Chapter 12
Maritime Safety Standards: Compliance and Enforcement

Maritime Safety

Ever since the era of iron men manning wooden ships, the sea and the elements have relentlessly challenged the undaunted spirit of seafarers. Mariners, shipowners, governments and others in the maritime world have been concerned for years about the safety of ships, their crews, cargo and passengers. Maritime safety has never ceased to be a matter of grave concern for the world community at large. Indeed, the original IMO motto or abbreviated mission statement of "safer ships and cleaner seas" continues to be the cornerstone of maritime activities. In the modern era, concern for safety was brought to the forefront with the sinking of the *Titanic*, and in recent times it has been driven home time and again by disasters such as the capsizing of the roll on-roll off ferry *Herald of Free Enterprise* off Zeebrugge, the sinkings of the *Donna Paz* in The Philippines, and the *Estonia* in the Baltic Sea. While the rate of shipping casualties fell steadily during the early 1980s and the amount of pollution dropped by as much as 60 %, the late 1980s and early 1990s saw a sharp and dramatic reversal which rekindled global concern in both the public and private sectors over maritime safety and pollution of the seas. The following are some of the major maritime disasters involving both safety and pollution of the seas during this time:

- The grounding of the tanker *Exxon Valdez* in Alaskan waters giving rise to heavy pollution in an ecologically sensitive area.
- The fire on board the *Scandinavian Star* off Norway with loss of life and severe damage to the vessel.
- The *Aegean Sea* smashing onto the rocks while manoeuvring to enter port off the northwest tip of Spain with consequential heavy pollution from her cargo of oil.
- The grounding and break-up of the tanker *Braer* on the craggy Shetlands coast following loss of power; remarkably, the storms and hurricane force winds which persisted for the following week cleaned the sea and beaches from heavy pollution by the cargo of light crude oil much better than any chemical dispersant could have done.

P.K. Mukherjee and M. Brownrigg, *Farthing on International Shipping*,
WMU Studies in Maritime Affairs, Vol. 1, DOI 10.1007/978-3-642-34598-2_12,

- The collision involving the tanker *Maersk Navigator* in the Malacca Straits.
- The loss of the roll-on/roll-off ferry *Estonia* on a stormy night whilst on passage from Finland to Sweden in the Baltic Sea with the loss of virtually all passengers and crew.
- The grounding of the tanker *Sea Empress* when seeking to enter Milford Haven. While she was eventually refloated, it was a lengthy process and there was considerable pollution of local beaches.

In the background of these more recent casualties was the loss without trace until recently of the large bulk carrier *Derbyshire* in the Pacific Ocean. Although, generally speaking, there has been considerable improvement with regard to maritime safety incidents, the losses, especially of lives, remain unacceptably high despite the fact that the number of fatalities compared with, for example, road accidents, is relatively small. Nonetheless, the incidents referred to above have led to government inquiries, to private sector concerns and to considerable activity at the international level through the IMO.

The issue of marine environmental protection is often considered to be a part of maritime safety. Indeed there are close connections between the two phenomena. However, in this chapter it is maritime safety that is addressed primarily. Maritime safety comprises several aspects of which four are conspicuous. The first is ship safety; then there is navigational safety and cargo safety. Finally, there is personal and occupational safety. All of these are equally important in the overall legal and operational framework of maritime safety. Two other issues are an integral part of maritime safety and are intimately connected to the above-mentioned aspects. These are seaworthiness of the ship and the professional or vocational competence of the crew. Much of the law of maritime safety is regulatory in scope but there are also private law elements pertaining to liability for damage and injury and the attendant remedy, primarily that of compensation or damages.

Ship Safety

Ship safety is concerned with how safe a ship is as a waterborne object that houses human beings and property including crew, passengers and cargo. In particular, sinkings of ro–ro passenger ferries are of grave concern. In the wake of disasters such as the *Herald of Free Enterprise*, the *Estonia* and the *Donna Paz*, regulations under the International Conventions for the Safety of Life At Sea (SOLAS) pertaining to damage and intact stability have been reinforced and a safety management regime has been introduced through the International Safety Management (ISM) Code in Chapter IX of SOLAS which imposes on shipowners and flag states added responsibility and aims to promote safety culture in the shipping industry.

Ship safety embraces the physical concepts of structural soundness and watertight integrity of a ship and includes considerations of statical and dynamical stability, damage stability, stresses and strains as well as safety and radio

communications equipment necessary for the safe preservation of the ship and its constituents. The concerns associated with ship safety are primarily of a technical nature. The standards for construction, safe operation and maintenance are contained in the rules of classification societies setting out scantlings and in the technical safety conventions of the International Maritime Organization (IMO). The principal convention in this regard is SOLAS and its associated treaty instruments. SOLAS 1974 is the principal IMO Convention in the field of ship safety. The Convention proper consists of nine Articles. Its Annex consists of 12 chapters which contain the applicable regulations pertaining to virtually all facets of maritime safety. The chapters contain, *inter alia*, detailed provisions regarding surveys and certification systems for passenger and cargo ships. Survey and certification systems under SOLAS, International Convention for the Prevention of Pollution from Ships (MARPOL) and International Convention on Load Lines, 1966 (LOADLINES) have now been integrated by means of a "Harmonized System of Surveys and Certification" (HSSC). Other subject matters in SOLAS include safety construction, life saving appliances, radio communications, safety of navigation, carriage of cargoes including dangerous goods, nuclear ships, safe management of ships and shipping operations, safety of bulk carriers and high speed craft and maritime security. The SOLAS body of numerous instruments includes mandatory Codes such as the International Maritime Dangerous Goods (IMDG), Gas Carrier, Liquid Natural Gas (LNG) Carrier and Bulk Chemical Codes, as well as the Casualty Investigation Code which became mandatory recently. There also *para droit* (soft law) instruments comprising Guidelines, Recommendations, Resolutions and the like, that are not mandatory. Other conventions such as Search and Rescue (SAR), International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE) and MARPOL are also important with regard to particular aspects of ship safety.

Loadlines

Equally important is the LOADLINE Convention which sets the maximum levels to which a ship can be loaded so that safe freeboard is maintained under varying conditions of water density and seasonal and geoclimatic considerations. The subject of freeboard is an integral part of the maritime safety regime which straddles both ship safety as well as navigational safety and is governed by the 1966 Loadline Convention. This Convention also enjoys widespread universality. As freeboard relates to the watertight integrity of the ship, as well as its ability to float safely, there are provisions in the Convention relating to the carriage of deck cargo, and to special loadlines for timber deck cargo. The Convention makes each state party responsible for ensuring compliance with the convention by ships flying its flag. In practice, however, loadlines are assigned by classification societies, which are private organizations, although a flag-state may have its own classification authority within its maritime infrastructure.

Seaworthiness

Seaworthiness is an integral part of ship safety and has both public as well as a private law implications. A vessel is considered to be seaworthy when it has "...that degree of fitness which an ordinary, careful and prudent owner would require his vessel to have at the commencement of her voyage, having regard to all the probable circumstances of it" (*McFadden* v. *Blue Star Line* [1905], 1 K.B. 697 at p. 706). While this judicial definition emanates from a private law court decision involving carriage of goods by sea, it is one that is equally applicable to seaworthiness in public law. In the definition, fitness necessarily includes safety, and safety in its expanded connotation extends to adequacy of safety construction, safety equipment, safe manning, adequate freeboard (not to be overloaded) and compliance with other safety requirements and safety procedures. The standard for determining whether or not a vessel is seaworthy is an objective one. This determination can be made with a reasonable degree of certainty arguably at the commencement of a voyage only; it is virtually impossible to guarantee that the ship will be maintained in a seaworthy condition during the voyage given the vessel's exposure to the elements and the ensuing consequences which may lie beyond the control of its owners and the crew.

Seaworthiness in terms of regulatory law is usually referred to as statutory seaworthiness. It is a matter of public policy that a ship should not be allowed to sail from a port unless it is seaworthy, and to that end, any member of the public has the right to lay an information to the relevant authorities to prevent an unseaworthy ship from sailing. Deficiency in safe manning or in safety equipment can render a ship unseaworthy. In many jurisdictions, sending or taking an unseaworthy ship to sea is an offence, and an unseaworthy ship is liable to be detained by the maritime authorities in a port until it is seaworthy. It is important to note that an obligation on the part of the shipowner to comply with seaworthiness requirements is statutorily implied in crew employment contracts.

In the current United Kingdom legislation, in addition to unseaworthy ships there is the notion of unsafe ships. The distinction is often inconsequential in practical terms but on close examination it is apparent that even if a ship is technically unseaworthy it is not necessarily unsafe but an unsafe ship is at the same time also unseaworthy. The term "dangerously unsafe" has now entered the vocabulary of maritime legislation in the United Kingdom and elsewhere. It was introduced in the legislation following the official enquiry on the *Herald of Free Enterprise* disaster. The term "dangerously unsafe" is somewhat superfluous. As remarked by an eminent author, "unseaworthiness" in itself requires consideration of the dangers of the ship in the context of its use at sea, and must necessarily involve "serious danger to human life". The concept in this form has been around at least for the past century with the need for interpretation (Robert Grime, *Shipping Law*, Second Edition, London: Sweet & Maxwell, 1991, at p. 43). It is notable that other English common law jurisdictions have not considered it necessary to introduce the term "dangerously unsafe" in their maritime legislation.

The notion of seaworthiness as a maritime safety issue is prominent in the sphere of commercial maritime law. It pertains largely to commercial maritime law, mainly with regard to marine insurance contracts where seaworthiness is a warranty the breach of which by the assured can deprive him of indemnification; and in carriage contracts evidenced by bills of lading, or in charterparties where specific obligations are imposed on the carrier to exercise due diligence to provide a seaworthy ship at the commencement of the voyage. The international conventions dealing with carriage of goods by sea, i.e., the Hague Rules, Hague-Visby Rules and Hamburg Rules all provide for seaworthiness as well as cargoworthiness requirements. The requirements are reflected in national legislation giving effect to the particular convention applicable in that jurisdiction.

The obligation of seaworthiness is not only found in contracts of affreightment, i.e. carriage contracts contained in charterparties and those evidenced by bills of lading, but also in marine insurance contracts. In carriage contracts, typically the obligation is for the carrier to exercise due diligence to make the ship seaworthy before and at the commencement of the voyage. In charterparties there is an implied warranty of seaworthiness on the part of the shipowner; even then, charterparties often contain an express term that the ship is "tight staunch and strong and in every way fitted for the voyage". A warranty of seaworthiness is also implied in every marine insurance contract. A breach of the warranty by the assured can result in the insurer lawfully refusing to indemnify the assured in the event of a loss. Indeed, in voyage policies, the application of the implied warranty is quite rigorous. The shipowner warrants absolutely that the ship is not only seaworthy at the commencement of a voyage but at every stage of the voyage as well. By contrast, in time policies the implied warranty of seaworthiness normally does not apply at any particular stage of the adventure (U.K. Marine Insurance Act 1906, s.39).

Navigational Safety

Navigational safety has to do with the safety of the ship as a manoeverable floating object including the safety of humans and property on board. This obviously entails rules of navigation as well as navigational equipment. Some of the rules and standards of safety of navigation are contained in Chapter V of the SOLAS Convention which has recently undergone extensive revision; others are contained in the Collision Regulations (COLREGS). Chapter V of SOLAS addresses such issues as navigational and meteorological warnings, search and rescue services and life-saving signals, hydrographic services including nautical charting and publications, ships' routeing, reporting systems, vessel traffic services, external aids to navigation, shipboard navigational equipment, voyage data recorders, automatic identification systems (AIS), international code of signals, navigation bridge visibility, pilot transfer arrangements, steering gear, danger and distress messages, distress signals and avoidance of dangerous situations at sea.

Collisions

The COLREGS are the most universally accepted maritime rules. Apart from being regulatory law, as the name implies, the rules frequently have important implications for the judicial resolution of civil liabilities in marine collision cases. The law of marine collisions is probably the best example of the interface between public and private law within the sphere of maritime safety. The regulatory law of marine collisions is contained in the COLREGS Convention. This Convention enjoys one of the highest rates of ratification or accession among all maritime safety conventions so much so that it is arguably a part of customary international law and is incorporated in national legislation virtually in all maritime states. The COLREGS are entirely regulatory in scope, and therefore, in corresponding national legislation violations of the regulations are offences for which there are regulatory sanctions. For example, in the case of *The N.F. Tiger* [1982] 2 Lloyd's Rep. 564, the vessel in question was held to be in violation of Rule 10(c) of the COLREGS which prohibited vessels from crossing traffic lanes otherwise than at right angles. In this case there was no civil liability element involved. The main issue was whether the master could be convicted for failing to observe the rule. The court held that there was no wilful default on the part of the master because he had no actual knowledge of the violation; nor had he been deliberately negligent.

Collision liability in civil or private law terms is governed by the principles of the law of torts. Liability is based on fault, and in particular, the notion of contributory negligence is important in collision liability cases. The international law of collision liability is contained in the International Convention for the Unification of Certain Rules with Respect to Collision Between Vessels, 1910 (Collision Liability Convention) to which most maritime states are parties. An important feature of the Convention is the express abolition through Article 6, of the hitherto statutory presumption of fault under which a ship in contravention of the COLREGS was presumed to be at fault. Among other things, the Convention sets out in Article 4, the rule of proportionality in collision liability. Pursuant to Article 4, in a collision between two or more vessels, liability is apportioned according to the degree of fault of each vessel. Where the degree of fault of each vessel cannot be determined, liability is apportioned equally, and where the collision is accidental or due to *force majeure*, the loss lies where it falls. If a collision is caused by the fault of only one ship, then that ship only is liable to make good the damages.

Most importantly, the COLREGS are applied to determine negligence and the degree of fault of each ship involved in a collision. Thus in practice, the COLREGS not only serve as a regulatory mechanism but also as a convenient tool for the determination of the degree of fault and the consequent proportion of liability in accordance with the Collision Liability Convention or the tort law prevailing in the jurisdiction. In a collision, out of the same factual situation there can arise both a regulatory or criminal case as well as a civil liability case. This was demonstrated in the Canadian case *The Hermes* [1969], 1 Ll.L.R. 425 (Can. Exchq. Ct.). The

collision between the *m.v. Transatlantic* and the *m.v. Hermes* in the navigation channel of Lac St. Pierre in the St. Lawrence River resulted in the loss of several lives. Civil and criminal actions ensued.

Personal and Occupational Safety of Crew

Occupational safety concerns the safety of seafarers serving on board ships. The safe working conditions of the seafarer are of primary importance. Safety, in this context, extends to the seafarer's welfare and well-being on board in potentially hostile maritime conditions at sea. Much depends on how well the seafarer is trained to cope with these conditions and carry out his tasks safely and efficiently. The rules and standards relating to occupational safety are contained largely in a host of conventions and treaty instruments of the International Labour Organization (ILO), in particular, ILO Convention 147 on Minimum Standards, as well as the STCW Convention and parts of SOLAS. Most recently, as mentioned earlier in this book, the very comprehensive and consolidated Maritime Labour Convention was adopted under the auspices of the ILO in 2006 and will enter into force in August 2013. It addresses many of these aspects, including issues such as fatigue and adequate hours of rest.

Standards relating to the personal safety of passengers are covered under SOLAS through the safety equipment requirements.

Occupational safety covers a host of subject matter ranging from living and working conditions on board the ship to social welfare issues such as medical treatment, victualling, hours of work and rest, fatigue, overtime work, shore leave, discipline, *etc*. which are usually related to the rights and entitlements of seafarers and their corresponding duties and obligation under their employment contract or statute. As a ship is a floating, self-contained communal unit, all of these issues are connected to the safe operation of the ship. There are extended and interrelated implications involving competence and adequacy of performance of a seafarer, and eventually, the safe existence of the shipboard community and the cargo and other property carried on board.

Professional and Vocational Competence and the Human Element

At the centre of navigation, regardless of the availability of technology, state of the art or otherwise, lies the human factor which has been discussed in detail earlier. The so-called "human element" in shipping is a major consideration embracing all

facets and activities that have the potential for endangering a vessel at sea or spelling disaster. In a 1995 document submitted by the Government of the United States to the International Maritime Organization (IMO), it was stated that analyses of marine casualties occurring over a 30-year period indicated human error to be the cause in 65–80 % of marine casualties. An earlier study done in 1991 in the United Kingdom revealed that over 90 % of collisions and groundings and over 75 % of fires and explosions were attributable to the human element in some form.

Standards of Training, Certification and Watchkeeping

Although this topic has been addressed in detail in Chap. 10, some aspects of it are worth reiterating in the context of this chapter. It has long been recognised by the international maritime community that the problem of human error can be resolved to a large extent by establishing an international standard of maritime training and education (MET) coupled with a compatible regime of certification, that is of sound professional content and uniform in scope and application. The first such attempt crystallised into the adoption by the IMO of the International Convention on Standards of Training, Certification and Watchkeeping (STCW) in 1978. The global regime for seafarers' qualifications continues to be governed by this Convention which has undergone substantial changes in the recent past. Initially, it was hailed as a major accomplishment, which no doubt it was in 1978, when at the international level there was disparity and fragmentation at best. It was primarily the traditional maritime states and a few aspiring others that had MET and certification regimes in place. The standards were based on national vocational training systems and requirements of the shipping industry in those countries.

However, it soon became painfully apparent that state parties were not implementing the convention uniformly. Some were applying standards that were far from what was required to give full and complete effect to the convention. There were inherent weaknesses in the convention that gradually became apparent during and after the period of transition from the old national regimes to the new international one. At a diplomatic conference held in 1995, amendments to the STCW convention were adopted to address these concerns and shortcomings. Through application of the tacit amendment procedure provided for in the convention, the amendments entered into force on 1 February 1997.

The amendments introduced several new and important elements into the MET and certification regime of STCW 1978. Some of these translate into quite onerous learning requirements for seafarers seeking to qualify under the convention. In their turn, the Maritime Administrations of state parties were charged with the obligation and responsibility of giving full and complete effect to the amended convention; and to that end, it was incumbent upon them to be increasingly mindful and vigilant of their own administrative practices and the interests of their respective constituencies, the MET institutions and the seafarers concerned. One of the important changes was to give the IMO authority for the first time to judge whether the training, qualification and certification given to seafarers by a state party to the

Convention matched up to required STCW standards. This innovative measure gives transparency to the training and certification resources provided by a Maritime Administration and ensures that standards of competency do not vary widely from one state party to another and that certificates issued by each state party are authentic and reliable. Further amendments were adopted at a conference held in Manila in 2010 which recently entered into force.

The STCW package consists of the following components, namely, the text of the 1978 Convention, the Final Act of the 1995 Conference, Attachment 1 to the Final Act which contains Resolution 1 adopting the amendments, the Annex containing the Regulations housed in Chapters I to VIII, Attachment 2 containing Resolution 2 adopting the Seafarers' Training, Certification and Watchkeeping Code (STCW Code) and Attachment 3 containing Resolutions 3–14 and the Final Act of the 2010 Conference. This complex body of instruments governs the international regime for seafarer training and qualifications.

Cargo Safety

Cargo safety deals with changes in the safety condition of a ship attributable to cargo of different characteristics such as dangerous goods, oil, ore, grain or other bulk cargo, *etc*. The rules and standards are governed by relevant chapters of SOLAS as well as the various Codes. Cargoes carried in bulk affect the stability of the ship. If they are ore-concentrates, they tend to make the ship stiff and prone to sinking very quickly, in the event of seawater entering the holds through a hole in the hull. Other bulk cargoes have certain inherent characteristics which can make a ship unstable. If grain becomes wet, it rapidly ferments, and increases in weight causing instability. Also, bulk grain is prone to free surface effect which can cause serious stability problems. Bulk coal without proper ventilation is liable to create an inflammable gas which may ignite or cause an explosion. Bulk carriers have the worst record in terms of maritime casualties. There are also cargoes that are classed as dangerous goods whether they are carried in bulk or in packaged form. The marking, packaging, loading, stowage, carriage and discharge of such cargo is regulated by SOLAS instruments, the Carriage of Dangerous Goods Regulations and the International Maritime Dangerous Goods (IMDG) Code.

Liability Pertaining to Maritime Safety

Public and Private Law

Public law is the law which governs matters related to the public interest. In broad terms it concerns the legal relationship between public authorities including

governments and the public. Within the national domain, public law includes constitutional law, criminal law, regulatory law, and administrative law. In federal political systems public law governs the interrelationships between political units such as provinces or states within the sovereign state and also between such a political unit and the sovereign state itself. In the international sphere, there is public international law which governs the relationships between sovereign states as well as between states and international organizations and bodies. There is also international regulatory law which predominates the international law relating to maritime safety. Thus the laws pertaining to safety conventions such as SOLAS, MARPOL, LOADLINE including laws pertaining to ship registration, flag, port and coastal state rights and responsibilities, *etc*. fall within public maritime law much of which is regulatory in scope.

By contrast, private law is the law that governs private interests. It concerns the legal relationships between private entities such as individuals, corporations and other kinds of entities that possess legal personality in one way or another. Perhaps the best example in the maritime context is the ship, which, in certain jurisdictions has a legal personality independent of its owner. Thus, private law deals with rights and liabilities of private entities *vis a vis* each other. It also governs rights and liabilities between such entities and governments or other public authorities where the subject matter of a dispute is of a private nature. In such cases the government or public authority in question wears a "private hat" and is treated by the law as a private entity for that specific purpose. Private law comprises the laws of torts, property and contract and their constituent elements such as commercial law, estate law, corporate law, etc. In the maritime field the laws of ship sales and purchases, maritime mortgages, maritime liens, arrest of ships, collision, salvage, towage, carriage of goods, marine insurance, general average, *etc*. all fall within the rubric of private law.

The Concept of Liability

Liability is essentially a qualitative concept. It is best described as the quality or standard of conduct or behaviour that makes an action or omission wrongful in the eyes of the law and for which the law provides a sanction. In some jurisdictions, by virtue of linguistic nuance, it may appear that the term responsibility is used as a synonym for liability. In terms of English law and the English language, the subtlety is, perhaps, best expressed by the statement that liability connotes legal responsibility; i.e., responsibility the exaction of which is legally enforceable and failure of which attracts legal sanction. Liability can arise in both public as well as private law although in the context of a crime it is common to use the term "guilt" which connotes criminal liability. The corresponding term in private law is "fault" in conjunction with which the terms "liability" or "civil liability" are used exclusively.

Liability for Maritime Safety in Public Law

In public law there is criminal liability arising from the commission of a crime. In the maritime field, piracy, hijacking, forgery of certificates, fraudulent cargo transactions, *etc*. are criminal offences. As well, there can be penal liability arising out of the commission of a regulatory maritime offence such as violation of a maritime safety regulation in relation to SOLAS, LOADLINE or the COLREGS. Numerous examples of such offences can be found in national maritime legislation.

Sanctions in public law are quite different from those in private law. Public law sanctions include incarceration, monetary penalties, i.e., fines, prohibition and detention orders, and even such things as community service, although it is rare in the maritime field. The severity of a sanction depends on whether the offence is characterised as a criminal offence requiring proof of *mens rea* or a regulatory strict liability offence requiring only proof of *actus reus*, or a regulatory "halfway house" offence which, in the first instance, is treated as strict liability but the accused is afforded the defence of due diligence. Most maritime safety and marine environmental offences are so characterized. This is evident from the way an offence is articulated in national legislation. The halfway house approach in relation to maritime safety offences has proven to be functional and effective.

The principal object of public law sanctions is to punish the perpetrator who is found to be guilty. Such sanctions are also meant to serve as deterrents. The accused found guilty is held up as an example to the rest of society so that would-be perpetrators will be deterred from committing such an offence. The lower the sanction the less is its deterrent effect. The law of maritime safety is largely regulatory law. It is international in scope and is established through conventions generated mainly by the IMO and some by the ILO. The regulatory conventions set out what acts or omissions constitute violations, but they do not create offences. Convention violations need to be transformed into offences in domestic legislation that are punishable through appropriate sanctions prescribed also in the legislation. The only sanction that is expressly provided for in conventions is detention of ships that are unseaworthy or otherwise deficient in terms of maritime safety. Detention is an administrative sanction which usually does not require resort to any judicial process.

Regulatory sanctions for maritime safety offences are normally in the form of fines or monetary penalties. The seriousness of the offence and the degree of liability should dictate the quantum of fines, and there should be some degree of regional harmonization in this regard, otherwise unscrupulous ships will seek out ports and jurisdictions that are relatively lenient. The commission of what is, in the first instance, a regulatory offence may have such serious consequences that the offence may well take the shape of a criminal offence, and the attendant penal sanction will have to be commensurate with the offence. In other words, the punishment must fit the crime. Thus a failure to proceed at a safe speed in fog may well lead to a collision or grounding resulting in personal injury or death in

which case the offence may be one of criminal negligence or manslaughter and the sanction may be incarceration.

Liability for Maritime Safety in Private Law

Liability in private law is generally referred to as civil liability. It arises out of tortious acts, breach of contract, unlawful conversion of property, failure to deliver property and the like. In private maritime law related to maritime safety, there are several acts or omissions that can give rise to civil liability. A collision, for example is a maritime tort; so is damage caused by fire or explosion on board a ship attributable to human error or negligence. Death or personal injury suffered by a passenger, crewmember or shore worker on board also falls under the rubric of maritime tort. Sinkings, strandings, groundings are all maritime torts. Salvage is a maritime saving act which involves maritime safety. It can be contractual or quasi-contractual in character. Towage is another contractual arrangement with maritime safety implications.

Civil liability is usually based on the notion of fault. In most cases related to maritime safety, the fault is in the form of the tort of negligence. A tort is defined as a civil wrong. In several civil law jurisdictions tort is referred to as "delict". There can be no liability for collision damage or a grounding of a ship, or the death or personal injury of an individual on board unless the plaintiff or claimant can prove that the defendant, usually the shipowner, charterer or operator, was at fault. However, there is also the notion of strict or absolute liability in maritime safety under which, the plaintiff need not prove fault but must only show that he suffered the damage or injury. The distinction between strict and absolute liability is that in the former certain defences are available to the defendant by virtue of which he may be exonerated from liability. In an absolute liability regime no such defences are available. For example, Article II, paragraph 1of the Convention on the Liability of Nuclear Ships, 1962 provides for absolute liability of the operator of a nuclear ship where it is proved that the damage in question was caused by a nuclear incident. The rationale for imposing strict or absolute liability is that the law makes it less onerous for a victim of damage resulting from an ultra hazardous activity carried out by the defendant, to obtain an appropriate remedy. The classic case in English law, considered to be the progenitor of the doctrine of strict liability in torts is *Rylands* v. *Fletcher* (1868), L.R. 3 H.L. 330.

Private law sanctions are known as remedies. There are different kinds of remedies available depending on the nature of the dispute and the wrongful act, the extent of the loss, damage or injury and the subject matter involved. The principle is to put the successful plaintiff in the same position as he would have been had the wrongful act not occurred. The principal remedy in private law is damages or compensation. It is notable that while liability is a qualitative concept, compensation is a quantitative concept because it has to do quantum. Another important remedy in private law is specific performance which is usually available

for breach of contract in certain cases. It is an extraordinary remedy granted only in extraordinary circumstances dictated by fairness and practical possibility. There are also other civil liability remedies such as restitution, rescission, restoration, *etc*. These are granted in appropriate cases depending on whether the action was framed in tort or contract.

Damages in private law and monetary penalties or fines in public law both involve money. The crucial distinction between the two is that in public law the monies end up in government coffers in much the same way as fees and dues payable to governments or other public authorities and agencies. Damages, on the other hand, are payable to the successful plaintiff in a civil action. It is recompense for the wrong suffered. Even if punitive damages are payable, they are payable to the plaintiff alone.

Liability Interfaces in Selected Maritime Safety Issues

There are certain subject matters pertaining to maritime safety that are hybrid in scope, in that, they are not identifiable simply as public or private. The subject of maritime labour is a case in point. A relationship of employment between employer and employee or master and servant is at once a contractual relationship that falls under private law and at the same time is a concern of public policy governed by statutory provisions and an administrative and regulatory law regime. Ship registration is also a hybrid area of law. It provides at once evidence of proprietary interests such as ownership and mortgages which are private law matters, as well as evidence of the right to fly the flag of the state where the ship is registered which a public law matter (*Liverpool Borough Bank* v. *Turner* (1860), 29 L.J. Ch. at p. 830). Both involve maritime safety in different ways. The liability regimes are different and so are the attendant sanctions.

In relation to other maritime safety issues, the public and private law aspects of the same matter interface each other. In other words, the same factual situation comprising an event, casualty, breach or dispute, as the case may be, can give rise to public as well as private law implications. Needless to say, the treatment of public and private law aspects including the respective sanctions are different. Some of these maritime safety issues are discussed below.

Death and Personal Injury

Cases of death and personal injury on board may arise from collision, grounding, sinking or fire or explosion on board. These are undoubtedly the most serious of maritime safety cases and almost always result in both public and private law proceedings. The *Herald of Free Enterprise* and *Estonia* sinkings are cases in point. Very often the civil liability actions take longer to be resolved, particularly if there are multiple claimants. Ferry or passenger ship sinkings typically involve

numerous claimants. The Athens Convention Relating to the Carriage of Passengers and Their Luggage by Sea, 1974 (PAL) or one of the global limitation conventions may come into play depending on whether the flag state or the forum state is a party to the relevant convention.

The public law proceedings may be in terms of regulatory or criminal law or both. The civil law proceedings would be mainly in tort, although there may, in addition, be some contractual element involved emanating from the employment contract in the case of a crew member. As well, there may be statutory provisions relating to liability and compensation that may come into play in a particular situation. This is invariably the case in the English common law jurisdictions where the maritime legislation contains express provisions relating to the responsibilities of employers of seafarers. Thus there is the application of maritime labour law which is of hybrid character as indicated earlier.

Personal injury may arise out of an accident that is fortuitous or attributable to a condition on board that is harmful or injurious. In one case, a seaman suffered a serious case of scald when he turned on the shower and stood below it. The investigation revealed that the hot water in the showers was always at a very high temperature and seafarers simply took personal precautionary measures to avoid being directly exposed to it which the plaintiff in this case did not take. In another case, a seafarer successfully sued the owners after contracting a chronic respiratory disease which was attributable to the faulty ventilation system on board through which exhaust gases flowed into the accommodation.

The employer who may be liable at law is not necessarily the shipowner. He may be a charterer, operator or even a recruiting agent. Where the shipowner is potentially liable, the role of the Protection and Indemnity Club (P&I Club) is crucial. It is the third party liability cover provided by the P&I Club that pays for the compensation for which the shipowner is liable. Where the party liable is not a shipowner, the third party liability insurer, if any, will provide the indemnification.

The defendant may successfully invoke limitation of liability under the relevant convention law if the convention in question is applicable, or under national legislation; in both cases subject to the rules relating to conduct barring limitation. Another important issue is vicarious liability. Again, subject to the conduct barring limitation provisions, where a crew member is found to be at fault in relation to the death or injury of a person, the employer may be held vicariously liable in a civil action. A Canadian case in point is *The Ogopogo* (1972), 22 D.L.R. (3d) 545, although on the facts of that case the owner of the vessel was held not liable and the persons in question to whom fault was attributable were not employees but invitees of the owner. In a criminal action, liability is normally personal and not vicarious. Indeed the principle applies in reverse in the case of an entity with independent legal personality. For example, if a ship owning company is found to be guilty of a crime which resulted in death or personal injury of a crew member or passenger, it is possible that a Director of the company will be held criminally liable if the offence is directly linked to the Director's actions or lack thereof. In a case involving an environmental offence in the United States, an ISM designated person of the ship owning company was charged with the offence.

Casualty Investigations

An eventuality in connection with a ship arising out of an unsafe condition whether accidental, fortuitous or attributable to human error is a maritime casualty where loss of life or injury has been sustained or there has been damage to property or the environment. "Maritime casualty" is defined in the IMO Code for the Investigation of Marine Casualties and Incidents (IMO Code). According to this Code maritime casualties are categorised as "very serious" or "serious".

In many jurisdictions there is a two-stage process to casualty investigation; first a preliminary inquiry, and then if the situation warrants, a formal investigation. The preliminary inquiry is usually done at an administrative level. The body conducting the formal investigation and the procedure involved may be administrative or judicial. In all cases it is a fact-finding mission. Decisions are not rendered but recommendations may be made depending on the nature of the casualty and the level of the investigation.

A casualty investigation may well lead to civil or criminal judicial proceedings or both. Or, the recommendations, if any, of the investigative body may be implemented through administrative decision. Where judicial proceedings are initiated a question arises as to whether the findings of fact of the investigative body are admissible as evidence. In this regard different jurisdictions have different rules. In some jurisdictions such as Canada and the United Kingdom the evidentiary value of the findings is zero but they can be used as a tool for cross-examining witnesses. In others, such as Italy and The Netherlands, such findings are acceptable as *prima facie* evidence (*Guidelines for Maritime Legislation*, Bangkok: ESCAP Publications, Vol. I Third Edition, 1991, at p. 191).

It is apparent from the foregoing discussion that liability issues relating to maritime safety are numerous indeed. There are many dimensions to the issues but the principles involved transcend national and regional boundaries because the concerns are global in character. There are several aspects to maritime safety itself, and the liability issues range from public law, both regulatory and criminal, to private law. In many cases, as demonstrated in this chapter, the public and private law aspects interface with each other in the context of a given set of facts such as in collision cases. In other words, the same factual situation gives rise to both public as well as private law issues. In other instances such as seaworthiness, the facts dictate whether the issue is one of public or of private law. Policies, practices and procedures pertaining to liability issues in the field of maritime safety are often different in different jurisdictions. Needless to say, harmonization in these matters is desirable, particularly on a regional basis, but whether or not that is achievable remains to be seen. Within the European Union, concerted efforts to this end are being made, and it is hoped that this region imbued with many similarities in terms of local maritime culture among the countries can serve as a model of harmonization with regard to maritime safety matters.

Safety Management

The International Safety Management (ISM) Code came about as a consequence of the sinking of the British flag cross-channel ferry *Herald of Free Enterprise* with the loss of 193 human lives. The Code was initially a set of Guidelines but was made mandatory through its incorporation into Chapter IX of SOLAS. The regime as it exists thus consists of the regulations in Chapter IX, which are six in number, and the Code itself which is a self-contained document. The Code consists of 13 Sections. Associated with the Code are "Guidelines on Implementation of the ISM Code by Administrations" (Guidelines). This document is very important for Maritime Administrations of state parties to the Convention, but it must be borne in mind that they are Guidelines only, and therefore not binding. The Guidelines have two Appendices. Appendix 1 sets out "Standards on ISM Code Certification Arrangements" and Appendix 2 contains the standard forms for the various documents and certificates required under the Code. The application of the ISM Code must involve consideration of the whole package described above.

Regulations 1 and 2 of Chapter IX contain, respectively, the Definitions and Application clauses. The ISM Code is defined; as well, various specialized types of ships in respect of which the Code is applicable are defined. The term "company" is a defined term. It does not simply bear its ordinary meaning as a body corporate, but is to be construed as the shipowner in its various forms including any organization or person who assumes operational responsibility for the ship, and has agreed to take over all of those imposed by the Code. Such an organization or person could include a manager or bareboat charterer of the ship. The word "company" is virtually a substitute for "shipowner" as the latter term is used in other maritime conventions. The Application clause provides that the Code applies to all commercial vessels of specified descriptions but, in line with all other IMO Conventions, does not apply to government-operated non-commercial vessels. The dates of application in this clause are now of little significance as they are independent of construction dates and all the application dates are now past. Thus the Code is presently applicable to all commercial vessels.

Regulation 3 is the most important as it provides the fundamental statement of law that company and ship must comply with the Code. This regulation also requires a ship to be operated by a company holding a Document of Compliance (DOC). This is a document, which pursuant to regulation 4, is to be issued by the flag state Administration or a recognized organization, usually a classification society, to a company that is in compliance with the Code. Under this regulation the flag state Administration or a recognized organization is to issue a Safety Management Certificate (SMC) to every ship complying with the Code after verifying that the company and the shipboard management operate according to the so-called "safety management system" (SMS). Regulation 5 provides that the SMS is to be maintained according to the Code requirements and regulation 6 provides for periodic verification of proper functioning of the SMS.

The first Section of the ISM Code is the Preamble which contains a statement of its purpose, which is "to provide an international standard for the safe management and operation of ships and for pollution prevention". It is thus clear that the Code does not simply address safety but also environmental protection, which until recently, were the dual objectives of the IMO's mandate. It is also apparent from the first preambular clause that the ISM Code is essentially a standard-setting instrument. The Code is expressed in broad terms to facilitate wide spread application. The basic philosophy of the Code is expressed in the sentiment that good safety management begins with commitment from the top but the commitment must filter through to all levels for it to succeed. Section 2 sets out the definitions, objectives, and application of the Code, and the functional requirements of the SMS.

The word "audit" is very familiar to those involved in ISM matters. It means systematic verification of compliance with mandatory requirements. The significance of audit is mainly in relation to the role and responsibilities of the flag state Administration under the ISM package. The Administration is responsible for issuing the DOC and SMC, and for the periodic verification of proper functioning of the SMS.

Clearly, the primary object of the Code is to exact adequate safety management responsibility from the Company both in terms of its shore-based and shipboard operations. This hallmark of the Code is patently visible in the creation of the entity known as the designated person (DP) and the specification of his responsibilities. The functions are to ensure the safe operation of each ship and provide a link between ship and shore management at the highest level. The responsibilities include monitoring of the safety and pollution prevention aspects of the operation of each ship and ensuring the application of adequate resources and shore-based support. The DP could be a superintendent or operations manager of the Company; or the Company could engage a firm to carry out the functions and discharge the responsibilities.

The DP could be considered an *alter ego* of the Company for purposes of determining whether due diligence was exercised as required under rules relating to carriage of goods by sea. His conduct could be decisive of whether the shipowner's claim to limitation could be barred. The DP is also potentially at risk for criminal liability. *The Freja Jutlandic* is a case in point where U.S. federal prosecutors commenced criminal prosecution actions against, *inter alia*, the DP of a ship owned and operated by a Danish company in connection with oily water discharges from the ship and alleged falsifications of log books. The case is discussed in one of the few books available on the ISM Code (Philip Anderson, *et al., Cracking the Code*, London: Nautical Institute, pp. 133–134). While the creation of the DP in the ISM Code was envisaged as a regulatory device to exact Company responsibility for affirmative action regarding safety management, it seems to have generated some negative unintended outfalls and its effectiveness has been questioned. Three classification societies, ABS, DNV and LR have reportedly stated that the Code is ineffective (Fairplay, June 14, 2001 at p. 12).

The distinctive feature of the Guidelines is that it is directed to Maritime Administrations as distinguished from the Code itself which is primarily directed to the Company. As such, the Code and the Guidelines complement each other and both flow from the Regulations in Chapter IX.

Apart from the Introduction, in which there appears a brief statement on the mandatory nature of the Code and the verification and certification responsibilities of the Administration, the Guidelines consist of four sections addressing respectively, the scope and application of the Guidelines, verification of Code compliance, issuance and validity of the DOC and SMC, and the certification process. Appendix 1 to the Guidelines speaks to certification arrangement standards and Appendix 2 provides the standard forms of the DOC and SMC including their interim versions. It is apparent that considerable stress is laid on the ability of the SMS to meet the general safety management objectives identified in the Code. The issue and renewal at 5-yearly intervals of the DOC and SMC is subject to initial and annual verification of proper establishment and effective functioning of the SMS.

Maritime Safety in the Current Milieu

The Private Sector Perspective

The shipping industry does not seek to excuse or condone low standards or sloppy practices ashore or afloat. But through its various associations and bodies it endeavours to explain that losses and casualties are the exception rather than the norm and that millions of miles are steamed each year without loss of lives, cargo or other incident; and that cargoes normally arrive intact and on time. Equally, the industry has sought to underline the relationship between revenue (freight rates) and the ability to maintain a vessel to the highest standard; and the fact that an old vessel is not necessarily a bad vessel let alone that creature so beloved by the media, "a rust bucket". Quite obviously the older the vessel the more has to be spent on maintenance. If freights, as has so often been the case, do no more than cover day-to-day running costs, then the temptation to cut back on maintenance is obvious. Nonetheless, there exists a real determination to eliminate sub-standard ships; to reduce casualties and to prevent loss of life, injury, damage to the environment and property; and to promote safe and efficient maritime transport on the basis of the following principles.

Prevention Rather than Overkill

Regulatory overkill is due, almost invariably, to over-reaction to major accidents. The investigation of a serious casualty seems often to end up with a string of proposals to ensure that every lesson, real or imagined, is addressed. That is not

necessarily helpful. Often, recommendations are little more than knee-jerk reactions and have minimum effect on future levels of safety and the prevention of pollution. Even when addressed to the central cause of the accidents, the remedy can sometimes be disproportionate to the risk or excessive in relation to what can be achieved. The cost to the industry of frequent changes, especially if applied retrospectively, is not just financial. It engenders an undesirable scepticism about the whole regulation-making process.

A regulatory regime based on a careful analysis of all the risks is all important and gives confidence that matters will be carried through to effective implementation. It will not of course eliminate all accidents because ships are operated by human beings with all their failings. But it will reduce the risk of matters going seriously wrong.

Non-discrimination on the Basis of Age

An old ship is not necessarily a bad ship; equally, a new ship is not necessarily a good one. Everything else being equal the condition of a ship and her maintenance is all important. There are times, however, when other factors need to be considered; but these should be the exception rather than the rule. Examples are bad design or imperfect construction or when contemporary standards have overtaken past practice so that the resultant gap in safety levels is too wide.

A Fully International Approach

A national or regional approach, as has frequently been said, can only lead to clashes—an unworkable situation for shipping—and regulatory chaos. Unfortunately every incident, particularly if it involves loss of passengers' lives, leads to pressure on politicians to see that something is done. This inevitably finds expression in unilateral action (for example, by the US after the *Exxon Valdez*, the UK after the *Herald of Free Enterprise* and by North European nations after the *Estonia*). It can also result in threats of unilateral action, for example, by the European Commission or other regional groupings as a result of incidents which directly affect them or their interests.

The Sharing of Risks and Liabilities

Sharing of risks and liabilities must be on an equitable and internationally agreed basis. Whilst the main responsibility for safety, the maintenance of vessels, and where necessary, improvement of standards, lies on shipowners, operators and managers, other parties in maritime ventures have an important role to play. For instance, classification societies, shipbuilders and repairers, manning agents and equipment manufacturers all have an influence on design, construction and

operation. Their decisions can significantly affect safety and the well-being of the vessel. Damage to vessels can also be caused by incorrect use of modern loading and discharging equipment. This must be recognised by ports and terminals. Charterers and cargo interests also have a role to play recognising that all voyages are, and should be seen as, joint ventures for the parties involved.

Classification Societies through IACS

Classification societies are a basic and vital part of the fabric of the industry. In them rests the technical knowledge and expertise for carrying out the classification, and maintenance in class, of vessels entered with them. In them and through their boards of shipowners is vested the accumulated wisdom and experience of the industry. The unacceptably high rate of ship casualties in recent years and loss of lives, means that the classification societies have come in for a barrage of criticism, some justified, some not. One particular area of criticism has been that competition leads to "class hopping" and the readiness of one society to have vessels entered with it previously denied class by another. Both in this respect and generally the societies have taken positive initiatives to improve their standards in particular by giving IACS a strong, co-ordinating and policing role in their affairs. IACS now acts as a well-drilled force not only in matters of ethics and policy but also in committing its members to the highest professional and technical standards. There is little doubt that the classification societies both through IACS and of their own volition have, despite difficulties, achieved a much greater degree of cohesion in recent years.

Underwriters and the Insurance Industry Generally

The insurance industry has over the years been badly hit in the marine and offshore sectors, quite aside from hurricanes and other disasters. This has made them extremely sensitive to standards and the record of owners. It has also resulted in their taking steps to tighten up the terms of cover (through amendments to the so-called Hull Clauses) and to invite the Salvage Association surveyors to undertake special and additional surveys. These steps have come in for some criticism from shipowners because they felt they had not been sufficiently consulted and because of the additional surveys and inspections in an already overburdened industry. It has also been pointed out to underwriters that they were undermining the role of classification societies, bodies they themselves established during the previous century for the precise purpose of assuring themselves that they were underwriting a good risk.

P&I Clubs

The Clubs are another very important part of the overall framework of insurance. They obviously have a keen interest in safety, the avoidance of damage and pollution. They have assessed that 60 % or more of claims arise from human error, a statistic not lost on shipowners. The important thing is that the Clubs, shipowners and others all work together towards the same goal.

Cargo Interests

Cargo owners, charterers, shippers and receivers are all part and parcel of maritime ventures (or adventures) as has already been said. Too often cargo interests show little readiness to participate in shipping industry affairs. This gives the impression that they are only concerned when cargo is lost or damaged; and even then, not always. The fact that, at the end of the day, insurance will pay is often all what they perceive. The appearance, coupled with competitive factors, is thus that their only interest is in getting their goods or cargo carried at the lowest possible rate of freight. This has led to the phrase "sub-standard charterers", namely, those who drive the hardest bargain on rates and are not too fussy about the quality of the vessel. On the other hand some big charterers, principally but by no means exclusively the oil majors, are extremely strict about the vessel they are negotiating to charter and insist on establishing her quality by independent inspection or in other ways. At the same time they understandably drive the best bargain they can on rates. While many charterers say that they are prepared to pay a premium rate for good quality tonnage the reality, certainly in the eyes of the shipowners, is often to the contrary.

There is room for greater dialogue between cargo interests in the bulk trades (as has happened in the liner trades) on general issues which affect shipping as well as full co-operation when it comes to questions of detail about the condition of the cargo, loading, stowage, receiving and discharge especially when these relate to matters of safety.

Ports and Terminals

Practices in ports and terminals do not generally impinge much on the safety of a ship itself although they may sometimes pose risks to seafarers. The loading and unloading of solid bulk cargoes is, however, an exception. But there has, in recent years, been a recognition of the danger for the structural integrity of a vessel from modern fast loading and discharging practices. Unlike years ago when virtually all cargoes were loaded by hand in sack or parcel loads, today coal, iron ore, grain, phosphates, rock and the like are loaded mechanically from shutes at very fast speeds. This can place the vessel under tremendous stresses and strains.

Unloading of bulk carriers, furthermore, is frequently done by very large and weighty mechanical grabs. Even bulldozers are used in the huge cathedral-size holds. If unskilfully or carelessly used, significant damage to the ship's structure can result. Accordingly, there must be full co-ordination and co-operation between the vessel and the shore gangs. Similar considerations apply to all types of vessels where modern loading and discharging techniques are used. This has resulted in various private sector initiatives in order to ensure that loading and discharging operations are carried out with mutual understanding between ship and shore and that terminal operators fully understand the safety implications for vessels if they are subjected to excessive stresses and bending moments. An example of this is the November 1994 incident of the 145,033 DWT Cypriot bulk carrier *Trade Daring* which literally broke its back during loading in the Brazilian port of Ponta da Madeira.

Crew Quality and Training

Modern ships are large and complex with an increasing amount of sophisticated equipment. The quality of crew has accordingly to be much higher than hitherto especially when their numbers are constantly being pared down. Thus recruitment, initial training and constant retraining must have the highest priority. This is all the more difficult in an age when the call of the sea, certainly in the traditional fleets, means that there no longer exists a pool of officers and trained seafarers from the principal maritime states. The result is that vessels are increasingly crewed by non-nationals, even among the officers, with a danger of communication problems. The IMO addresses this issue through measures under the STCW Convention within the scope of its technical cooperation role. Whilst the call of the sea may not be heard as clearly as hitherto (and there is today much less of a need to go to sea to earn a wage), the opportunities are there for those who wish to have early responsibility for increasingly valuable and complex equipment.

The Governmental Dimension

The Role of the IMO

As is obvious, governments through the IMO have a pivotal role in all matters pertaining to safety and the avoidance of pollution from sea-going craft. But, being an inter-governmental body comprising 170 member states and 3 associate members, it inevitably moves at a fairly slow pace, although much has been done in recent years to quicken the decision-making processes. Procedures and working arrangements have been streamlined but, most importantly, the technical requirements of some of the major Conventions (SOLAS, MARPOL, COLREGS and STCW) can now be changed by the so-called tacit amendment procedure. Unlike the explicit procedure, where parties to a convention had formally to ratify

amendments, under the tacit procedure, they become international law by a vote in the Maritime Safety Committee or the Marine Environment Protection Committee. If greater speed is required, an amendment in 1994 to SOLAS permits, in exceptional circumstances, the convening of a Conference of Contracting Governments to reduce the period from 12 to 6 months for an amendment to the technical chapters to the convention to come into effect.

This ability to change regulations quickly, and with minimum formality, has proved to be very useful. But it is two-edged. Despite a general commitment to proceed only on the basis of compelling need, the tacit amendment procedure has encouraged the making of an avalanche of new regulations so that the shipping industry finds it increasingly difficult to keep up with the changes. More seriously, very little account is taken of the costs involved. These can be considerable, especially if new standards are applied retrospectively to existing ships; a new and novel trend. In an attempt to reduce the rate at which amendments to SOLAS have been adopted, it has been agreed that amendments will only be made once every 4 years, except in special circumstances. This, however, is only partially helpful, since the setting of standards at the IMO is only one element of the action required. The other key to success lies in full, timely and accurate implementation of standards enshrined in the various treaty instruments agreed at the IMO by member states; and for the IMO to address issues as they arise in an authoritative yet sensitive manner since none of them are easily resolved.

The IMO is often pilloried following major incidents for having failed to be a law enforcer. The IMO lacks teeth mainly because enforcement of conventions is not within its mandate. That is the province of each state party to an IMO Convention. At any rate, there are practical difficulties and costs that would be involved in the recruitment and maintenance of an international cadre of surveyors to enforce the conventions. In recent times, however, the IMO has been assuming quite a proactive role, not only in terms of the treaty instruments it is generating but also their effective implementation. The ISM Code and STCW 1995 are prime examples of treaty instruments with more teeth than would have been expected in earlier times. The ISM Code imposes requirements directly on owners and operators of ships and STCW 1995 breaks new ground by giving IMO the authority to scrutinise the performance of a Maritime Administration in meeting its commitments under the convention. We may well see more of this in the future. The IMO should have a more unifying role and its powers should be extended to make state parties to conventions and other entities in shipping more accountable in terms of enforcement of the conventions. The need for this is borne out in an OECD report which found that:

> . . . different bodies in charge of ensuring and/or monitoring compliance (Flag State and Port State authorities, classification societies, chartering or marine insurance interests and the maritime labour unions) vary in the degree of diligence they apply when conducting such activities and when following up any non-observance of internationally agreed rules and regulations as regards safety and the protection of the marine environment. (See Foreword to "Competitive Advantages Obtained by Some Shipowners as a Result of Non-Observance of Applicable International Rules and Standards", Paris 1996, OCDE/GD(96)4.)

Over the years, the IMO has addressed several issues relating to tanker safety and pollution prevention. Cargo liners and container ships have not been the focus of specific attention although inevitably they have been the subject of numerous general rules affecting design, construction, stability, collision avoidance, navigation, *etc*. The IMO has also concentrated on issues relating to the safety of ro–ro ferries and bulk carriers as the direct result of some relatively recent casualties. The causes of some of these have remained unexplained. For ferries, the issues were complex and commercially sensitive since the whole principle of "drive on/drive off" through open car/lorry decks was at stake. They were eventually resolved after long and difficult negotiations resulting in five Resolutions at the 19th Assembly amending SOLAS and covering the following:

- A safety culture in and around passenger ships.
- The strength of locking devices and the security of "shell" doors, which of course includes bow doors.
- Surveys and inspections.
- Navigational guidance and information systems.
- Decision support systems for Masters in emergency situations.

Since the *Estonia* casualty was the prime motivation for these measures, it is significant that political forces in Northern Europe have led to further measures under the so-called Stockholm Agreement whereby ro–ro passenger ships on scheduled voyages in NW Europe and the Baltic Sea have to be capable of remaining afloat after flooding of the car deck. It may be that such regional extensions of IMO decisions are undesirable in policy terms while they are understandable from the public and political standpoints. It is thus a significant observation that as of 1 March 2005, the floatability and stability measures of the Stockholm Agreement have been made mandatory through EU legislation in respect of all EU passenger vessels and all non-EU passenger vessels trading in European waters. Although the IMO was faced at the same time with both ro–ro ferry and bulk carrier safety issues, it gave priority to the former. Nevertheless, in relation to bulk carriers, the following improvements have been brought about through recent amendments to SOLAS.

- Damage stability requirements are effective with particular reference to "high density" solid bulk cargoes (essentially iron ore).
- Structural strength requirements, through new rules, with specific reference to "high density" cargoes, entered into force on 1 April, 2006.
- Regulations relating to enhanced surveys have been introduced which include surveys of hold structures.
- Special endorsement of safety construction certificates.
- Loading computers are compulsory for all bulk carriers.

In all this work, the IMO has placed heavy reliance on the expert advice of the classification societies through IACS and other private sector shipowners organisations. But this is by no means the only safety work undertaken by the

IMO. Other extremely important initiatives, some of which have already been mentioned, include the following:

- STCW 1995 which provides a comprehensive package of interrelated measures addressing the inadequacies of the original convention and seeking to improve the competence of seafarers world wide. The amendments place new responsibilities on shipping companies; establish new and uniform standards of competence; and incorporate measures designed to ensure that governments implement the requirements properly. These amendments entered into force on 1 February 1997. Further improvements have been brought about through the Manila Amendments of 2010 which are now in force as mentioned earlier.
- A more critical approach to the so-called "grandfather clause" which excepted existing ships from new structural requirements. Notably, "grandfathering" is no longer applicable with respect to damage stability requirements for passenger ships.
- Work programmes designed to ensure that Maritime Administrations fully and properly discharge their obligations under the IMO conventions to which they are parties. These include such devices as the flag state implementation initiative and the IMO member state audit scheme particularly directed towards flag states that are deficient in terms of enforcement of standards on ships flying their flags.

There is little doubt that port state control has made a significant contribution to the eradication of sub-standard ships and to safety in general. However, care has to be taken in its implementation so as to ensure that inspections go to the root of safety and are not concerned with purely technical and often minor infringements; that there is a reasonable degree of uniformity of application between different ports and regions; and that those responsible for inspections are properly trained, fully qualified and experienced. It quite simply enables port state inspectors to check whether a ship complies with convention requirements, in the first instance, by inspecting all documentation, and then, by physically inspecting the ship if there are clear grounds to believe that such inspection is necessary. If deficiencies are found, the vessel may be detained for necessary repairs. These powers, whilst justified in pursuit of safety and the protection of the environment from pollution, must be viewed as ancillary to those of flag states. The primary responsibility for a ship's compliance with conventions still rests with the flag state.

Facts of Life in the Maritime World

As already stated, each incident produces ideas for instant solutions, often from those who simply do not understand ships and the sea. It is appropriate, therefore, to re-emphasise certain facts of the maritime world:

- Despite the very best and continuing efforts of many ashore and afloat, by governments, classification societies and others, accidents will continue. It

would be unrealistic to believe otherwise. This must not, however, discourage anyone from trying their utmost to minimise the possibility.

- Open registries, FOCs or flags of necessity, whatever they might be called, are facts of life brought about by commercial realities and are here to stay. Indeed, their place in the shipping world was accepted by governments internationally at the time of the Ship Registration Conference of UNCTAD in 1986.
- Mixed crews are not a new phenomenon. They have been part of the shipping scene for a century or more, although perhaps today they are more mixed than ever before. They are also a fall-out from trading conditions and other changes in shipping world wide. Their existence underscores, however, the need for more attention to be paid to communication skills, not only in passenger ships, but generally. They are also here to stay.
- Some 75 % of the world, as has been previously stressed, is covered by the oceans and over 80 % of world trade is carried in whole or in part by sea. Incidents are the exception and not the norm. Shipping remains, as it has always been, the handmaiden of world trade.

Conclusion

There are many dimensions to maritime safety some of which are co-related to protection of the marine environment which today is a major concern. The legal and practical principles involved transcend national and regional boundaries because the concerns are global in character. The issues range from public law, both regulatory and criminal, to private law, and in many cases, with several interfaces. Much can be learned from the experiences of disasters such as the *Herald of Free Enterprise*, *Doña Paz*, *Haven*, *Estonia* and the *Scandinavian Star*. Research in relevant areas of maritime safety will inure to the benefit of the maritime world at large. If shipping is to prosper, due attention must be paid by all parties involved to the subject of maritime safety which is invariably a matter of paramount concern.