-hulls from the US came in the aftermath of the *Exxon Valdez* incident in 1989.[169] Following the incident Congress enacted the OPA. Although the main concern of the OPA is with oil pollution compensation, it also contains provisions for the gradual phase-out of all single-hull tankers by the year 2015.[170] In addition to the enactment of national law on the matter, the US together with the Netherlands and the Scandinavian countries demanded similar measures in

[162] Installation of SBT obviates with the need to use oil tanks for ballast on the return voyage from the port of discharge to the port of loading. Clark (2001), p. 67. See generally M'Gonigle and Zacher (1979), pp. 107–122; see also Tan (2006), pp. 128–132.

[163] Hawkes and M'Gonigle (1992), p. 215; Mitchell (1994), p. 99. Tan (2006), pp. 236–239.

[164] Regulation 13 of Annex I to MARPOL 73. In its 1978 Protocol, SBT was required for all new tankers over 20,000 dwt.

[165] See M'Gonigle and Zacher (1979), pp. 108, 118–119; Mitchell (1994), pp. 94–98; Tan (2006), pp. 128–131.

[166] M'Gonigle and Zacher (1979), pp. 126–130; Mitchell (1994), pp. 100–103; Tan (2006), p. 135.

[167] Regulation 13E of Annex I to MARPOL 73/78.

[168] Tan (2006), pp. 135–137; M'Gonigle and Zacher (1979), pp. 130, 140–141.

[169] See Mitchell (1994), p. 104; Tan (2006), p. 139–140.

[170] §4115 of the *Oil Pollution Act of 1990*, PL 101-380 (HR 1465), codified as 46 U.S.C. §3703a.

the international law.[171] As a result, the IMO convened a conference to amend the MARPOL 73/78 in 1992.

After the protracted negotiations and strong opposition from the shipping interests as well as from the oil industry, amendments were finally made to Annex I of the MARPOL 73/78.[172] Regulation 13F of Annex I requires that all *new* tankers of 600 dwt and above be fitted with double-hulls. As for the *existing* tankers, crude oil tankers over 20,000 dwt and product tankers over 30,000, which were not built according to the 1978 MARPOL Protocol design (i.e., SBT design), have to be retrofitted with double-hulls by the end of 25 years from their delivery date. The tankers which were built according to the 1978 MARPOL specifications have 30 years from the date of their delivery to be retrofitted with double hulls.[173] Although alternative designs which are as effective as that of double-hulls in providing protection against oil pollution were also allowed, no such commercially viable alternatives appeared in the market.[174]

Following the *Erika* incident in 1999, the political pressure from the European Commission (EC) led the IMO to bring forward the deadline for the phasing out of single-hull tankers under the MARPOL 73/78 to that of the OPA i.e., 2015.[175] In the aftermath of the *Prestige* incident in 2002, further pressure from the EC led to a new amendment in 2003 to Regulation 13G and rescheduled the period for phasing-out process from 2015 to 2010 for all types of tankers.[176]

[171] Tan (2006), p. 141.

[172] 1992 Amendments to the Annex of the Protocol of 1978 relating to MARPOL, 1973, Resolution 52(32) of the Marine Environment Protection Committee (MEPC).

[173] See Regulation 13G of the Annex I to MARPOL73/78. Although the US was the initiator of the 1992 amendments to MARPOL 73/78, it expressed its reservation not to be bound by the amendments, citing mainly the inconsistencies between the amendments and its OPA. Because the OPA requires that *all* new tankers be fitted *only* with double hulls, while Regulation 13 F requires that vessels above *600 tons* have either double hull or *alternative design* providing with equal protection. The US's reservation in fact led to the faster retrofitting of the existing tankers with double hull because most major tankers cannot afford to ignore the domestic law of the US, the world's largest consumer of oil. See Ayorinde (1994), pp. 75–76; Tan (2006), p. 146.

[174] See Tan (2006), p. 146.

[175] See Regulation 13G as amended by 2001 amendments to the Annex of the Protocol of 1978 relating to MARPOL, 1973, Resolution MEPC.95 (46). See also Tan (2006), pp. 147–149. It is noteworthy that all these amendments to MARPOL 73/78 quickly came into force because MARPOL 73/78 contains tacit acceptance procedures. Under these procedures an amendment would be presumed accepted after 10 months from its adoption unless there is objection to the amendment by at least one-third of the parties or by the parties whose combined merchant fleets constitute not less than 50 % of the gross tonnage of the world's merchant fleet. However, a state can express its intention that it would be bound only by its express approval. See art. 16(2)(f)(ii), (iii) and 16(2)(g); Mitchell (1994), pp. 98, 114.

[176] See 2003 amendments to the Annex of the Protocol of 1978 relating to MARPOL, 1973, Resolution MEPC.111(50). See also Tan (2006), pp. 150–151.

6.5.4.2 Size of Oil Tanks

The size of oil *tanks* in a tanker, though does not reduce the *number* of oil pollution incidents, has significant impact on the actual *amount* of oil spilled after a collision or grounding. A crack in a bigger tank following an accident will usually lead to more oil-outflow on the sea than would be the case for a relatively smaller tank. Again, the issue of tank size first arose after the devastating oil spill from the *Torrey Canyon* in 1967.[177] There was no restriction on the size of oil tanks until the 1971 amendments to the OILPOL 1954.[178] The 1971 amendments required that the tank size of any tanker up to 400,000 dwt not be more than 30,000 m^3. Any tanker above 400,000 dwt can increase the size of the tanks proportionately but cannot be more than 40,000 m^3.[179]

The 1971 amendments further required that any ship, the building contract of which is placed after January 1, 1972, would have to be built in accordance with the above mentioned specifications regardless of whether their flag states ratified the amendments.[180] This requirement removed the incentives for states not to ratify the amendments in order to give their ships competitive advantage over the ships from the contracting states.[181] The strategy was very successful as it was found in 1973 that almost all the tankers ordered after January 1972 were built according to the 1971 specifications.[182]

The MARPOL 73/78 also contains other provisions against the *intentional* or *operational* oil pollution including the above mentioned SBT and the crude-oil-washing (COW) of oil tanks.[183] The discussion of those provisions is beyond the scope of this chapter as our main concern here is the reduction of *accidental* oil pollution through oil pollution liability together with some other factors. It is noteworthy here that many incidents of oil spills on Canadian waters are from 'mysterious' i.e., unidentified sources and these are most likely from *intentional*

[177] See M'Gonigle and Zacher (1979), pp. 102–106.

[178] The 1971 amendments to OILPOL 54 are reprinted in (1972) 11 ILM 267.

[179] Regulation 3 of Annex C to the OILPOL 54.

[180] Article VI bis (1)(b) of the OILPOL 1954. These amendments were carried forward to the MARPOL 1973 with the modification of the dates. MARPOL also contains similar enforcement strategy for fitting the new tankers with SBT. See Annex I, regulations 1(6), 13, 24. Mitchell (1994), pp. 98, 102–103.

[181] M'Gonigle and Zacher (1979), pp. 106, 235–236.

[182] M'Gonigle and Zacher (1979) at p. 106.

[183] COW reduces oil pollution by replacing sea water with oil to wash oil tanks because the used oil will be refined as opposed to the used seawater which is usually thrown back to the sea. Another method to reduce operational discharge widely used in 1960s and 1970s is load-on-top (LOT). Under this process, oil mixed ballast water was retained in the tanks until the oil floats to top. The water was then decanted from the bottom and fresh load of oil is taken on top of the oil from the ballast. Clark (2001), pp. 65–67. LOT was introduced through the 1969 amendments to the OILPOL 54, (1970) 9 ILM 1. See M'Gonigle and Zacher (1979), pp. 96–102.

discharges.[184] Neither ship owners under the CLC nor the IOPC Fund under the Fund Convention provide compensation for the pollution damage and clean-up cost of such spills.[185] The SOPF foots the bill in those incidents. It may be time for Canadian legislature to seriously consider ways to reduce such mysterious oil spills.

Possible ways to reduce such spills include increased monitoring by the Canadian Coast Guard as well as installing adequate reception facilities for oily waste mixtures from both tankers and non-tankers. Even when the source of spilled oil is identified, the government sometimes faces difficulty in recovering compensation from the liable ship owners due to the limited liability principle or the lack of any other assets of the liable owners.[186] This difficulty may be partially overcome by requiring all ships, regardless of their size and type, to carry compulsory insurance.[187] This would not be something very unusual as similar requirement exists for the owners of automobiles.

6.5.5 Strong Port-State Control

Strong port-state control over foreign ships is another contributing factor to the reduction of oil pollution incidents. The increasing power of the port-states over other countries' ships is a new phenomenon in maritime law. There are various conventions and regulations against substandard shipping especially on the ship's construction, design, equipment, crew training, pollution prevention, classification etc. However, the enforcement of these laws has been problematic. The root cause of this problem lies in the assignment of the responsibility to the flag states to enforce these laws.[188] Such assignment of the enforcement-jurisdiction is based on the legal fiction that vessels are the 'floating land masses' of their flag states[189] and thus should be subject only to the flag states' control. Yet, a flag state does not

[184] The reason they are most likely not *accidental* is that an accident would also cause damage to the vessel and the vessel would be easily detected. An undetected source of discharge indicates that the vessels left the scene harmless after the discharge, indicating the absence of any accident.

[185] Although Canada together with other coastal states in the 1971 IMO Conference advocated for the provision of compensation by the IOPC Fund for such spills, the proposal was not adopted due to strong resistance from the oil companies which argued that the source of such pollution is mainly *bunker oil* as opposed to their *oil cargo*. See M'Gonigle and Zacher (1979), p. 185; Tan (2006), pp. 304–305.

[186] See The Administrator of Ship-source Oil Pollution (2006).

[187] In fact, a similar proposal was made during the negotiations in the 1969 IMO conference leading to the adoption of the CLC. See LEG/CONF/C.2/WP.46; cited in M'Gonigle and Zacher (1979), pp. 204–205 and note 14.

[188] Mitchell (1994), p. 76.

[189] McDorman (2000), p. 210. State can grant nationality to any ship, provided that there is 'a genuine link between the state and the ship'. This principle is now codified in article 91(1) of the LOSC. The condition of 'genuine link' was subject of considerable contentions among states and academics in the context of 'flag of convenience.'

always have the best incentive to implement these laws against its ships especially when the pollution caused by the ships will mainly affect the waters of other states i.e., the coastal or port states.[190] The lack of incentives is even more for a flag state which is landlocked or has insignificant maritime commerce. Most of the ships registered in such states are owned beneficially by foreign nationals. The main reason for letting the ships register in these states is to earn registration fees.[191]

The problem of flag states' inertia to enforce the above laws is now largely resolved by the increasing port-state control over foreign vessels in their ports.[192] The main goal of strong port-state control is to eradicate substandard shipping. To the extent substandard ships are responsible for oil pollution incidents, the control of such ships by port-states contributes to the reduction in oil pollution incidents. Although a flag state still retains the jurisdiction to enforce various international laws on its ships anywhere,[193] a port- or a coastal-state also has the power to demand any foreign ship on its water to comply with its laws[194] especially those based on international conventions.[195]

The above power of a port- or a coastal-state is based on the legal sovereignty of a state over its territorial water.[196] Although the concept of sovereignty on territorial water was always recognized, it came into conflict with another equally valid concept of the 'freedom of the high seas' and its ancillary doctrine of the 'freedom

[190] For example, Liberia is the flag state for about 30 % of the world's oil tankers. Yet, geographically it does not lie in the major tanker routes and suffers little from oil pollution. Mitchell (1994), p. 76. Mitchell succinctly expressed similar lack of incentive and authority by flag and coastal states to prevent oil pollution, "While nations with incentives to control pollution lack the authority to do so, those with the authority may lack the incentives." Mitchell (1994), p. 76.

[191] Tan (2006), pp. 24, 179, 203.

[192] See generally Hare (1997), pp. 571–594.

[193] This is recognized in the preamble of all the MOUs in the following wording, "Mindful that the principal responsibility for the effective application of standards laid down in international instruments rests upon the authorities of the state whose flag a ship is entitled to fly..." See the preamble to the Paris MOU.

[194] See article XI of the OILPOL 1954 and articles 4 and 9(3) of the MARPOL 1973. See also article 5(4) of the MARPOL 1973, which allowed the contracting states to enforce the convention on ships from non-contracting states "as may be necessary to ensure that no more favourable treatment is given to such ships" (i.e., to prevent any competitive advantage).

[195] See articles 2, 19, 24, 211(4), 218 and 220 of the LOSC. This also alleviates the problem of non-ratification by a flag state of international instruments with the safety and pollution prevention standards in order to give its ships competitive advantage. This is because a port state can enforce its laws implementing the international instruments on any ships voluntarily entering its ports regardless of the fact whether the ships' flag states are parties to the those instruments. See McDorman (2000), p. 212.

[196] The International Court of Justice (ICJ) in *Nicaragua v. USA*, 1986 I.C.J. 14, at 111 stated that "by virtue of its sovereignty that the coastal state may regulate access to its port."; cited in McDorman (2000), p. 218. See also McDorman (1997), pp. 305–322. A port or coastal state's sovereignty on its territorial water is, however, subject to the right of 'innocent passage' by foreign ships. See article 5(2) of Geneva Convention on the Territorial Sea and Contiguous Zone, April 29, 1958, 516 U.N.T.S. 205; articles 2, 19, 24, 211(4), 218 and 220 of the LOSC.

of navigation'. As a result, the right of a coastal- or port-state to enforce various pollution prevention laws on foreign ships even at their territorial waters was limited.[197]

Even though this limited enforcement jurisdiction always existed,[198] port-states in the past rarely inspected foreign ships at their ports or required the observance of national or international laws due to the fear of losing the competitive advantage over the ports of their neighboring states.[199] Today, however, the regional grouping of port-states for the purpose of uniform inspection on ships has been very effective to remove this fear of competitive disadvantage. As no port-state in the group can turn a blind eye to substandard ships, these ships would have no reason to prefer the ports of one state over that of another. In other words, the similar measures undertaken by all the states in a region ensure that substandard ships will be driven out from all the ports in the region.

With the increasing close co-operation among the various regional port-state control authorities, the movement of substandard ships is getting confined to even narrower geographic areas. This will consequently hurt the owners of substandard ships and may finally force them either to improve their standards or to discontinue their business. The port-states in various parts of the maritime world grouped together and signed the regional port-states memorandum of understandings (MOUs).[200]

Like many other oil pollution preventive measures initiated as a response to a devastating oil spill, the first MOU on the port-state control was adopted after the

[197] Although the LOSC recognizes that the passage of a foreign ship can be denied in case of pollution (i.e., the passage is not *innocent*), the pollution has to be "wilful and serious". This is very restrictive condition as a discharge of oil from ships can hardly be both *wilful* and *serious* at the same time. This is because while *accidental* discharges are serious, they are not wilful. On the other hand, *operational* discharges are wilful but are not usually serious when taken separately. The second limitation on port- or coastal-states' jurisdiction is that they cannot impose on foreign ships stricter regulation than "generally accepted rules and standards" with regard to construction, design, equipment and crewing. See articles 2, 19, 24, 211(4), 218 and 220 of the LOSC; see also M'Gonigle and Zacher (1979), pp. 244–245.

[198] See article XI of the OILPOL 1954 and articles 4 and 9(3) of the MARPOL 1973; article 17 of the Geneva Convention on the Territorial Sea and Contiguous Zone. See generally M'Gonigle and Zacher (1979), Chap. VI.

[199] McDorman (2000), pp. 207–209, 211. This was clear from the IMO's survey in 1961 on 12 states which had been parties to the OILPOL 54 for 4 years. Among them, Belgium, Ireland, and Sweden reported no violation of the convention on their territorial waters. France and the Netherlands had reported only one offence each. UK and Germany, however, had reported 83 % of about 600 offences, while Canada, Denmark, and Norway reported modest enforcement. M'Gonigle and Zacher (1979), p. 220, notes 43 and 44, citing 1962 CONF/2.

[200] The first regional MOU was signed in Paris by the EU port states in 1982: Memorandum of Understanding on Port State Control in Implementing Agreement on Maritime Safety and Protection of the Marine Environment, (1982) 21 I.L.M. 1. This was followed by similar MOUs in the port states in other regions such as 1992 Latin American MOU, 1993 Tokyo MOU, 1997 Mediterranean MOU, and 1998 Indian Ocean MOU. All these MOUs follow a similar pattern as that of Paris MOU. See McDorman (2000), pp. 208–209.

Amoco Cadiz oil spill in France on 17 March 1978.[201] Under such a MOU, port-states in a region implement a similar set of international instruments,[202] inspect a certain percentage of the vessels entering the ports to ensure compliance with those instruments,[203] and then share the information about the inspected vessels.[204]

The port-states under these regional MOUs usually deny defective or non-compliant ships entry into or departure from the ports until the defect is rectified or the required law is complied with.[205] For example, under the Paris MOU factors such as multiple detentions, the failure to carry ISM[206] certificates or the failure to call at an indicated repair yard may lead to the complete ban on the entry into any port in the region.[207] The port-states under the regional MOUs require that the entering ships comply with the widely accepted international instruments on construction, safety, pollution prevention and crew training.[208] As all the states have to enforce the similar legal instruments, no port state can gain competitive advantage over its neighboring port-states by allowing ships without compliance with those instruments (substandard ships) to enter their ports.[209]

One of the most effective strategies of port-state control against substandard shipping is the dissemination of information through the internet about the quality of the inspected vessels and the identity of their owners and charterers, their flag

[201] Mitchell (1994), pp.105, 108.

[202] S. 2.1 of both the Tokyo and Paris MOUs.

[203] Under the Tokyo MOU (Asia-Pacific region), the target is set at 75 % of the total number of ships operating in the region. See s.1.4 of the Tokyo MOU. On the other hand, Paris MOU sets the goal of inspecting 25 % of the ships entering the ports in the region; s 1.3. This has, however, led inspection of 90 % of the vessels using the ports under Paris MOU. Kiehne (1996), p. 219. Both the Paris and the Tokyo MOUs provide a list of factors to target vessels for inspection on a priority basis. See s.1 of Annex 1 to the Paris MOU and ss.3.3.1 and 3.3.2 of the Tokyo MOU.

[204] Ss. 1.5 and 4.1 of the Tokyo MOU and s.1.4 of the Paris MOU.

[205] Ss.3.6 and 3.7 of the Tokyo MOU.

[206] International Safety Management Code (ISM). ISM Code was made part (Chap. IX) of the International Convention for the Safety of Life at Sea, 1974, 1184 U.N.T.S. 2 [hereinafter 1974 SOLAS Convention] by its 1994 amendment. McDorman (2000), p. 214.

[207] See ss.3.10.5 and 3.12 of the Paris MOU. The list of banned ship is posted at http://www.parismou.org/Inspection_efforts/Bannings/Banning_list/. Accessed 03 September 2013.

[208] For example the Tokyo MOU requires compliance with the following conventions: the International Convention on Load Lines 1966 and its 1988 Protocol, the 1974 SOLAS Convention, together with its 1978 and 1988 Protocols, 17 I.L.M. 579, the MARPOL 73/78, the International Convention on Standards for Training, Certification and Watch-keeping for Seafarers, 1978 (STCW), the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG), 1050 U.N.T.S. 16, the International Convention on Tonnage Measurement of Ships, 1969, T.I.A.S. No. 10,490, and the Merchant Shipping (Minimum Standards) Convention, 1976 (ILO Convention No. 147), 15 I.L.M. 1288. S. 2.1 of the Tokyo MOU. However, each state can enforce only the instruments it ratified and thus binding upon it (s.2.4). States cannot require more rigorous standards for foreign ships than those for its own ships (s.2.6).

[209] This is specifically recognized in the preamble of all the MOUs.

states and the classification societies.[210] Unfavourable information on these aspects makes a ship's future insurance premium higher and the target of more inspections in the future. Frequent inspection may be costly for a ship owner or charterer especially when the ship is running on a tight schedule.

Even though a port- or a coastal-state does not have the enforcement jurisdiction outside its ports and territorial waters, a vessel cannot stay outside a port forever and has to come to a port at some point of time for loading and discharging its cargo. The enhanced port-state control thus compensated for the flag-states' lack of incentives to implement international laws on their ships.

6.6 Conclusion

The oil pollution liability law regime is the best example of how proper insurance arrangements can guarantee the success of liability law in providing adequate *compensation* and can also incidentally *deter* ship owners from negligence. However, its excessive focus on *compensation* sometimes ignores the most important goal of liability law i.e., *deterrence* from negligence. Limiting liability of a negligent ship owner and providing compensation from various funds do not promote the goal of *deterrence*.

Luckily, however, the concept of limited liability did not lead to an increase in oil pollution incidents. In fact, the accidental oil pollution incidents are on the decline. This is brought about by a multiple of factors. In addition to the innovative insurance arrangements, the strict and higher liability limit for oil pollution, the improved design and construction of oil tankers and strong port-state control all contributed to this success. In other words, it is the combined effect of *liability law* and *regulations* on oil pollution which brought the reduction in oil pollution incidents. The whole set of *liability laws* and *regulations* on oil pollution is thus a classic example of interplay and complementary effects of *liability laws* and *regulations* to achieve a desired goal such as the reduction of oil pollution; the shortcoming of one is compensated by the other.[211]

[210] Both the Paris and the Tokyo MOUs' websites contain search database for inspected ships. The websites are http://www.parismou.org/ and http://www.tokyo-mou.org/. Accessed 03 September 2013. There is also a new database, Equasis, which combines the information on substandard ships from various MOU regions into one source. See http://www.equasis.org/EquasisWeb/public/HomePage. Accessed 03 September 2013. See also Mitchell (1994), pp. 105–106.

[211] On different justifications and effects of liability laws and regulations, see Shavell (1984b), p. 357 and Shavell (1984a), p. 271. See also Brown (1978–1979), p. 122.

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven

Arrow KJ (1974) Essays in the theory of risk-bearing. North-Holland Publishing Company, Amsterdam

Ayorinde A (1994) Inconsistencies between OPA'90 and MARPOL 73/78: what is the effect on legal rights and obligations of the United States and other parties to MARPOL 73/78? J Marit Law Commer 25:55–94

Billah MM (2011) The role of insurance in providing adequate compensation and in reducing pollution incidents: the case of the international oil pollution liability regime. Pace Environ Law Rev 29:42–78

Brown C (1978–1979) Deterrence and accident compensation schemes. Univ West Ont Law Rev 17:111–154

Burrows P et al (1974) The economics of accidental oil pollution by tankers in coastal waters. J Public Econ 3:258

Calabresi G (1970) The costs of accidents: a legal and economic analysis. Yale University Press, New Haven

Calabresi G, Hirschoff JT (1972) Towards a test for strict liability in torts. Yale Law J 81:1055–1085

Chao W (1996) Pollution from the carriage of oil by sea: liability and compensation. Kluwer Law International Ltd, London

Clark RB (2001) Marine pollution, 5th edn. Oxford University Press, Oxford

Coase RA (1960) The problem of social cost. J Law Econ 3:1–23

d'Arge RC, Hunt EK (1972) Environmental pollution, externalities, and conventional economic wisdom: a critique. Environ Aff 1:266–286

Gauci G (1997) Oil pollution at sea: civil liability and compensation for damage. Wiley, Chichester

Gold E (1991) Marine pollution liability after "Exxon Valdez": the U.S. "All-Or-Nothing" lottery! J Marit Law Commer 22:423–444

Griggs P et al (2005) Limitation of liability for maritime claims, 4th edn. LLP, London

Hare J (1997) Port state control: strong medicine to cure a sick industry. Georgia J Int Comp Law 26:571–594

Hawkes S, M'Gonigle RM (1992) A black (and rising) tide: controlling maritime oil pollution in Canada. Osgoode Hall Law J 30:165–260

Hazelwood S (2000) P&I. Clubs: law and practice, 3dth edn. LLP, London

Huijer K (2005) Trends in oil spills from tanker ships 1995–2004. In: 28th arctic and marine oil spill program technical seminar, Calgary, 7–9 June 2005. http://www.itopf.com/_assets/documents/amop05.pdf

IMCO (1973) Official records, international legal conference on marine pollution damage, 1969. IMCO, London

IMCO (1978) Official records of the conference on the establishment of an international compensation fund for oil pollution damage 1971. IMCO, London

IMO (1983) Official records of the international conference on the limitation of liability for maritime claims, 1976. IMO, London

IOPC (2013) The international regime for compensation for oil pollution damage: explanatory note. http://www.iopcfunds.org/fileadmin/IOPC_Upload/Downloads/English/explanatorynote_e.pdf. Accessed 1 Sept 2013

IOPC Funds (2001) Annual report 2001: international oil pollution compensation fund. IOPC Funds, London

IOPC Funds (2003) The IOPC funds' 25 years of compensating victims of oil pollution incidents. IOPC Funds, London

Kiehne G (1996) Investigation, detention and release of ships under the Paris MOU on port state control: a view from practice. Int J Marit Coast Law 11:217–224
Kiern LI (2000) Liability, compensation, and financial responsibility under the oil pollution act of 1990: a review of the first decade. Tulane Marit Law J 24:481–590
M'Gonigle RM, Zacher MW (1979) Pollution, politics, and international law: tankers at sea. University of California Press, California
McDorman TL (1997) Port state enforcement: a comment on article 218 of the law of the sea convention. J Marit Law Commer 28:305–322
McDorman TL (2000) Regional port state control agreements: some issues of international law. Ocean Coast Law J 5:207–225
Mitchell R (1994) Intentional oil pollution at sea: environmental policy and treaty compliance. MIT, Cambridge
O'Sullivan J (1995) Industrial injuries and compulsory insurance – adding insult to injury. Camb Law J 54:241–243
Organization for Economic Co-operation and Development (OECD) (2004) Maritime transport committee report on the removal of insurance from substandard shipping. http://www.oecd.org/dataoecd/58/15/32144381.pdf. Accessed 2 Sept 2013
Payne R (1980) Flags of convenience and oil pollution: a threat to national security. Houst J Int Law 3:67
Røsæg E (2000) Compulsory maritime insurance. Scandinavian Institute of Maritime Law Yearbook 2000. http://folk.uio.no/erikro/WWW/corrgr/insurance/simply.pdf. Accessed 2 Sept 2013
Schwartz G (1987) A proposal for tort reform: reformulating uninsured motorist plans. Ohio State Law J 48:419
Shavell S (1984a) A model of the optimal use of liability and safety regulation. Rand J Econ 15:271
Shavell S (1984b) Liability for harm versus regulation of safety. J Leg Stud 13:357
Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge
Shavell S (2000) On the social function and the regulation of liability insurance. Geneva Pap Risk Insur Issues Pract 25:166
Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge
Sloan F et al (1995) Effects of tort liability and insurance on heavy drinking and drinking and driving. J Law Econ 38:49–77
Tan AK (2006) Vessel-source marine pollution: the law and politics of international regulation. Cambridge University Press, New York
Tetley W (1992) The law of the flag, 'Flag Shopping' and the choice of law. Tulane Marit Law J 17:175
The Administrator of Ship-Source Oil Pollution (2006) Ship-source oil pollution fund - the administrator's annual report 2005–2006. The Administrator of Ship-Source Oil Pollution, Ottawa
Trebilcock MJ (1989) Incentive issues in the design of 'No-Fault' compensation system. Univ Tor Law J 39:19–54
US Government Accountability Office (2007) Maritime transportation: major oil spills occur infrequently, but risks to the federal oil spill fund remain. US Government Accountability Office, Washington
Vance WR (1908) The early history of insurance law. Columbia Law Rev 8:1–17
Wu C (2002) Liability and compensation for bunker pollution. J Marit Law Commer 33:553–568
Zhu L (2007) Compulsory insurance and compensation for bunker oil pollution damage. Springer, New York

Chapter 7
Incentive Effect of Liability Rules in the Presence of Liability Insurance

7.1 Introduction

In all the above chapters we have discussed either how the absence of insurance influenced the design of certain aspects of maritime liability law or what should be the ideal liability laws in the presence of widespread modern insurance. A frequently asked question in the discussion of liability law and liability insurance is how to maintain incentives towards care in the mind of potentially liable parties after they purchase liability insurance. Apparently, when potentially liable parties do not have to pay directly from their own pockets due to the fact that they have insurance, they will have less motivation to exercise proper care. This phenomenon is known in the insurance literature as 'moral hazard'[1] i.e., the tendency of an insured to relax precaution levels against the potential loss or liability. The main question examined here is whether liability insurance really distorts the incentive effect of liability law or whether the presence of liability insurance creates even better incentives.[2]

There are various insurance and legal mechanisms to prevent the problem of moral hazard.[3] Insurance mechanisms provide financial incentives to the insured

An earlier version of the chapter is published in Billah (2008), pp. 427–461.

[1] See Abraham (1986), p. 14. See also Arrow (1963), pp. 961–962; Pauly (1968), p. 535.

[2] Prof. F. James posed the same questions in 65 years ago in James (1948), p. 557. Although my answer to the questions is similar to his, his answer was mainly based on some empirical evidence to the effect that accident rate dropped in some areas where liability insurance is available. See James (1948), pp. 557–563. We, on the other hand, undertook a comparative analysis on the informational strength of courts and liability insurers and on the financial incentives of liability law and insurance mechanisms to induce potentially liable insured to take precautions. We also used some empirical evidence.

[3] The insurance mechanisms include rate variance, deductibles, policy limit, policy exceptions, etc., while the law prevents moral hazard through the duty of disclosure in the pre-formation stage of an insurance contract, insurance warranties and the principles of insurable interest and of indemnity, among others.

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_7, © Springer International Publishing Switzerland 2014

through premium rate variance and coverage restrictions to maintain care. Insurance mechanisms used by the insurer are stronger tools than the threat of legal liability to influence the behavior of the insured in taking proper care. On the other hand, legal mechanisms strengthen the existing informational advantage of an insurer about the care taken by an insured. Superior information helps insurers to determine more accurately than courts about the *expected loss/liability*[4] from the insured activities and the *optimal care* to prevent such loss. Thus, liability insurance can be a complementary force in the realization of the functional goal of liability law in deterring the insured from negligence.[5]

We will attempt to prove that the presence of liability insurance may lead a potentially liable insured to better care than the existence of liability law alone. This is mainly because of better information obtained by insurers and the stronger financial incentives of insurance mechanisms. Other reasons include possibly higher price to pay for being negligent in the presence of insurance than in its absence, the development by insurers of better preventive techniques through research and innovation, the likelihood of better knowledge of the insured about care in the presence of insurance and the dependence of the very survival of insurers' business on their ability to maintain incentives in the minds of the insured.

In Sect. 7.2, we will shortly discuss the interplay between liability law and liability insurance both in an ideal and in the real world. Section 7.3 contains the arguments in support of the main proposition of the chapter that the liability law together with liability insurance can induce better incentives in the mind of potentially liable insured parties towards care than the liability law alone. Section 7.4 presents some empirical evidence to prove the validity of the arguments. Although the analysis is applicable to any area of liability law and insurance, the chapter will examine the above issues in the context of maritime liability and marine insurance.[6]

[4] A defendant's liability usually equals to the loss suffered by the plaintiff. We will, therefore, use the words "loss" and "liability" interchangeably in this chapter unless expressly stated otherwise.

[5] In the presence of widespread liability insurance and accident insurance, the main justification of liability law is its deterrent effect on negligent conducts and not the compensation of victims. See Shavell (2004), pp. 267–269.

[6] Like any form of insurance, marine insurance is a means to manage risk through distribution of risk over a large number insured parties ('interpersonal spreading') and/or through shifting the individual insured's future risk to the insurer in exchange of premium ('inter-temporal spreading'). See Calabresi (1970), pp. 42–43. As discussed in Chap. 2, insurance is just one means to manage risk. Other risk management strategies include personal saving, diversification, contract for future goods and services, and safety precautions. Abraham (1986), pp. 2 and 67. Risk management through marine insurance involves the protection against the loss of a ship (hull insurance), its potential earning capacity (freight insurance), its onboard cargo (cargo or liability insurance, depending on which side bears the burden of cargo loss) and the protection against liability arising from the operation of a ship (liability insurance). Marine insurance can be further divided on the basis of duration of coverage into time and voyage policies and on the basis of the amount of coverage into valued and unvalued policies.

7.2 Liability Law and Liability Insurance

7.2.1 No Liability or Liability Insurance in a Perfect World

In a world of perfect information and costless transaction, there would be no need for liability law. Consequently, the question of *liability* insurance would be irrelevant in such a world. It takes two parties for a liability to occur. In a world of perfect information, whenever the benefit of loss prevention or reduction is more than the cost of care,[7] care will be taken regardless of liability law.[8] If victims (plaintiffs) can take such care, they would naturally do so because there will be a net benefit for them. If injurers (defendants) can take care, the victim would pay the injurers to exercise precautions.

The above observations are the insight from the 'Coase Theorem.'[9] For example, if only a ship owner can prevent cargo loss by taking care or can do so at a lesser cost than a cargo owner, the cargo owner will pay the ship owner to take the precautionary measure in the absence of liability law. If only the cargo owner can prevent or reduce the same loss and at a lesser cost, the cargo owner will naturally take care. In such case even if liability is imposed on ship owners for any loss or damage to the cargo, ship owners will pay cargo owners to exercise care.

Similar reasoning would apply to other areas of maritime liability law including the liability law for oil pollution and for personal injury and death aboard a ship. The party who can eliminate or reduce a loss or can do so at a lower cost would ultimately take care *regardless of liability*. By our assumption of perfect world, the parties know whom between them is the 'cheaper cost avoider' and they can transact with each other without incurring any transaction cost. As there would be no need for liability law in such a world, the question of liability insurance would be irrelevant.

[7] See Coase (1960), pp. 1–23. Optimal care also demands the reduction of an activity level when the benefit from an additional level becomes less than its social cost due to 'diminishing marginal utility.' Courts, however, rarely count activity level in determining due care. We will, therefore, limit the scope of care to the way an activity is conducted and not to its level. See Shavell (2004), pp. 193–198.

[8] For simplicity of the analysis, we assume here that care by any side would eliminate or reduce a loss. There are situations where optimal care would require both parties to take some precautionary measures at the same time. For discussion on unilateral and bilateral care situations, see Shavell (1987), pp. 9–18.

[9] Coase (1960), pp. 1–23.

7.2.2 *Liability and Liability Insurance in the Real World*

In the real world, there is the need for both liability law and liability insurance due to our lack of information and the cost of transaction. For example, prior to an oil pollution incident, there could not possibly be any transaction between a tanker owner and the potential victims of oil pollution because of the lack of information to identify each other. Even if they are able to identify each other, they may not engage in a negotiation because of prohibitively high cost of doing so.[10] In the unlikely event of any such negotiation, the negotiation may not result in an agreement on the cost of care and on who would pay for such costs due to the problems of 'hold-out,' 'free-loading,'[11] and 'free-riding.'[12]

In some cases such as in the contract of carriage situation,[13] the parties know each other. They negotiate and arrive at a contractual agreement on transportation. But they may still fail to arrive at an agreement on taking optimal care for one of the two reasons. First, they may have different views on the cost of care (information asymmetry). Second, even if their views are similar, one party may not pay the other for taking care due to the former's inability to observe the latter's actual care. These shortcomings of market transaction or the parties' lack of information may be overcome by imposing liability on the party who could take optimal care,[14] *provided* that courts can correctly determine the *expected loss* from the lack of care in order to decide *optimal care*.

Ideally, mere existence of liability rule should suffice to induce *optimal care* because optimal care implies that the cost of care is less than the benefit in preventing or reducing a loss or liability. The benefit in the form of complete prevention or partial reduction of a loss/liability is not usually a fixed amount but a 'probability-discounted' or an expected amount.[15] The cost of care, on the other hand, is certain. A potentially liable party would take care if and only if he or she

[10] Such costs include time and efforts and would likely to outweigh the possible benefits. See Shavell (2004), pp. 87–89.

[11] Both the 'hold-out' (i.e., asking more than the reasonable price) and 'free-loaders' (offering less than the reasonable price) problems arise in a 'bilateral monopoly' situation i.e., when the parties (e.g., polluters and the victims of pollution) have no other option but to negotiate with only each other in order to arrive at their desired agreement. See Calabresi and Melamed (1972), p. 1106; Shavell (2004), pp. 91–92.

[12] That is, benefiting from the negotiation of others without personally participating and incurring the cost. This mainly occurs when the number of plaintiffs/defendants is large and the individual benefit from such negotiation is small. Shavell (2004), p. 88.

[13] Lack of due care or negligence (a tort) can occur in many contractual situations such as a contract of employment, contracts to buy foods or to receive medical treatment etc. See Posner (2003), pp. 171–172.

[14] Coase (1960), pp. 15–16. Besides liability, there are other legal rules such as regulations, corrective tax, or subsidy to address the market's failure to arrive at a mutually-beneficial agreement. For various legal rules and their comparative strengths, see Shavell (2004), pp. 92–101.

[15] Shavell (2004), pp. 177–178.

thinks, or better yet, knows that the *expected benefit* from such care is high enough as to justify the sure cost of care. For example, if the party knows that taking care at a cost of $100 would reduce the likelihood of a $1,000 loss by 20 % (say, from 50 to 30 %), he would take care because the *expected benefit* in the form of reduction of the loss/liability would be $200 (20 % × $1,000). As the cost of care in this example is less than the *expected liability*, taking care here is cost-efficient. Not taking care in such situation would amount to negligence.[16]

In other words, negligence occurs in the failure of a defendant to take reasonable precautions when the cost of doing so is less than the cost of accident, discounted by the probability of its happening.[17] Being a rational individual, a potentially liable party would take care and consequently there would not be the actual imposition of liability.[18] As we will see shortly in Sect. 7.3, courts may err in their determination of expected loss and optimal care. As a result, there will be both liability and liability insurance in the real world.

7.2.3 Failure of Liability Law to Induce Optimal Care

In a negligence-based liability setting, the fact that a party is liable means he breached his duty of care i.e., he did not take reasonable care.[19] When a party does not exercise reasonable care despite the presence of liability law, the liability law has failed to create incentives in the mind of that party. The failure of a liability system to create incentives may occur due to the *possibility of escape* by a potentially liable party from liability for some obvious reasons such as the inability

[16] In *U. S. v. Carroll Towing Co*. 159 F.2d 169 at 173 (2d Cir. 1947), Judge Learned Hand held that not taking care amounts to negligence when $B < PL$ where B is the cost of precaution, P the probability and L the magnitude of a loss. In economic analysis of law, this is known as 'Hand Formula.' See Posner (2003), p. 168.

[17] Although courts do not calculate the cost of *optimal care* and the *expected liability* in mathematical terms, courts' rulings on negligence in most of the time will roughly approximate such calculation. Courts' determination of 'reasonable care' in negligence settings will vary with the cost of care and the risk of harm arising from the lack of care. The greater the harm or the more likelihood for it to occur, the higher would be the standard of 'reasonable care.' For example, in a narrow channel where the probability of an accident is higher, the standard of reasonable care would be correspondingly higher. Care in such situation includes lowering the speed (slow navigation means more time, which translates into more cost for a ship owner), and employing local pilots (thus incurring the pilotage fees). See *The Alletta*, [1965] 2 Lloyd's Rep. 479 (where the master's failure to use the service of a pilot caused an accident. The master was held negligent even though pilotage was *not* compulsory). See Posner (2003), pp. 169–170.

[18] See Calabresi and Hirschoff (1972), p. 1058.

[19] This is subject to the assumption that courts or jurors are not making error in holding a party liable despite the exercise of reasonable care by him.

of the victim to detect the injurer.[20] A not-so obvious reason is the possible *underestimation* by courts of *expected loss* from a negligent conduct due to the courts' lack of information on the magnitude and the probability of loss and on the cost of care. As a result, the courts' determination of 'due care' may be below the *optimal care* level. In this regard an insurer may naturally have superior information and may do better than courts to fix and induce *optimal care* against an *expected loss*. The detailed discussion on this point follows.

7.3 Why Liability Insurance May Lead to Better Care?

7.3.1 Insurers Possess Better Information on Optimal Care

The simple reason an insurer can motivate a potentially liable party to take better care is that insurers are likely to know better than courts about *optimal care*. This is because of the insurers' natural informational advantage on the activities they insure and their long-term relationship with their insured. Information is the key to the determination of *optimal care*. In order to find out optimal care, information is needed on three matters: the magnitude of loss, its probability, and the cost of care.[21] Insurers' knowledge on all three matters is likely to be superior to that of courts. In our previous example, we know that the *cost of care* ($100) was optimal because of the information we had on the *magnitude of loss* ($1,000) and *its probability* both before care (50 %) and after care (30 %). Misinformation on any of these three aspects may affect the determination of optimal care and lead to suboptimal care.

7.3.1.1 Information on the Magnitude

Information on the magnitude of a loss may be easy to obtain when the number of victims is small and when the loss manifests itself within a short period of time from a negligent conduct. Yet, on some occasions the number of victims may be large and the loss may occur over the span of few years. An example in the maritime context can be that of oil spills from tankers. There may be many victims from a

[20] Such reasons include also (a) the errors by courts in not holding negligent parties liable, (b) high costs of litigation dissuading victims from pursuing litigation and (c) inability of negligent parties to pay the liability judgment (or their ability to shield assets from liability). Each possibility of escape makes the expected liability less than the actual loss arising from negligence and the lower expected liability may not induce potentially liable parties to expend on optimal care. See Shavell (2004), pp. 217–218, 224–232, 275, 387–401; Shavell (1987), pp. 167–169.

[21] See the 'Hand Formula' in *supra* note 16. Posner (2003), p. 168. See also Calabresi and Hirschoff (1972), pp. 1056–1057; Shavell (2004), pp. 188–189.

large scale oil spill and they may suffer long-term health conditions and financial consequences. All the victims may not appear before the same court or/and at the same time. As a result, it may be difficult for a court to determine the actual *magnitude* of the loss and the court will likely to *underestimate* the magnitude because of the separate appearance of the claimants in different courts and/or at different times.[22]

Underestimation of the magnitude of loss means that courts will also consider the due care level below its optimal level. Some losses, which could have been prevented by optimal care but not by the court-determined due care, would continue to occur. Optimal care is a relative term and depends on *expected loss*,[23] which is determined by multiplying the magnitude of loss with its probability. Lower expected losses justify less spending on precaution, while precaution for potentially larger losses may require more expenses. A liability insurer is likely to know the actual magnitude of an insured's liability more accurately than courts. This is because the insurance company pays for all the losses from an insured peril whether the claims are brought jointly or separately, simultaneously or consecutively.[24] With more accurate information on the magnitude of liability, an insurer would be in a better position to determine the *optimal care* level.

7.3.1.2 Information on the Probability of Loss

As for the probability of a loss, it is more problematic to determine. A negligent conduct such as high speed in a narrow sea-lane or defective radar system on a ship may result in a collision in one occasion and may cause no harm in another. When a loss occurs and a plaintiff brings an action, the court may consider the probability of a loss in terms of its foreseeability. If the loss is a reasonably foreseeable

[22] Courts may sometimes overestimate the loss and set the due care level above optimal care. Setting due care level above the optimal care may lead to excessive care. Although excessive care is a social waste, courts' overestimation of possible loss will be very rare if we consider the total loss from negligence.

[23] For the convenience of analysis, we limited the expected loss from negligent conduct to the pecuniary and direct loss suffered by victims. For a thorough analysis, the expected loss needs to include non-pecuniary loss as well as the administrative costs of the liability system which would not have been incurred but for the negligent conduct. See Shavell (2004), pp. 269–275, 284–285.

[24] A negligent conduct with long term liability implication (e.g., negligent handling of toxic substances) brings uncertainty for insurers in the actual liability payment over the years. Insurers sometimes overcome such uncertainty by using 'claim-made policy' instead of 'occurrence policy'. In a 'claim-made policy', insurers are liable only for claims filed during policy year as opposed to claims made after the policy year for negligent conduct occurred in the policy year. However, in a claim-made policy the insurer lacks motivation to try to determine the total expected liability from the negligent conduct and to devise optimal precautionary steps against such liability. See Abraham (1986), pp. 49–51.

consequence of a negligent conduct,[25] liability will be imposed. Once liability is imposed, courts do not increase or reduce the liability based on the actual probability of the loss. For example, if the loss is $1,000, liability will be $1,000 regardless of whether the probability of its occurrence from a negligent conduct is 20 or 80 %.

This will not cause any distortion of incentives if negligent parties have to account for a loss *every time* there is a loss arising from their lack of care. In this way their *expected liability* will equal to the *expected loss* and they will take care when the cost of care in preventing the loss is less than their expected liability. However, for a variety of reasons negligent parties will escape liability despite the losses caused by their negligence.[26] As a result, their *expected liability* will be less than the *expected loss* caused by their negligent conducts. For instance, if their negligence gives rise to two accidents with $1,000 loss on each occasion but the parties are held liable only on one occasion, their actual liability would be $1,000 despite the actual losses from their negligence being $2,000.[27] In order to maintain proper incentives, the liability has to be $2,000 when they are sued and held liable. Yet, courts hardly impose liability more than the actual losses suffered by victims except in the cases of punitive or exemplary damages. Thus, the imposition of liability by courts does not reflect the actual probability of losses from negligence.

Theoretically, there is no reason for a liability insurer to charge a prospective insured higher premium than what would be their *expected liability*. If the insured escapes liability 50 % of the time, his insurance premium should also be 50 % less than what it would be if he were found liable in every incident of loss caused by his negligence. However, in practice premium is set before the actual losses, while liability is imposed after the losses. Consequently, a liability insurer will hardly know the exact likelihood of courts' imposition of liability on the insured at the time of fixing the premium. Also, the insurer naturally hopes that the insured is never held liable.

These two factors (insurer's uncertainty about the insured' actual liability and the insurer's desire of never having to pay for liability) combined would make insurers want their insured to take any precautionary steps which are economically

[25] When a loss is *not* reasonably foreseeable, its probability may be too low to justify the cost of care which includes, among others, the cost of information about the risk. See Posner (2003), pp. 186–187. Even if the prevention or the reduction of such loss is cost-justified, not imposing liability for such loss *may not* have any detrimental effect on incentives because a potentially liable person would likely to overlook the possibility of such unforeseeable loss. Shavell (2004), pp. 238–239.

[26] See *supra* note 20.

[27] Shavell (2004), p. 244. Although a negligent party's liability beyond the actual loss of the plaintiff in the case at issue will exceed the plaintiff's full compensation, the additional liability may be imposed through fines which would go to the state and not to the plaintiff. Shavell (2004), pp. 272–275.

efficient to reduce loss.[28] In order to decide what is economically efficient, the insurers' standard would be the *expected loss*, not simply the *expected liability* as determined by allowing for the likelihood of escape. This level of care would also exonerate the insured defendants from any liability for negligence and their liability insurers would have nothing to indemnify unless there is an error made by courts or the liability is strict.[29]

This simple analysis shows that the presence of liability insurance would produce better incentives in the minds of potentially liable people than the imposition of liability law alone. To summarize, in assessing liability courts sometimes fail to take into account the actual probability of losses from a negligent conduct and thus make the *expected liability* lower than the *expected loss*. This will in turn affect the determination of optimal care as the optimal care is a relative term and depends on the expected loss. Courts' determination of due care would be less than the optimal care and there would continue to occur some losses which the use of optimal care would have prevented.[30] On the other hand, an insurance company would encourage its insured to take optimal care because the insurer's determination of care would normally be based on the expected loss.

7.3.1.3 Information on the Cost of Care

As for the costs of care, again insurers are in a better position than courts to assess such costs. This is simply because insurers have the expertise and the technical knowledge on the subject matter they insure. They would usually have superior knowledge than courts on how much it would cost, for instance, to employ an additional crew member or to fit a ship with the latest fire-fighting equipment and technology.[31] With better knowledge on the *cost of care*, on the *magnitude* and the

[28] In the case of uncertainty about the due care level or liability, a party *may* take more care than what is efficient in light of the expected liability. However, an insured party may not do so due to the moral hazard problem. Yet, the insurer may induce the insured to take such care. See generally Shavell (2004), pp. 224–227.

[29] These two facts explain why a potentially liable person would buy liability insurance even when the party takes every possible care or when no care is economically cost-efficient. See Posner (2003), p. 171.

[30] See Shavell (2004), pp. 228–229.

[31] As most insurance disputes in fact arise between insurers (e.g., a liability insurer defending a liability claim against its insured ship owner) and/or insurance-like entities such as the International Oil Pollution Compensation (IOPC) Fund trying to recoup the compensation they paid to the victims of oil pollution, courts incidentally benefit from the expertise and experience of these insurers and insurance-like entities. It is true that the presence and assistance of these experts will reduce the courts' informational disadvantage as compared to that of insurers, thus helping the courts to determine the expected loss and the optimal care level more accurately. In addition, judges dealing with marine insurance matters are likely to be experienced in maritime matters. Still the insurer of a particular ship is likely to know better about various aspects of the insured ship than the experts (who may also be insurers but not the insurers of the same ship under the proceedings)

probability of a loss, insurers can analyse whether a precautionary measure is cost-efficient or not. A measure is efficient if and only if the cost of care is less than the expected loss.[32] Not taking care in such a case amounts to negligence.[33] Once an insurance company determines what precautions are optimal, it can then use various insurance mechanisms such as premium rate variance, policy exception, policy limit, deductible etc. to ensure that the *actual care* taken by an insured corresponds to *optimal care*.

7.3.2 Various Legal Mechanisms at the Disposal of Insurers

In addition to their natural informational advantage, insurers can also obtain any peculiar information about an insured or the insured property using some insurance law principles. The more information an insurer has about the idiosyncratic features of an insured ship and the personality of an individual insured, the better the insurer can determine the probability and the magnitude of losses and consequently the cost of optimal care. Two insurance law principles can be very effective in this regard: (1) the duty of disclosure and (2) insurance warranty.

7.3.2.1 Duty to Disclose Material Facts

An insured is required to disclose before the conclusion of an insurance contract any material facts which would influence the insurer's decision either in taking the risk or fixing the premium.[34] The consequence of the failure to do so is very severe. Non-disclosure of any such fact will cancel the insurance contract and deprive the

and the judges (who may be very knowledgeable about marine insurance matters but unlikely to be more aware about the ship's special features).

[32] To be exact, this would be the case when proper precaution will completely eliminate the loss. If it only reduces the magnitude or the probability of the loss, then cost would be optimal if it is less than the difference between the expected losses before and after care.

[33] See the 'Hand Formula' in *supra* note 16. Posner (2003), p. 168.

[34] See s 21(1) of the Canadian *Marine Insurance Act*, S.C.1993, c22 [hereinafter *CMIA*]; s. 18(1) of the British *Marine Insurance Act*, 6 Edward VII, ch. 41 [hereinafter *MIA*]. See also the House of Lords' decision on the meaning of 'material fact' and 'inducement' in *Pan Atlantic Insurance Co. Ltd. v. Pine Top Insurance Co*, [1994] 3 All E.R. 581 (H.L.), where the court applied objective test to determine 'materiality' but subjective test to decide 'inducement.' This case partially overruled the British Court of Appeal's decision in *Container Transport International Inc. v. Oceanus Mutual Underwriting Association*, [1984] 1 Ll. L.R. 476 (CA), where objective test was applied to both 'materiality' and 'inducement'. In Canada, the Ontario case of *Nuvo Electronics Inc. v. London Assurance* (2000), 49 O.R. (3d) 374, 19 C.C.L.I. (3d) 195 (S.C.J.) discussed the above HL's decision but did not follow HL's definition of 'materiality'.

insured of any insurance benefit for a subsequent loss regardless of any connection between the non-disclosure and the loss.[35]

The above duty is based on the principle that insurance is a contract of utmost good faith (*uberrimae fidei*). As a result, a prospective insurer is required not only to avoid misinforming any fact requested by the insurer, as is the case under general law of contract (i.e., law of misrepresentation), but also required to disclose *voluntarily* any relevant material circumstances the insured knows or ought to know.[36] The rationale behind this duty lies in the fact that a prospective insured will usually have better information on any special information or unusual features about the insured subject matter.[37]

The duty to disclose and the severe consequence of its breach help an insurer obtain information about the strengths and weaknesses of a particular insured property. This information in turn facilitates the determination of the *expected loss* of a particular insured. The key to the inducement of optimal care is the ability of an insurer to set the premium at a level reflecting *the expected loss* of each individual insured as closely as possible.[38] If the premium is set at a rate less than the expected loss, an insured may over-invest in insurance and under-invest in loss

[35] *Henwood v. Prudential Insurance Company of America*, [1967] S.C.R. 720 (SCC) (In this case the insured died in an automobile accident and the policy was avoided because of the insured's failure to disclose the fact that he was suffering from clinical depression).

[36] S. 20 of *CMIA* and s. 17 of *MIA*. See *Carter v. Boehm*, (1766) 3Burr 1905 at 1909, where Lord Mansfield stated, "Good faith forbids either party, by concealing what he privately knows, to draw the other party into the bargain owing to his ignorance of that fact, and believing the contrary." As for the connection between the duty of disclosure (s. 21(1) of *CMIA*, s. 18(1) of *MIA*) and the doctrine of utmost good faith (s.20 of *CMIA*, s.17 of *MIA*), see Bennett (2006), pp. 102–103, 158. See also *Coronation Insurance Co. v. Taku Air Transport Ltd.*, [1991] 3 S.C.R. 622, [1992] 1 W.W.R. 217 at 228 (SCC). The doctrine of utmost good faith is, of course, much broader and may apply to all stages of an insurance contract than the duty of disclosure which is relevant mainly at the pre-formation stage of a contract. However, since the sole statutory remedy for the breach of good faith is the avoidance of the insurance contract and since this may cause severe hardship for the insured, especially when the breach is discovered *only after* the occurrence of an insured peril, courts tend to limit the application of the doctrine only to contract pre-formation stage. Bennett (2006), pp. 175–180.

[37] Per Lord Mansfield in *Carter v. Boehm*, (1766) 3Burr 1905 at 1909, "Insurance is a contract upon speculation. The special facts, upon which the contingent chance is to be computed, lie most commonly in the knowledge of the insured only: the underwriter trusts to his representation, and proceeds upon confidence that he does not keep back any circumstance in his knowledge, to mislead the underwriter into a belief that the circumstance does not exist, and to induce him to estimate the risqué, as if it did not exist." See also Bennett (2006), pp. 100–108.

[38] For example, suppose the expected loss before any care is $2,000 and 1,000 of it cannot be eliminated by optimal care either because it is purely accidental or because taking care is not cost-efficient. If the other $1,000 can be eliminated by taking care at $500, setting premium at $2,000 for an insured who does not spend $500 on care to reflect his or her expected loss and reducing premium to $1,000 for another insured who spends $500 on care to reflect the latter's expected loss would lead the former to take care at a cost of $500.

prevention.[39] On the other hand, if premium is higher than the expected loss, the opposite may occur i.e., the prospective insured will over-invest in risk prevention and under-invest in insurance.[40] Neither is efficient. The first situation is inefficient because it will perpetuate the problem of moral hazard as it would be cheaper to insure than to take preventive measures. The second situation is undesirable because it causes a risk-averse individual to take excessive precaution i.e., more money is spent on precaution than the benefit obtained from such precaution.[41]

Lack of information or its cost is the main obstacle in setting the premium rate to mirror the expected loss/liability of each individual insured.[42] The duty to disclose material facts not only facilitates the better flow of information but also reduces the costs of information by requiring the insured parties to disclose those facts which they alone are aware of or which they could obtain at a cheaper cost than their insurers. The duty thus makes economic sense. On the other hand, when insurers could obtain some information more easily or at a lower cost, there is no justification to require the insured to obtain such information and the law rightly and roughly limits the duty of disclosure at that point.[43]

In the context of maritime law, material facts within the knowledge of an insured include the loss history of a vessel,[44] its age,[45] flag,[46] value[47] and certification.[48] Any unusual structural feature of a vessel and any criminal allegations against its owners or crew may also amount to material facts. The information on all these facts enables insurers to assess the care level of the insured ship owners or their tendency towards moral hazard as well as the seaworthiness of an insured vessel. Equipped with all the relevant facts, insurers can recommend the precautionary measures and the structural changes necessary for a particular ship. In order to

---

[39] Abraham (1986), p. 15. For instance, if insurance premium in the above note is set at $1,200 regardless of care, the first insured would not invest $500 in care and the second insured would pay $1,200 on premium instead of $1,000 and would spend nothing on care.

[40] That is, premium in the above example is set at more than $2,000.

[41] The very purpose of insurance is to reduce the problem of risk aversion so that risk-averse people do not take excessive precaution (i.e., over-invest in risk-prevention). If insurance itself is the source risk aversion, it fails in its purpose.

[42] See generally Abraham (1986), pp. 67–69.

[43] See s. 21(5) (b) and (6) (c) of the *CMIA*; *Canadian Indemnity Co. v. Canadian Johns-Mansville Co.*, [1990] 2 S.C.R. 549, 72 D.L.R. (4th) 478; *Coronation Insurance Co. v. Taku Air Transport Ltd*, [1991] 3 S.C.R. 622, [1992] 1 W.W.R. 217.

[44] *Neepawa Yacht Ltd. v. Laurentian P & C Insurance Co.* (1994), D.R.S. 95-04330 (B.C.S.C.); *Laurentian Pacific Insurance Co. v. Halama* (1991), 7 C.C.L.I. (2d) 84, 60 B.C.L.R. (2d) 190 (B.C. S.C.).

[45] *Nova Scotia Marine Insurance Co. v. Stevenson* (1894), 23 S.C.R. 137, rev'g. (1889), 25 N.S.R. 210 (C.A.).

[46] cf. *Seaman v. West* (1885), Cout. S.C. 723, Cass. S.C. 388 (S.C.C.) aff'g (1884), 17 N.S.R. 207 (C.A.).

[47] *Fudge v. Charter Marine Insurance Co* (1992), 8 C.C.L.I. (2d) 252, 97 Nfld. & P.E.I.R. 91 (Nfld. S.C.T.D.).

[48] *Atlantic Freighting Co. v. Provincial Insurance Co. Ltd.* (1956), 5 D.L.R. (2d) 164 (N.S.S.C.).

ensure that the insured ship owners carry out the recommendation, the insurers can provide financial incentives through various insurance mechanisms.

7.3.2.2 Insurance Warranties

In order to correctly assess the risks or the expected losses, an insurer may sometimes require more information than those given by the insured under the legal duty to disclose material facts. Some information, though may not be material, may help insurers know better about the expected loss or liability of a particular ship owner. For example, the information on the number of crew members or the fire-fighting system on board a ship may be useful in determining the likelihood of loss caused by these factors. Insurers can seek the information on these matters. To ensure that the information sought is disclosed truthfully, insurers may also include in the contract an insurance warranty to the effect that every information is *warranted*[49] to be true to the best of the insured's knowledge whether *material or not*.[50]

An insurance warranty can be used to ensure not only the truthfulness of an existing fact or condition but also the implementation of a future undertaking such as taking a specific precautionary measure.[51] The position of a warranty in insurance law is similar to that of a condition precedent in general contract law.[52] The breach of a warranty discharges an insurer from any prospective liability to the insured. Insurers can refuse to pay insurance coverage for a loss following a breach of warranty regardless of any causal connection between the breach and the loss.[53]

---

[49] The use of the word 'warranty' or its absence is not the decisive factor whether a requirement is warranty or not. It all depends on the intention of the parties as evidenced from the words they used in the policy. See Gilmore and Black (1975), pp. 67–68. See also s. 33 (1) of the *CMIA*.

[50] See the 'basis clause' in rule 6(2) of the Britannia P&I rules; cited in Bennett (2006), p. 181.

[51] S. 32 (1)(*a*) and (*b*) of the *CMIA*. For example, in *Shearwater Marine Ltd. v. Guardian Insurance Co of Canada* (1998), 60 B.C.L.R. (3d) 37 (C.A.), aff'g. (1997), 29 B.C.L.R. (3d) 13 (S.C.), the insurance contract contained a warranty in the following words, "Warranted . . . Vessel inspected daily basis and pumped as necessary." See *DeGroot v. J.T. O'Bryan & Co* (1979), 15 B.C.L.R. 271 at 281 (C.A.) as to the need of (promissory) warranty for certainty of future facts/obligations. See also Strathy and Moore (2003), pp. 43, 72–73.

[52] See *Elkhorn Development Ltd. v. Sovereign General Insurance Co.* (2001), 87 B.C.L.R. (3d) 290, 26 C.C.L.I. (3d) 23 (C.A.), rev'g (2000), 18 C.C.L.I. (3d) 203, (B.C.S.C.).

[53] S. 39 (1) and (2) of the *CMIA*. See also *Beacon Life & Fire Assurance Co. v. Gibb* (1862), 1 Moo. P.C.N.S. 73 (P.C.). Because of this harsh consequence, the courts in Canada are very reluctant to find the breach of warranty unless both its wording and its breach are clear and unambiguous. See Strathy and Moore (2003), pp. 132, 143–144. Courts have made distinction between 'warranty' and 'suspensive condition' or 'warranty delimiting the risk', the breach of the latter only suspends the coverage. Loss not causally connected to the breach of warranty is recoverable from the insurer. See *Century Insurance Co. of Canada v. Case Existological Laboratories Ltd*, [1983] 2 S.C.R. 47, 150 D.L.R. (3d), 2 C.C.L.I. 172, aff'g. (1982), 35 B.C.L.R. 364, 133 D.L.R. (3d) 727 (C.A.), rev'g. (1980), 116 D.L.R. (3d) 199 (B.C.S.C.); *Tulloch v. Canada* (*Department of Fisheries and Oceans*) (1988), 21 F.T.R. 72, 32 C.C.L.I. 36,

7.3.3 *Insurance Mechanisms to Create Strong Incentives*

For the purpose of maintaining incentives in the minds of the insured, it is not enough for insurers just to have better information on the expected liability and on optimal care. Insurers have to put the information in use so as to produce better care. Ultimately, the insured parties are the ones who will have to take the actual care. Thus, there need to be some ways for insurers to motivate the potentially liable insured to take optimal care. Both courts through liability law and insurers through various insurance mechanisms try to create incentives towards care. It will be shown in this section that insurers can create stronger financial incentives with various insurance mechanisms than courts can with the liability law alone.

The insurance mechanisms mainly revolve around premium rates and coverage restrictions. With the threat of premium increase and coverage reduction and/or exclusion, these mechanisms deter an insured from negligence. Although some of the mechanisms individually may appear less effective than liability law in creating incentives, the joint use of various insurance mechanisms will create stronger incentives than the use of mere liability law.

7.3.3.1 Premium Rate-Variance

As the imposition of liability may not deter potentially liable parties from negligence when they have insurance, insurers have to devise various insurance mechanisms to create incentives in the minds of their insured to exercise care.[54] Premium rate variance on the basis of an insured's actual care and loss experience[55] is the most effective and the most frequently-used insurance mechanism to induce optimal care.[56] First of all, it fills the vacuum in terms of incentives created by the

aff'd. (1989), 96 N.R. 51, 37 C.C.L.I. 229 (F.C.A.); *Landmark Corp. v. Northumberland General Insurance Co.* (1984), 8 C.C.L.I. 118 (Ont. H.C.J.); *Federal Business Development Bank v. Commonwealth Insurance Co.* (1983), 2 C.C.L.I. 200 (B.C.S.C.). However, in order to avoid the uncertainty of courts' interpretation, some insurers not only describe a term as warranty but also mention the forfeiture of the policy as the consequence of its breach. See clause 1 of British Columbia Builders' Risks Clauses (1/1/89); cited in Strathy and Moore (2003), p. 137 note 4.

[54] Shavell (2004), pp. 257, 265–266.

[55] While incentives through rate variance based on the actual care (feature rating) depend on the insurer's ability to observe the various aspects of care taken by the insured, such ability is not necessary to induce care in the case of rate variance on the basis loss history (experience rating). Experience rating, however, takes place after the occurrence of losses and may sometimes take years to reflect on the actual premium especially in maritime insurance. In other words, the shortcomings of one factor may be compensated for by the advantages of the other. See generally Abraham (1986), pp. 71–73. See also Shavell (2004), pp. 262–263 and note 7, 277–278.

[56] See generally OECD (2004).

availability of liability insurance.[57] By rewarding the use of precautionary measures through premium reduction and by penalizing negligent practices through premium increase,[58] insurers play the role of courts in creating incentives towards care.

Secondly and more importantly for our purpose, rate variance may create stronger financial incentives for an insured to take precautions for the following reasons. First, the imposition of liability has financial implications only in the case at issue, while the premium increase following a liability may have financial consequences for a period of time.[59] Second, as premium rate depends on the actual precautionary steps taken *before* the incidence of a loss/liability, the financial reward for such steps is more immediate and certain in premium rate variance than in the possibility of not being found liable. A dollar in pocket has more value than a dollar in future expectation.

In the maritime context, premium rate widely varies from ship to ship based on their physical structure (seaworthiness) and loss history. For example, in 1969 the premium for individual tanker owners varied from 3 to 150 cents per gross ton in the Norwegian Protection and Indemnity (P&I) club, SKULD.[60] It is noteworthy here that the P&I clubs are the usual providers of marine liability insurance.[61] Marine hull insurers too assess the seaworthiness of the insured ships for the purpose of premium. The assessment is done through various surveys conducted by insurers themselves as well as by classification societies.[62] Certification by a classification society and maintenance of membership in a classification society are conditions precedent to the continued insurance coverage under both hull and liability insurance policies.[63] Even in open or floating cargo insurance, there usually contains a 'classification clause',[64] requiring the insured cargo owner to ship his

[57] As Prof. Atiyah puts it, "Although the tortfeasor will not personally have to pay any damages awarded against him, his insurer will have to do so; and the insurer may visit his displeasure on the insured by *increasing his insurance premiums*." Atiyah (1975), p. 1 (emphasis added).

[58] See the example *supra* note 38.

[59] See Gold (1991), p. 429: "Although it is sometimes suggested that this fairly extensive [marine] insurance coverage might contribute to a careless operational attitude, this is an erroneous view. Insurance rates are not calculated only on actuarial projections, but are also related to the loss record of a particular owner and/or vessel. Accordingly, even if the accident is fully covered by liability insurance today, the ship owner will be paying increased premiums tomorrow."

[60] LEG/CONF.2/C.1/WP. 3 (30 Nov. 1971) in IMCO (1978), p. 242.

[61] Over 90 % of the world ocean-going tonnage is insured by the International Group of P&I clubs. Bennett (2006), p. 486; Tilley (1986), p. 261. See also the Group's website at http://www.igpandi.org/. Accessed 03 September 2013.

[62] Historically, vessels were classed with different gradations based on an assessment of various factors mainly bearing on the vessels' seaworthiness. Today classification societies do not use such gradation. A vessel today is either 'in class' or not. Yet, the initial and the periodic survey reports provide valuable information to the vessels' insurers. See Daniel (2007), p. 189.

[63] Martin (2003), pp. 48–49.

[64] Institute Classification Clause 13/4/92; see Strathy and Moore (2003), pp. 23, 150. This clause indirectly leads a ship owner to better maintenance of his ship to attract business. See also OECD (2004), pp. 65–66.

goods on the vessels of a specified class and age.[65] As for the loss history, the P&I clubs and hull insurers generally require the disclosure of claim records at least for the past 5 years.[66] Unusual loss history even before the mandatory period may be a material fact, the disclosure of which is the duty of an insured under insurance law.[67]

As evidenced from the above discussion, the mechanism of rate variance *alone* suffices to put insurers in a better position than courts to induce potentially liable ship owners to exercise due diligence. Yet, insurers would use other mechanisms besides rate variance to ensure proper care. Again, some of these mechanisms may not on their separate application induce better care than liability law. However, their use with rate variance would provide additional incentives for an insured to use care. Following are some of the other mechanisms:

7.3.3.2 Deductibles

The ideal situation of optimal care is where the insured acts as a 'prudent uninsured,' a term used in most of the P&I club rules.[68] A prudent uninsured person would take reasonable care in its every dimension because he has to pay from his own pocket for the liability of *any loss* arising from his activities regardless of the care level.[69] This situation can only exist if the liability is strict and if there is no liability insurance. However, the imposition of strict liability and the absence of liability insurance have their own problems correspondingly in reducing incentives for victims to take care[70] and in discouraging people from investing in socially desirable activities.[71]

With the availability of liability insurance in the context of negligence-based liability, the best an insurer can do to make an insured to act like a 'prudent uninsured' is to reduce the coverage by various insurance mechanisms or to exclude it altogether in some cases. Deductible is one of these mechanisms. Others include policy ceiling, franchise clause, uninsured warranty and policy exceptions for certain risks where moral hazard is exceptionally serious. If an insurance policy contains a deductible clause, the insured remains uninsured for the amount of deductible. In the maritime context, both the P&I insurance and hull insurance

[65] These clauses in insurance policies show the faith and reliance marine insurers have on the risk assessment by classification societies.

[66] See *Laurentian Pacific Insurance Co. v. Halama* (1991), 7 C.C.L.I. (2d) 84, 60 B.C.L.R. (2d) 190 (S.C.); see also Hazelwood (2000), pp. 115–116.

[67] See *New Hampshire Insurance Co v Oil Refineries Ltd*, [2002] 2 Lloyd's Rep 462; [2003] Lloyd's Rep IR 386 (C.A.).

[68] See for example Rule 23B(i) of the Steamship Mutual; cited in Martin (2003), p. 50.

[69] See Shavell (2004), pp. 98–99 and 189.

[70] This would only occur in bilateral care situations i.e., where both the injurer and the victim can take care at the same time. See Shavell (2004), pp. 184–188.

[71] See Shavell (2004), pp. 259–261.

usually include deductible clauses and the amount of deductibles may vary from one loss or liability to another even within the same policy.[72]

As the insured individuals have to personally bear any liability up to the amount of deductible, they would have financial incentives to take care to prevent a liability-causing incident. However, the incentive effect of deductible would be diluted when liability is likely to exceed the amount of deductible by a large margin. A large loss/liability justifies more care to prevent or reduce the loss/liability. The cost of such care is likely to exceed an insured's *expected deductible*. Other things being equal, the insured parties as rational individuals would not spend more than their expected deductible. For example, with a 10 % probability of $1,000 liability, the expected liability is $100. If the deductible is $500, the expected deductible or liability is only $50. A rational insured would not spend on care more than $50, while spending any amount up to $100 on care would be economically efficient. However, if the cost of optimal care is below the expected deductible i.e., $50 in our example, deductible would lead to optimal care.[73]

As insured parties bear the financial burden of deductible only when they incur liability and only for a *fraction* of liability, the financial burden of and the incentive from deductible logically cannot be more than those of liability. Even though deductible *alone* may not induce more care than liability law does, in combination with rate variance and other insurance mechanisms deductible would create more incentives than that of liability law. In other words, the shortcoming of deductibles in terms of incentives may be compensated for by other insurance mechanisms. Liability ceiling is certainly one of those mechanisms.

7.3.3.3 Liability Ceiling or Upward Limit

While deductible is a very useful tool in inducing care when the magnitude of liability is low, liability ceiling is a more effective means to achieve optimal care when the amount of liability is likely to be very high. As insured individuals will personally bear the financial burden of liability above the ceiling, higher liability will motivate the insured to take optimal care in order to prevent or reduce the liability. In addition to the creation of incentives, liability ceiling may also be necessary for insurers to limit their maximum exposure and to buy reinsurance against such exposure.

---

[72] See International Hull Clauses (01/11/03), clause 15; Institute Time Clauses Hulls (1/10/83 and 1/11/95), cl 12; Hazelwood (2000), pp. 259–260. Statistics on 119 major cargo claims paid by Gard, a Norwegian P&I club, show that there was about US$3.4 million in deductibles out of total US$60 million payout. The study period was 5 years from 1996 to 2000. See Gard (2005), p. 4.

[73] However, if the cost of optimal care is below the expected deductible i.e., $50 in our example, deductible would lead to optimal care. In other words, if $50 is what it takes to completely eliminate the risk or reduce it to an economically efficient level, then deductible will induce optimal care. See generally Shavell (1987), pp. 194–196.

In the context of maritime law, liability ceiling was imposed in the very first type of liability insurance i.e., collision liability insurance. Coverage for collision liability was and is still largely provided by hull insurers under a separate clause in the hull insurance policy, known as 'running-down clause.' Before the introduction of this clause, the provision of insurance was confined to property insurance in the form of coverage for accidental losses in ships and cargoes.[74]

As this was the first time that insurance was offered for liability, the insurers were understandably concerned with the effect of such insurance on an insured's incentives to care. In fact, this concern led the Lloyd's underwriters to petition, though unsuccessfully, to the British Board of Trade in 1854 to ban collision liability insurance.[75] Eventually, however, their concern translated into the imposition of a maximum limit on the coverage to three-fourths of the total liability.[76] This clause survives even today among modern hull clauses.[77] An interesting contrast here, however, is the liability insurance provided by the International Group of P&I clubs. The Group's coverage is virtually unlimited. Under an 'overspill' pooling agreement among the clubs and through the four layers of reinsurance, the Group currently provides coverage up to US$7.5 billion per liability incident.[78]

Although a policy limit would induce care where liability is likely to exceed the ceiling, the insured may sometimes decide not to take care because the cost of care is more than their expected exposure.[79] The incentive effect of insurance ceiling suffers from the same shortcoming as that of deductible. If there is 10 % chance of $100,000 liability, the expected liability would be $10,000. If the insurance ceiling is $70,000, the insured will have to personally pay $30,000 out of $100,000 liability. Due to 10 % probability, the expected personal exposure is only $3,000. In order to prevent the loss, the insured may be willing to spend only up to $3,000, while optimal care may require spending any amount up to $10,000.

---

[74] *Per* Justice Cory in *Coronation Insurance Co. v. Taku Air Transport Ltd*, [1991] 3 S.C.R. 622, [1992] 1 W.W.R. 217 at 229, "When Lord Mansfield set the principle governing insurance contracts the world was a little different. It was a simpler if not, in some respects, a gentler place. The business of insurance was very different. *The policies of insurance were issued most frequently to cover a vessel or its cargo*. The contract was issued for the benefit of the insured." [Emphasis added].

[75] Reynardson (1969), p. 467.

[76] This is actually three fourth of the proportionate liability of the insured value of the vessel. So, if the actual collision liability is more than the insured value of the vessel, the three-fourths of the actual liability would also exceed the coverage. However, insured can buy supplementary cover for this excess liability under Institute Time Clauses-Hulls Excess Liabilities (1/11/95). See Bennett (2006), pp. 400–401 note 48.

[77] See clause 6.1 of the International Hull Clauses (01/11/03).

[78] See the Pooling Agreement of International Group of P&I Clubs; available at http://www.igpandi.org/Group+Agreements/The+Pooling+Agreement. Accessed 01 September 2013.

[79] The insured may spend more on care than what would be his expected personal liability due to deductible and/or liability ceiling. This would not amount to excessive care as long as the cost of care does not exceed the total expected loss/liability.

For similar reasons as those mentioned in the case of deductible, liability ceiling *alone* cannot logically create stronger incentives than does the liability law. However, if the cost of optimal care is less than the insured's *expected personal exposure* from liability ceiling alone or from the total amount of liability ceiling and deductible, the insured would take such care. Another interesting point here is that the insured are certainly risk-averse individuals.[80] Otherwise, they would not have bought insurance in the first place. Risk-averse people are willing to spend more than their *expected* personal exposure in order to reduce their exposure. In addition, the presence of liability ceiling does not mean that insurers are going to forgo their most effective tool i.e., the rate variance.

7.3.3.4 Franchise Clause

Some marine insurance policies may contain a franchise clause instead of a deductible clause. Like the case with deductibles, an insured remains its own insurer for any liability below the limit in a franchise clause. The insured thus will have adequate incentives to prevent a liability falling below the amount in the franchise clause. As the effect of franchise clause in this regard is similar to that of deductible, earlier comments on comparison between deductible and liability law equally apply here. However, a franchise clause differs from a deductible clause in that when liability exceeds the amount in a franchise clause, insurers pay the total amount of loss/liability.[81] Consequently, if the potential liability is likely to exceed the franchise limit, the insured would have no incentives to prevent or reduce such liability because the insurer would pay not only the amount in excess of the franchise limit but also the amount falling below that limit.

The presence of a franchise clause may even encourage an insured to intentionally make a loss worse so that the liability for the loss exceeds the franchise limit and the entire burden shifts to the insurer. Although this is a serious shortcoming of franchise clause in terms of incentives to care, a franchise clause is not designed to maintain incentives. Rather its main function is to save administrative costs by not entertaining smaller claims falling below certain threshold.[82] Besides, insurers would have other tools including rate variance and policy limit to maintain incentives. In modern marine insurance, franchise clauses generally appear in freight insurance and the amount is usually a percentage of the total freight insured.[83]

---

[80] For the definition and effect of 'risk-aversion' see *infra* Sect. 7.3.4.1.

[81] See Gilmore and Black (1975), p. 82.

[82] See Bennett (2006), pp. 744–745. Although deductibles also have similar advantage in reducing the administrative cost for small claims, it cannot be said that the saving of administrative cost is its main function. If this were so, there would be no justification to deny paying the deductibles when the loss or liability exceeds the amount of deductible.

[83] See Institute Time Clauses Freight (1/8/89 and 1/11/95), cl 12; Institute Voyage Clauses Freight (1/8/89 and 1/11/95), cl 10. See also Strathy and Moore (2003), p. 172.

Modern franchise clauses are similar to those of 'particular average' warranty (i.e., exclusion of partial loss) in old insurance policies.[84]

7.3.3.5 Uninsured Warranty

While the above insurance mechanisms leave an insured uncovered for a certain amount either below a threshold or above a ceiling, they do not prevent the insured individuals from buying coverage elsewhere for the uncovered portion.[85] Insured parties have a choice either to obtain market insurance or to remain self-insured for the uncovered amount. An opportunity to buy coverage for the uncovered portion from other insurers distorts the incentive effect of the above mechanisms.[86] If the distortion is serious, insurers may include an uninsured warranty in the policy. Under an uninsured warranty, an insured is prohibited from buying coverage for certain risk or above certain limit.[87] An insurance warranty has the effect of condition precedent in contract law and any breach of a warranty makes the policy voidable.[88] Any loss or liability following the breach of a warranty will not be indemnified by insurers regardless of any causal connection between the breach and the loss or liability.

There are instances in marine insurance where a liability insurer not only left certain portion of the risk uncovered but required the insured to retain that portion of the risk uninsured.[89] Although uninsured warranty is rare in modern policies,[90] there are restrictions on the maximum amount of coverage an insured can buy from

[84] The word 'warranty' here means 'exclusion'. For examples and discussion on particular average warranty, see Gilmore and Black (1975), pp. 79–82.

[85] For example, see clause 6.1 of the International Hull Clauses (01/11/03), providing three-fourths coverage for collision liability without any prohibition on coverage for the remaining one-fourth. In fact, optional clause 38 of the International Hull Clauses or P&I clubs offer coverage for this one-fourth. See Bennett (2006), pp. 398–399.

[86] Buying coverage from a second insurer only for the uncovered portion may not be available at all. Even if it is available, the premium may be very high compared to the coverage because the premium would include the administrative costs and profits for the second insurer.

[87] See generally Bennett (2006), pp. 545–548.

[88] See s. 39 (2) of the *CMIA*.

[89] See *Muirhead v. Forth & North Sea Steamboat Mutual Insurance Association*, [1894] AC 72; cited Bennett (2006), pp. 545. A similar purpose could be achieved also through "no other insurance" warranty; see *Butler v. Merchants Marine Insurance Co.* (1885), Cass. Dig. 390 (SCC).

[90] Even when the hull insurance provides for a three-fourth collision liability, the insurer may cover the remaining one-fourths of such liability for additional premium. For any shortfall either in the form of remaining one-fourth or excess liability, coverage is invariably provided by the P&I clubs. Bennett (2006), pp. 400–401. As for other kinds of liability insurance, coverage is practically unlimited.

market for certain disbursements, managers' commissions, and particular types of freights.[91]

In terms of incentives, uninsured warranty has the similar effect as that of deductible, franchise limit, and liability ceiling. If the *expected personal exposure* to financial burden from uninsured warranty is more than the cost of optimal care, an insured would have adequate incentives to take the optimal care. If the expected personal exposure is less than the cost of care, the insured may fail to take care. The incentive effect from uninsured warranty is not additional but restorative because an uninsured warranty does not directly reduce an insured's insurance coverage. It only ensures that coverage restrictions through deductible or policy limit are maintained so as to retain their incentive effects.

7.3.3.6 Policy Exceptions/Exclusions

Policy exceptions also restrict insurance coverage and make policy holders practically 'prudent uninsured' in situations falling under the exceptions. In terms of incentive effect, policy exceptions are similar to the situation of liability without liability insurance. In both cases potentially liable parties would bear the full brunt of liability. As insured individuals will have already paid the premium, the financial consequence of a policy exception may actually be more severe. Policy exception will thus lead to better care in preventing the conducts that trigger the exceptions.

The most important exception in terms of incentives is that insurers would not pay for any loss or liability 'attributable to the wilful misconduct of the insured'.[92] Although this exception is well established in common law[93] and is now enshrined in the marine insurance Acts,[94] it still appears in the P&I club rules and in cargo insurance policies.[95] The simple rationale behind this exception in property insurance (i.e., hull and cargo) is that the insured should not be allowed to profit from their own wrongdoing.[96] The most severe form of wilful misconduct in the marine

[91] See Institute Time Clauses Hulls (1/10/83), cl 21.2; (1/11/95), cl 22.2; International Hull Clauses (01/11/03), cl 24.2; Institute Voyage Clauses Hull (1/11/95), cl. 20.2; cited in Rose (2004), p. 598 note 139.

[92] S. 53(2) of the *CMIA*; s. 55 (2) of the *MIA*.

[93] *Lewis v. Great Western Railway Co* (1877), 37 LT 774, 3 QB 195; *Graham v. Belfast & Northern Counties Railway Co*, [1901] 2 IR 13; *Forder v. Great Western Railway Co* [1905] 2 KB 532.

[94] S. 53(2) of the *CMIA*; s. 55 (2) of the *MIA*.

[95] For example, see Institute Cargo Clauses (A), (B), (C), cl 4.1; Institute War Clauses (Cargo), Strikes Clauses (Cargo), cl 3.1.

[96] Wilful misconduct of the master and crew to the prejudice of the ship owner which amounts to 'barratry' may be an insured peril and thus does not deprive the insured of the protection of coverage. See *O'Connor v. Merchants Marine Insurance Co.* (1889), 16 S.C.R. 331; *Spinney v. Ocean Mutual Marine Insurance Co*. (1890), 17 S.C.R. 326.

insurance context is scuttling.[97] Though it was a common insurance fraud in the past, today it may still occur especially when a low freight market brings down the price of a ship much below its insured value in a valued policy.[98] A situation of scuttling may also give rise to cargo liability and thus may involve the P&I clubs for liability insurance.

In contrast with wilful misconduct, mere negligence will not deprive an insured of the benefit of either hull or liability insurance.[99] Provision of insurance in the cases of negligence may seem to condone and encourage negligent behaviors and may make liability insurance look inferior to liability law in terms of incentives. This is, however, not the case in reality. Although it is true that liability insurance provides protection against liability for negligence and may on the face reduce the incentive effect of liability law, the various insurance and legal mechanisms discussed above will actually lead to better incentives in the minds of insured parties to use care.

Here the provision of liability insurance against negligence can be compared to the vicarious liability of employers for the negligence of their employees. In a vicarious liability situation, even though the negligent employees do not have to directly pay for their negligence, this may not in fact reduce the incentive effects of liability because the employers can use the threat of firing or impose other less drastic monetary disciplines on the employees.[100] In the same way, insurers can prevent many negligent conducts of their insured by using financial disincentives through various insurance mechanisms even though the insurers pay for the liability arising from negligence. Also, when an employer has superior knowledge about the potential risks and the precautionary measures to that of his employees, vicarious liability may in fact lead to better care than if the employees directly bear the

[97] See *P. Samuel & Co. v. Dumas* (1924), 18 Ll. L. Rep. 211, [1924] All E.R. 66 (H.L.).

[98] For a recent example, see *Boyda v. Saxbee Insurance Agencies (1975) Ltd.* (1984), 4 C.C.L.I. 26 (B.C.C.A.). Hull insurances are almost invariably valued policies. Under a valued policy, the value of subject-matter is conclusive evidence for the purpose of valuation between the insured and the insurer unless there is any fraud: s. 30 (4) of the *CMIA*.

[99] Some insurance policies not only provide coverage for the negligence of employee in the so-called 'Inchmaree clause,' but also cover for the loss arising from the negligence of anyone including the ship owners and charterers. For negligence of employee, see s. 53 (1) of the *CMIA* and *Century Insurance Co. of Canada v. Case Existological Laboratories Ltd*, [1983] 2 S.C.R. 47, 2 C.C.L.I. 172 and *C.C.R. Fishing Ltd. v. British Reserve Insurance Co.*, [1990] 1 S.C.R. 814, 43 C.C.L.I. 1. For negligence of the insured, see *Russell v. Canadian General Insurance Co.* (1999), 11 C.C.L.I. (3d) 284 (Ont. Gen. Div.) and *Atwood v. Canada* (1985), 10 C.C.L.I. 62 (F.C.T. D.). In *Williams v. Canada* (1984), 7 C.C.L.I. 198 (F.C.T.D.) the court held at 211, "In the absence of express stipulations to the contrary, *negligence on the part of the assured or of a person for whom he is or may be responsible* does not exempt the insurer from liability though the loss is caused thereby, for one of the main objects of insurance is to protect the assured against the consequences of negligence." (Emphasis added.)

[100] Although an employer may legally sue the negligent employee to recover the money paid to a third party, companies rarely pursue this course of action. See James (1948), p. 557.

liability.[101] Similarly, superior knowledge of insurers brings the actual care closer to optimal care than would be the case in the absence of liability insurance.

Most of the other policy exceptions/exclusions are not really intended to induce care but to separate ordinary losses from fortuitous ones. For example, the losses or liability arising from ordinary wear and tear, from ordinary breakage and leakage, and from the inherent vice or nature of the subject matter are not usually covered.[102] Some other exceptions may have as their reason the highly unpredictable or disproportionate risk such as the exclusion of coverage for war and strikes. For all these exceptions alternative coverage may be available.[103] As these exceptions have no role to play in creating incentives, their provision by alternative insurance is not socially undesirable and they are not relevant to our discussion. However, when some conducts may lead to suboptimal care in the future such as the change of a vessel's ownership/management, flag, or classification society, an insurer may designate them as exclusionary conducts for the losses following these conducts in order to discourage such conducts.[104]

7.3.3.7 Duty to Mitigate Loss (to Sue and Labor)

All the above insurance mechanisms mainly concern the maintenance of incentives to take care at the pre-accident stage. Once an insured peril is either imminent or has already occurred, the insured may still take some care to avert or minimize the losses arising from the insured peril. In order to ensure that an insured takes such care, marine insurance policies generally contain a 'sue and labor' clause,[105] which

[101] See Sykes (1984), pp. 1231–1281. See also Posner (2003), pp. 188–189; Shavell (2004), pp. 233–236.

[102] See Institute Cargo Clauses (A), (B), (C), cl 4.2; War Clauses (Cargo) and Strikes Clauses (Cargo), cl 3.2; see also s. 53 (2)(b) of the *CMIA*; s. 55 (2) (c) of *MIA*.

[103] See War Clauses (Cargo) and Strikes Clauses (Cargo).

[104] For example, the Canadian Board of Marine Underwriters (CBMU) Great Lakes Hull Clauses (Sept. 1, 1971) provide at lines 229–232, "In the event of any change, voluntary or otherwise, in the ownership or flag of the Vessel, or if the Vessel be placed under new management, or be chartered on a bareboat basis or requisitioned on that basis, or if the Classification Society of the Vessel or her class therein be changed, cancelled or withdrawn, then, unless the Underwriters agree thereto in writing, this Policy shall automatically terminate…". This document could be found at http://www.brokmar.com/wp-content/uploads/greatlakes.pdf. Accessed 03 September 2013. Canadian Hulls (Pacific) Clauses (Sept. 1/91) at lines 239–251 and Institute Time Clauses Hulls (1/01/83) in cl 4; (1/11/95) in cl 5; International Hull Clauses (1/11/03) in cl 14 contain similar provisions.

[105] The words "sue and labor" were first used in Lloyd's S.G. policy, which contained a clause requiring the insured "*to sue, labour*, and travel for, in and about the defence, safeguards, and recovery of the said goods and merchandises, and ship, &c, or any part thereof, without prejudice to this insurance…." (Emphasis added). Although the use of Lloyd's S.G. policy is now very rare, a clause to the same effect continues to exist in all the modern hull and cargo policies as well as in liability insurance policies. See the Great Lakes Hull Clauses (Sept. 1, 1971), the Canadian Hulls (Pacific) Clauses (Sept. 1/91), Institute Time Clauses Hulls (1/10/83), cl 13.1; (1/11/95), cl 11.1;

imposes a duty on the insured to take reasonable steps to mitigate a loss or liability. Failure to comply with this obligation will deprive the insured of indemnity for any loss or liability attributable to such failure.[106] Marine insurance statutes also impose this obligation.[107]

As this is both an insurance and a legal mechanism against moral hazard, there is no comparison between this mechanism and liability law; duty to mitigate is part of liability law. An insured is entitled to reimbursement of the expenses incurred in taking such steps.[108] The entitlement is not affected by the failure of the steps taken to achieve the intended result as long as they are reasonable under the circumstances.

7.3.4 Negligence in the Presence of Insurance May Be More Costly

While the financial burden of liability arises only after a loss, the financial burden in the case of liability insurance may arise both before and after the loss. Insured parties will have already paid their premium based on their expected liability. Yet, if they incur liability due to a coverage-excluding conduct, they pay the premium and bear the liability at the same time. In other words, in such situation they bear the financial burden twice. Even when insurance contracts contain no coverage exclusion or reduction, the insured's expected financial burden (i.e. premium) is likely to be more than their expected liability *in the absence of proper care*. This point will be further clarified in Sect. 7.3.4.2.

7.3.4.1 Premium Should Equal the Expected Liability

Theoretically, premium should equal the *expected liability* of the insured, presuming there is no policy exclusions and under-insurance (i.e., through deductible and/or liability ceiling). Yet, in practice insurance premium will always be a little more than the expected liability, *given* the liability of the insured remains unchanged after they subscribe to insurance. This is because insurance premium

International Hull Clauses (01/11/03), cl 9.1; Institute Cargo Clauses (A), (B), and (C) (1/1/82), cl 16. See also Strathy and Moore (2003), pp. 183–184.

[106] *Fudge v. Charter Marine Insurance Co*., (1992), 97 Nfld. & P.E.I.R. 91, 8 C.C.L.I. (2d) 252 (Nfld. S.C.); *Strive Shipping Corp v. Hellenic Mutual War Risks Association* (*Bermuda*) *Ltd* (*The Grecia Express*), [2002] EWHC 203 (Comm), [2002] 2 All ER (Comm) 213 (Q.B.). See also Strathy and Moore (2003), p. 181; Bennett (2006), pp. 750–753.

[107] Ss. 79 and 80 of the *CMIA*; s. 78 of the *MIA*.

[108] The 'sue and labour' clauses in Lloyd's S.G. policy and modern hull and cargo policies all contain express undertakings by the insurer to pay for such expenses. The provisions of s. 79(1) of the *CMIA* and s. 7(1) of the *MIA* reflect this marine insurance practice.

includes not only the expected liability but also the administrative cost and profit elements of an insurer.[109] At this point, it may not be out of place to ask why potentially liable parties would buy insurance when it may eventually cost them more. The answer lies in the concept of *risk aversion*.

Risk aversion is the tendency of a person to fear the loss of a higher amount with lower probability more than the loss of a lower amount either with higher probability or with certainty even though the expected loss may be the same in both cases. For example, the loss of $100,000 with 1 % probability and another loss of $10,000 with 10 % probability or a certain loss of $1,000 have the same expected value i.e., $1,000.[110] Yet, in the first instance risk-averse people may be willing to pay their insurers more than $1,000 (i.e., the expected loss/liability) in insurance premium in order to transfer the risk to the insurers[111] even though the payment of premium is certain and the insured's chance of being liable is only 1 %.

7.3.4.2 Premium May Differ from the Expected Liability

The liability of the insured, however, may increase or decrease after they purchase insurance. It may increase if the problem of moral hazard is serious. It may also decrease if insurers can induce their insured to take better care than what the insured would take in the absence of insurance. As we have been maintaining in this chapter that insurers generally can and do induce better care in a potentially liable insured person than what courts alone could do, this brings the possibility that insurance premium can be less than the *pre-insurance expected liability*. This will occur if the difference between the *pre-insurance* expected liability and the *post-insurance* expected liability due to better care is more than the insurer's administrative cost and profit combined. We have seen that the possibility of better incentives and further reduction of loss exists in the presence of insurance because of the insurers' better information on optimal care and also because of their ability to offer stronger financial incentives through insurance mechanisms. An example may be in order here.

If statistics compiled by an insurer from the loss history of many insured parties prove that most of the collision incidents occur due to the absence of proper lookout, the insurer may deduce from the statistics that constantly keeping a crew member on the bridge of the insured ships will substantially cut down the number of collisions.[112] Even though employing an additional crew member for the proper lookout would be efficient from the perspective of long term loss/liability reduction,

[109] See Shavell (1987), p. 198.

[110] See Pauly (1968), p. 532; Shavell (1987), pp. 186–187; Shavell (2004), p. 258.

[111] The amount an insured pays the insurer above the expected loss/liability is known as 'risk premium'. Stephens (1995), p. 26.

[112] This example is a modified version of the finding of the Norwegian P&I Club, Gard AS. See Gard (2005), pp. 18–19.

the insured individuals may not see its net benefit due to their lack of information about the probability and magnitude of loss arising from this factor alone. On the other hand, the insurer's research may show that the employment of an additional crew member would reduce the current probability of average collision liability of $100,000, for instance, from 10 to 5 % (i.e., from expected liability of $10,000–5,000). If the wage of the additional crew member is, say, $3,000, i.e., less than the difference in liability before and after employing the crew,[113] the employment would bring a net saving of $2,000.

In other words, in the absence of insurance, due to lack of information the insured parties took less care and their expected liability was $10,000. In the presence of insurance, the expected liability is now $5,000. If the insurer's administrative cost and profit equal $1,000, the insurance premium would be now $6,000, much less than the pre-insurance expected liability of $10,000. An insured's net saving would be $1,000 (i.e., $10,000 pre-insurance expected liability minus the insurance premium of $6,000 and the $3,000 wage of the additional crew member). This example shows that despite the additional administrative costs of liability insurance, the existence of liability insurance not only may lead to better care and precaution but may also bring net savings for the insured.

The above example can also be used to show that being *negligent in the presence of insurance is more costly* than in its absence. The insured parties' expected liability before insurance was $10,000, but their insurance premium would be $11,000 ($10,000 in expected liability plus $1,000 for insurer's cost and profit) if they do not employ the additional crew member.[114] As the wage of additional crew member (i.e., the cost of care) is less than the reduction in liability, not employing the additional crew member would amount to negligence.[115] Such negligence would be more costly in the presence of insurance ($11,000 insurance premium) than in its absence (i.e., only $10,000 liability). As the hiring of an additional crew member at a cost of $3,000 would reduce the premium from $11,000 to 6,000, an insured, being a rational individual, would employ the crew member. Whether an insured in fact employed the required number of crew or not, the insurer can easily verify.

Among the discussed insurance mechanisms, rate variance (from $11,000 insurance premium to $6,000) would be the most effective mechanism here to motivate the insured to adequately man the ship. For additional guarantee, insurers may make it an express *warranty* that certain number of crew members must always be present on the ship or on its bridge.[116] With regard to the remaining 5 % of collision

[113] The difference is $5,000. Before the appointment of the additional crew member, the expected liability was $10,000 (10 % × $100,000) and it would be $5,000 (5 % × $10,000) after the appointment.

[114] See generally Shavell (2004), pp. 264–265.

[115] See the 'Hand Formula' in *supra* note 16. Posner (2003), p. 168.

[116] See for example, *De Hahn v. Hartley* (1786), 99 E.R. 1130 (K.B.), where the insurer required the presence of 50 crew members. The ship had only 46 at the beginning of the voyage. Though the ship had 52 crews at the time of the insured peril, the insurance was held voidable.

probability in the above example, certain precaution may reduce the probability further.[117] If insurers cannot observe those aspects of precaution, they may incorporate in the insurance policy certain deductible and policy limit. As we have seen earlier, deductibles and policy limits may induce an insured to spend more on care than merely the expected value of the deductible and liability ceiling. The purchase of insurance shows that insured parties are risk-averse individuals. They would rather spend more on care than to bear the burden of deductible and liability exceeding the policy limit even though the expected value of the burden is less than the cost of care.[118]

7.3.5 Additional Reasons Insurance May Lead to Better Care

7.3.5.1 Insurance Facilitates Research and Innovation

The above example also shows that insurers can classify the causes of various losses and then guide their insured to adopt the appropriate precautionary steps to control the future losses. Maybe there are yet-to-be discovered but more cost-efficient techniques to reduce losses. The discovery of those techniques requires investment in research and development. Insurers are in a better position than insured individuals to undertake this task not only because of the insurers' ability to spread the cost of research over all the insured parties in a pool but also because of the insurers' superior knowledge on the causes of loss.[119] There is no comparison here between insurers and courts. Courts' suggestions in their decisions on the various aspects of care would be limited to only the known techniques. In fact, the courts' knowledge on some known techniques may be even inferior to that of the liable parties when the techniques are of complicated nature. Although courts may seek expert testimony, the knowledge of an expert is also confined to the existing techniques.[120]

A possible disincentive to an insurer's investment in research and innovation is the fact that the competitors of an insurance company may benefit from its research and innovation without incurring the corresponding cost.[121] This may be overcome by cooperation and joint undertaking of research initiatives by many insurers. An ideal example in this regard is the cooperation of the International Group of P&I clubs. The Group consists of 13 large P&I clubs and covers over 90 % of the

[117] The probability of collision incidents may never be zero either because no optimal care can eliminate all the accidents or because there is always some unavoidable accidents due to the elements of the sea. See generally Calabresi (1970), pp. 17–18.

[118] Spending more than the expected deductible or the amount above the policy limit will not be undesirable as long as the cost of care is less than the total expected loss or liability.

[119] See Abraham (1986), pp. 15–16; Kehne (1986), p. 407.

[120] See *supra* note 31.

[121] See Abraham (1986), pp. 78–79; Shavell (2004), pp. 36–37.

world's ocean-going tonnage.[122] The members of the Group benefit from the shared experience and exchange of information on the various common issues of concern.

7.3.5.2 Insurance Improves the Knowledge of an Insured

This is an obvious point. There is no use of insurers obtaining information on optimal care and on better techniques to prevent or minimize loss if the insured individuals are not aware of those techniques. An insurer needs to convey the acquired information to the insured parties so that they can employ the information and techniques in the insured activities. As we have seen throughout the chapter, better information combined with stronger financial incentives through various insurance mechanisms leads to improved care and safety in the presence of liability insurance. This can only occur in practice if the insured individuals know what amounts to optimal care and what financial benefits they would receive from their insurers by exercising optimal care.[123]

7.3.5.3 Insurer's Failure to Create Incentives Is Suicidal

While the failure of a court to accurately determine optimal care in a liability situation has no effect on the continued existence of the court, such failure by an insurer, if regular, may threaten the very survival of the insurer's business in a competitive market.[124] As we have seen, the calculation of correct premium rate depends on the proper determination of the expected loss/liability of an insured. Insurers constantly need to assess each insured's expected liability and then set and adjust the premium accordingly to reflect the expected liability. If the increase in premium rate following a loss caused by negligence is more than the cost of care, the insured would take care and prevent similar losses from occurring in the future.

On the other hand, if an insurer does not adjust the premium and roughly charge the same premium to all the insured parties, the insurer will attract high-risk individuals to the insurance pool and will cause low-risk individuals to leave the pool. Left with only high risk individuals, the insurer would either have to charge very high premium or incur substantial loss. Both options will lead to the loss of business and the possible bankruptcy of the insurer. The reason for this consequence in the case of the second option is obvious. The reason in the first option is that each relatively low-risk insured will have to pay more than his expected liability to cover for the relatively high-risk members in the pool. The low risk individuals would be better off either to self-insure or to seek coverage elsewhere, which they will do in a competitive market. They will switch to other insurers who

[122] Tilley (1986), p. 261.

[123] See Abraham (1986), pp. 73–74.

[124] Kehne (1986), p. 412. See also Calabresi (1970), pp. 61–62.

can better assess their expected losses/liability and charge them lower premium accordingly.

This phenomenon is known as 'adverse selection' in insurance literature[125] and was the cause for the demise of the nineteenth century hull insurance clubs.[126] To avoid this phenomenon and to induce each individual insured to take care, insurers have to separate the insured individuals according to their possible liability/loss and charge premium accordingly. Insurers today separate their insured individuals and the risks they bring into groups and classes.[127] Insurers also differentiate the premium rates for individuals under the same group/class.

7.3.5.4 Insurance Improves Deterrence

In the absence of insurance, a liable person may not have sufficient assets to pay for liability and consequently the deterrent effect of liability is either absent or limited in the mind of such a person.[128] Liability insurance, especially when it is *compulsory* as is the case in automobile insurance and in many areas of maritime liability,[129] can ensure that liable parties pay for their negligence and thus increase the likelihood of liability. With the increased likelihood of liability, the insurance premium will be higher. Higher premium will increase the deterrent effect of liability.[130]

The inability of a liable party to pay for the liability (the problem of the judgement-proof) arises not only from the actual lack of assets but also from the artificial reduction of assets through 'corporate veil' by forming corporate subsidiaries. This happens quite often in the context of maritime liability law as shipping corporations form a separate company for each ship in their fleets.[131] Compulsory liability insurance can resolve this problem to a great extent.

---

[125] See Abraham (1986), pp. 67–68.

[126] With the removal of monopoly on marine insurance in 1824 in the UK, the marine insurance market became more competitive. The well-built ships could get insurance at a cheaper premium from the market insurers than from their mutual hull insurance clubs. As a result, hull insurance clubs were left with 'rust buckets' and were eventually dissolved. Bennett (2006), p. 11 note 42.

[127] While in marine insurance determination of the class of a ship or its assignment to a particular risk group mainly depends on its physical strength, in automobile insurance risk classification may be based on the age and gender of an insured, among other factors.

[128] See Shavell (1987), pp. 167–169; Shavell (2004), pp. 230–236.

[129] Such as liability laws for oil pollution from tankers and bunkers, HNS pollution and passengers' claims all have compulsory insurance provisions. See Chap. 6 for discussion on compulsory insurance.

[130] See Fleming (1967), p. 825. See also Brown (1978–1979), p. 118.

[131] Tan (2006), p. 34.

7.4 Empirical Evidence

7.4.1 Marine Insurance

Since the maritime liability insurance is as old as the maritime liability law itself, it is hard to find statistics to show the difference in the loss rate with and without the presence of liability insurance in order to prove the positive impact of insurance on incentives. However, there are statistics in many areas of liability, where the claims for losses are on the decline due to the proper identification by insurers of the causes of loss or injury. For example, the statistics for 1993–2003 on the liability for physical injury to crew members in the vessels insured by a Norwegian P&I club, Gard, show that the average claim decreased from about US$25,000–15,000.[132] Not only the amount of average claim but also the total number of claims was on the decline despite the increasing tonnage of the club's insured fleets.[133] This was partly due to Gard's ability to identify from the claim history the main causes of the crew injuries, which were mostly preventable.[134] Similarly, the incidents of and the total liability for collisions are also in decline.[135] Again, this may be partially due to the insurers' research and innovation on loss prevention strategies.

On the other hand, statistics from the same P&I club on 119 major cargo claims between 1996 and 2000 show an upward trend in the value of the *average* claim. These statistics, however, have to be considered in light of the facts that (1) these claims concerned liability exceeding US$150,000 each, (2) the increasing value of the cargoes has been a factor, (3) no allowance has been made for inflation, and (4) there was no mention about the *total* claims per year.[136] Even when liability claims are increasing, it does not necessarily prove that there was no incentive effect of liability insurance on precautionary steps.

An increase in liability claims may be due to economic as well as legal inflation i.e., the application of new legal doctrines increasing the amount of liability paid by the defendants or their liability insurers.[137] Another possible reason for the increase of claims is the reduced incentives due to the principle of limited liability in maritime law.[138] In other words, if all these factors are accounted for, there is a strong possibility that the liability arising from negligence is actually on the decline because of the existence of liability insurance.

---

[132] See Gard (2005), p. 24. However, the total crew claims in Gard represent the largest claim category in terms of liability payment. Most of the crew claims concern illness and disease.

[133] See Gard (2005), p. 24.

[134] See Gard (2005) at p. 25.

[135] Ten-year statistics (1992–2002) on collision liability in Gard show that collision liability accounts for 3.1 % in terms of number of all P&I claims but 12 % in terms of value. However, the average cost of collision liability is on the rise. See Gard (2005) at p. 18.

[136] See Gard (2005) at pp. 3–4.

[137] See Abraham (1986), p. 46.

[138] See Chap. 3.

7.4.2 *Non-marine Insurance*

There are also proofs in other areas of liability where the insurers' research and the increased incentives by insurance mechanisms led to reduction in the incidents of loss and the consequent liability. In the 1930s and the 1940s, insurers' inspection and research improved elevators' and boilers' safety and reduced the accident rates.[139] There is also evidence that industrial accident rate particularly death rate declined sharply in part due to the incentives created by insurers,[140] although the claims for non-fatal injuries increased.[141]

As for the automobile insurance, the incentive effect of liability insurance on accidents may be indirectly proved by the increase of fatalities in no-fault liability system i.e., where third party liability is either completely or partially eliminated.[142] This may, however, simply be due to the absence of liability rather than liability insurance. High liability insurance premium for more accident-prone drivers especially for young male drivers contributes to reduction in the number of accidents at least by delaying their driving activity.[143]

7.5 Conclusion

Liability laws may fail to produce optimal care for various reasons including courts' lack of information on optimal care. While liability insurance may cause moral hazard and may reduce the incentives effect of liability law, insurers' superior information on optimal care combined with their ability to produce stronger financial incentives through rate variance and coverage restrictions will actually bring the insured individuals' care level closer to optimal care. The fact that liability insurance can produce better care than does the liability law alone may have significance in the very future of liability law in certain areas.

With the widespread first party insurance, the role of liability law as a source of compensation is decreasing in significance. The justification of liability law mainly hinges on its effect in creating incentives in the minds of potentially liable parties to exercise care. Even if this benefit of liability law may not sometimes clearly outweigh the administrative costs associated with the maintenance of the liability system,[144] the creation of additional incentives through liability insurance may tip the balance in favor of liability law. Without liability law, there would be no

[139] James (1948), p. 561.

[140] James (1948), p. 561.

[141] See Stephens (1995), p. 24.

[142] See Cohen and Dehejia (2004), p. 357; Landes (1982), pp. 49–66.

[143] See Posner (2003), pp. 201–202.

[144] This is the main argument against the automobile accident liability law and in favour of no-fault liability system. Landes (1982), p. 270; Posner (2003), pp. 201–202; Shavell (2004), pp. 281–282.

liability insurance; and without liability insurance, the possible additional incentives from it would be lost. This seems to be the case in the no-fault liability system.[145]

References

Abraham KS (1986) Distributing risk: insurance, legal theory, and public policy. Yale University Press, New Haven

Arrow KJ (1963) Uncertainty and the welfare economics of medical care. Am Econ Rev 53:941–973

Atiyah PS (1975) Accident prevention and variable premium rates for work-connected accidents – I. Ind Law J 4:1–11

Bennett HN (2006) The law of marine insurance, 2nd edn. Oxford University Press, Oxford

Billah MM (2008) Incentive effect of liability rules in the presence of liability insurance in the maritime law context: an economic analysis. Dalhousie Law J 31:427–461

Brown C (1978–1979) Deterrence and accident compensation schemes. Univ West Ont Law Rev 17:111–154

Calabresi G (1970) The costs of accidents: a legal and economic analysis. Yale University Press, New Haven

Calabresi G, Hirschoff JT (1972) Towards a test for strict liability in torts. Yale Law J 81:1055–1085

Calabresi G, Melamed AD (1972) Property rules, liability rules, and inalienability: one view of the cathedral. Harv Law Rev 85:1089–1128

Coase RA (1960) The problem of social cost. J Law Econ 3:1–23

Cohen A, Dehejia R (2004) The effect of automobile insurance and accident liability laws on traffic fatalities. J Law Econ 47:357

Daniel BD (2007) Potential liability of marine classification societies to non-contracting parties. Univ San Francisco Marit Law J 19:183

Fleming J (1967) The role of negligence in modern tort law. Va Law Rev 52:815

Gard AS (2005) Claims statistics. http://www.gard.no/iknowbase/Content/11991/Claims%20Statistics_low.pdf. Accessed 4 Dec 2007

Gilmore G, Black CL Jr (1975) The law of admiralty, 2dth edn. Foundation Press Inc., New York

Gold E (1991) Marine pollution liability after "Exxon Valdez": the U.S. "All-Or-Nothing" lottery! J Marit Law Commer 22:423–444

Hazelwood S (2000) P&I. Clubs: law and practice, 3dth edn. LLP, London

IMCO (1978) Official records of the conference on the establishment of an international compensation fund for oil pollution damage 1971. IMCO, London

James F (1948) Accident liability reconsidered: the impact of liability insurance. Yale Law J 57:549–570

Kehne J (1986) Encouraging safety through insurance-based incentives: financial responsibility for hazardous wastes. Yale Law J 96:403–427

Landes EM (1982) Insurance liability and accidents: a theoretical and empirical investigation of the effect of no-fault accidents. J Law Econ 25:49–66

Martin S (2003) Marine protection and indemnity insurance: conduct, intent, and punitive damages. Tulane Marit Law J 28:45–80

[145] The absence of liability in such no-fault accident regime has been partially attributed to the increase of automobile accidents. See Cohen and Dehejia (2004), p. 357; Landes (1982), pp. 49–66; also see Posner (2003), pp. 203–204.

Organization for Economic Co-operation and Development (OECD) (2004) Maritime transport committee report on the removal of insurance from substandard shipping. http://www.oecd.org/dataoecd/58/15/32144381.pdf. Accessed 02 Sept 2013
Pauly M (1968) The economics of moral hazard: comment. Am Econ Rev 58:531–537
Posner RA (2003) Economic analysis of law, 6th edn. Aspen Publishers, New York
Reynardson WRAB (1969) The history and development of P&I insurance: the British scene. Tulane Law Rev 43:457–474
Rose FD (2004) Marine insurance: law and practice. LLP, London
Shavell S (1987) Economic analysis of accident law. Harvard University Press, Cambridge
Shavell S (2004) Foundations of economic analysis of law. Harvard University Press, Cambridge
Stephens S (1995) The consequences of expansionary workers' compensation policy. Labor Law J 46:17–27
Strathy GR, Moore GC (2003) The law and practice of marine insurance in Canada. Butterworths, Ontario
Sykes A (1984) The economics of vicarious liability. Yale Law J 93:1231–1281
Tan AK (2006) Vessel-source marine pollution: the law and politics of international regulation. Cambridge University Press, New York
Tilley M (1986) The origin and development of the mutual shipowners' Protection & Indemnity Associations. J Marit Law Commer 17:261

Chapter 8
Conclusion

There has always been and continues to be a very strong connection between marine insurance and maritime liability laws. While the absence of marine insurance in the past led to some special maritime liability rules, today the presence of wide-spread marine insurance brings with it some new policy implications for maritime liability laws. One such policy implication seems to be the gradual adoption of compulsory insurance in various marine environmental liability laws. As discussed in various parts of the book, the availability of insurance and especially the requirement of compulsory insurance have contributed to better safety and precaution. With the use of various insurance mechanisms insurers are able to keep their insured motivated towards optimal care and consequently to reduce social losses caused by the negligence of the insured. This is best evidenced by the dramatic reduction in oil pollution incidents.

The presence of widespread insurance market not only facilitates the adoption of compulsory insurance but also justifies the abolition of those maritime principles which were adopted as proxies for insurance in the pre-marine insurance era. Two such principles examined at length in the book were the limitation of liability and general average. Ideally, these principles should be abolished as recommended in the book. However, given the conservative nature of international law-making, it is unlikely that these principles would be abolished from maritime laws in the near future. In fact, the new cargo liability law regime, the *Rotterdam rules*, recently adopted by the UNCITRAL has made no changes in these two principles.

As for the limitation of liability, the alternative to its abolition would be to increase the liability limit to a very high level so that most liability claims fall within the limit. To a large extent, this has been done in the cases of oil pollution, HNS pollution and passengers' claims liability regimes. Although the liability limit was also increased in the LLMC 1976 in 1996, the increase was very minimal when adjusted for the monetary inflation since 1976, the year when the original LLMC was adopted. If the principle of limited liability cannot be abolished at the present moment, at least the liability limit both in the LLMC 1976 and the cargo liability laws should be increased by many folds. As mentioned earlier, marine liability insurance market has the capacity to provide coverage in the case of such increase

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1_8,

as the International Group of P&I clubs can jointly offer US$7.5 billion coverage per maritime liability incident.

With regard to the general average, again the conservatism among maritime states may make it difficult to abolish this principle right away. However, the YAR 2004 made great progress in reducing the number of general average claims by abolishing salvage and some of the port-of-refuge expenses from general average. In addition, the increasing use of 'absorption clauses' in hull insurance policies also reduces the total number of claims by making it unnecessary for ship owners to claim general average contribution from cargo owners in those cases where the total losses or expenditures fall within the limits of absorption clauses. Again, we recommend the abolition of general average principle. If this cannot be done in the immediate future, at least the YAR 2004 should be incorporated into the contracts of affreightment to a greater extent. So far ship owners and their insurers have been reluctant to do so. An international convention to abolish or to limit the scope of general average may lead to better compliance with the law than does the YAR, the compliance of which is only voluntary.

Finally, the practice of insurance has direct or indirect influence in the design of maritime liability laws. If everyone involved in and affected by shipping activities can easily insure their respective liabilities and losses, compensation should not be a goal of maritime liability laws. In such case, the sole goal of liability laws should be deterrence. Deterrence suggests the imposition of liability only when there is any fault on the part of liable parties in causing the losses. Cargo liability laws are fault-based liability laws. This is in agreement with the insurance practice in the cargo liability setting as both ship owners and cargo owners are invariably insured against their respective liabilities and losses. On the other hand, people suffering losses due oil pollution from ships are not usually insured against such losses. As a result, compensation is still an important factor in the design of oil pollution liability regime. While the fault-based liability law can also secure compensation for the oil pollution victims, strict liability provides better guarantee in compensating the victims. This explains at least partially the justification for strict liability in the oil pollution liability regime. Despite the difference in the need for compensation, deterrence remains as the primary goal of liability law both in the cargo and the oil pollution liability regimes. In fact, deterrence should be the primary goal of any liability law especially when people can easily protect themselves against their potential losses and liabilities by insurance.

Index

M. Masum Billah, *Effects of Insurance on Maritime Liability Law*,
DOI 10.1007/978-3-319-03488-1,