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**IMPLICATIONS OF
THE UNITED NATIONS CONVENTION ON
THE LAW OF THE SEA FOR THE
INTERNATIONAL MARITIME ORGANIZATION**

**Study by the Secretariat of the
International Maritime Organization (IMO)**

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INTRODUCTION

This document is intended to provide a comprehensive overview of the work of the International Maritime Organization (IMO) as it relates to the United Nations Convention on the Law of the Sea ("the Convention" or "UNCLOS"). Originally prepared in 1987 and issued as document LEG/MISC.1, this survey has been substantially revised and updated. The present version updates LEG/MISC.6 by reflecting developments that have taken place from May 2008 to December 2011. It was finalized in consultation with the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs, of the United Nations (DOALOS).

Part I includes comments and concepts of relevance in assessing the general legal framework relating to UNCLOS and the work of IMO and its instruments.

Part II provides a detailed analysis of the relationship between UNCLOS and various IMO instruments.

Part III deals with the role of IMO in settling disputes, in the light of the UNCLOS provisions in this area.

In Part IV consideration is given to the scope of IMO activities since the entry into force of UNCLOS and to the possibilities of modifying or extending the Organization's functions and responsibilities.

The annex contains a table showing the relationship between articles of UNCLOS and relevant IMO instruments.

An updated table of the status of all IMO treaty instruments referred to in this document, including those in the annex, can be found on the IMO website (www.imo.org).

The contents of this document complement the information and analysis contained in two publications prepared by DOALOS:

- *Obligations of States Parties under the United Nations Convention on the Law of the Sea and Complementary Instruments* published by the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, of the United Nations; and
- *Law of the Sea Bulletin No.31, part III. Competence of relevant international organizations under the UN Convention on the Law of the Sea.*

PART I

GENERAL FEATURES OF THE RELATIONSHIP BETWEEN UNCLOS AND IMO SHIPPING REGULATIONS

Historical background

Between 1973 and 1982, the Secretariat of IMO (formerly IMCO) actively contributed to the work of the Third United Nations Conference on the Law of the Sea in order to ensure that the elaboration of IMO instruments conformed with the basic principles guiding the elaboration of UNCLOS.

Overlapping or potential conflict between the work of IMO and UNCLOS was avoided by the inclusion in several IMO conventions of provisions which state specifically that their text did not prejudice the codification and development of the law of the sea in UNCLOS or any present or future claims and legal views of any State concerning the law of the sea and the nature and extent of coastal and flag State jurisdiction.

After the adoption of UNCLOS in 1982, the IMO Secretariat held consultations with the Office of the Special Representative of the Secretary-General of the United Nations for the Law of the Sea, and later with DOALOS in connection with several matters relating IMO's work to UNCLOS. Even before the entry into force of the Convention in 1994, explicit or implicit references to its provisions were incorporated into several IMO treaty and non-treaty instruments.

The global mandate of IMO

Although IMO is explicitly mentioned in only one of the articles of UNCLOS (article 2 of Annex VIII), several provisions in the Convention refer to the "competent international organization" in connection with the adoption of international shipping rules and standards in matters concerning maritime safety efficiency of navigation and the prevention and control of marine pollution from vessels and by dumping.

In such cases, the expression "competent international organization", when used in the singular in UNCLOS, applies exclusively to IMO, bearing in mind the global mandate of the Organization as a specialized agency within the United Nations system established by the Convention on the International Maritime Organization (the "IMO Convention"). The IMO Convention was adopted by the United Nations Maritime Conference in Geneva on 6 March 1948. (The original name of "Inter-Governmental Maritime Consultative Organization" was changed by IMO Assembly resolutions A.358(IX) and A.371(X), adopted in 1975 and 1977 respectively.)

Numerous provisions in UNCLOS refer to the mandate of several organizations in connection with the same subject matter. In some cases, activities set forth in these provisions may involve IMO working in cooperation with other organizations. In order to assist States and to contribute to a better understanding of the implications of the Convention for the organizations and bodies dealing with maritime affairs both within and outside the United Nations system, DOALOS has prepared a table on "Competent or relevant international organizations" in relation to UNCLOS. Published in the Law of the Sea Bulletin No.31, the table lists subjects and articles in the sequence in which they appear in the Convention, together with the corresponding competent organizations.

Article 1 of the IMO Convention establishes the global scope of IMO safety and anti-pollution activities. It also refers to other tasks such as the promotion of efficiency of navigation and the availability of shipping services based upon the freedom of shipping of all flags to take part in international trade without discrimination. Article 59 mentions IMO as the specialized agency within the United Nations system in relation to shipping and its effect on the marine environment. Articles 60 to 62 refer to cooperation between IMO and other specialized agencies as well as governmental and non-governmental organizations, on matters of common concern and interest.

The following facts indicate the wide acceptance and uncontested legitimacy of IMO's universal mandate in accordance with international law:

- 170 sovereign States representing all regions of the world are at present Parties to the IMO Convention and accordingly Members of IMO;
- all Members may participate in meetings of the IMO bodies responsible for drafting and adopting recommendations containing safety and anti-pollution rules and standards. These rules and standards are normally adopted by consensus;
- all States, whether or not they are Members of IMO or the United Nations, are invited to participate in the IMO conferences responsible for adopting new IMO conventions. All IMO treaty instruments have so far been adopted by consensus.

Relationship between UNCLOS and IMO instruments

UNCLOS is acknowledged to be a "framework convention". Many of its provisions, being of a general kind, can be implemented only through specific operative regulations in other international agreements.

This is reflected in several provisions of UNCLOS which require States to "take account of", "conform to", "give effect to" or "implement" the relevant international rules and standards developed by or through the "competent international organization" (*i.e.* IMO). The latter are variously referred to as "applicable international rules and standards", "internationally agreed rules, standards, and recommended practices and procedures", "generally accepted international rules and standards", "generally accepted international regulations", "applicable international instruments" or "generally accepted international regulations, procedures and practices".

The following UNCLOS articles and provisions are of particular relevance in this context:

- article 21(2) refers to the "generally accepted international rules or standards" on the "design, construction, manning or equipment" of ships in the context of laws relating to innocent passage through the territorial sea; article 211(6)(c) refers to the "generally accepted international rules and standards" in the context of pollution from vessels; article 217(1) and (2) refers to the "applicable international rules and standards" in the context of flag State enforcement; and article 94(3), (4) and (5) requires flag States to conform to the "generally accepted international regulations, procedures and practices" governing, *inter alia*, the construction, equipment and seaworthiness of ships, as well as the manning of ships and the training of crews, taking into account the "applicable international instruments";
- articles 21(4), 39(2), and by reference article 54 refer to "generally accepted international regulations" in the context of prevention of collisions at sea;

- article 22(3)(a) refers to the "recommendations of the competent international organization" (IMO) in the context of the designation of sea lanes, the prescription of traffic separation schemes (TSS), and their substitution. In the same context, articles 41(4) and 53(9) provide for the referral of proposals by States to the "competent international organization" (IMO) with a view to their adoption;
- article 23 refers to the requirements in respect of documentation and special precautionary measures established by international agreements for foreign nuclear-powered ships and ships carrying nuclear or inherently dangerous or noxious substances;
- article 60 and article 80 refer to the "generally accepted international standards established by the competent international organization" (IMO) for the removal of abandoned or disused installations or structures to ensure safety of navigation (paragraph 3); the "applicable international standards" for determination of the breadth of safety zones; the "generally accepted standards" or recommendations of the "competent international organization" (IMO) where the breadth exceeds a distance of 500 metres (paragraph 5); and the "generally accepted international standards" regarding navigation in the vicinity of artificial islands, installations, structures and safety zones (paragraph 6);
- article 94(3), (4), and (5), which regulates the duties of flag States, and article 39(2), which concerns the duties of ships in transit passage, refer to the "generally accepted international regulations, procedures and practices" for safety at sea and for the prevention, reduction and control of pollution from ships;
- article 210(4) and (6) refers to the "global rules, standards, and recommended practices and procedures" for the prevention, reduction and control of pollution by dumping; article 216(1) refers to the enforcement of such "applicable rules and standards established through competent international organizations or general diplomatic conference";
- article 211 refers to the "international rules and standards" established by "States acting through the competent international organization" (paragraph 1) and "generally accepted international rules and standards established through the competent international organization" (paragraphs 2 and 5) for the prevention, reduction and control of pollution of the marine environment from vessels. Article 217(1) and (2), article 218(1) and (3), and article 220(1), (2) and (3), dealing with enforcement of anti-pollution rules, refer to the "applicable international rules and standards". Articles 217(3) and 226(1) refer to the certificates (records and other documents) required by international rules and standards in the context of pollution control;
- article 211(6)(a), in connection with pollution from vessels, refers to such international rules and standards or navigational practices are made applicable, through the competent international organization (IMO), for special areas;
- article 211(7) requires such "international rules and standards" to include, inter alia, those relating to prompt notification to coastal States whose coastline or related interests may be affected by incidents, including maritime casualties, which involve discharges or probability of discharges;
- articles 219 and 226(1)(c) refer to "applicable international rules and standards" relating to seaworthiness of vessels, while article 94(5) refers to "generally accepted international regulations, procedures and practices" governing seaworthiness of ships.

These provisions clearly establish an obligation on UNCLOS States Parties to apply IMO rules and standards. The specific form of such application relies to a great extent on the interpretation given by Parties to UNCLOS to the expressions "take account of", "conform to", "give effect to" or "implement" in relation to IMO provisions. A distinction should be also made between the two main types of IMO instruments that contain such provisions: on the one hand, the recommendations adopted by the IMO Assembly, the IMO Maritime Safety Committee (MSC) and the IMO Marine Environment Protection Committee (MEPC), and on the other the rules and standards contained in IMO treaties.

IMO resolutions

All IMO Member States are entitled to participate in adopting resolutions of the IMO Assembly, the MSC and the MEPC which incorporate recommendations on the implementation of technical rules and standards not included in IMO treaties. These resolutions are normally adopted by consensus and accordingly reflect global agreement by all IMO Members. Parties to UNCLOS are expected to conform to these rules and standards, bearing in mind the need to adapt them to the particular circumstances of each case. Moreover, national legislation implementing IMO recommendations can be applied with binding effect to foreign ships.

Technical codes or guidelines included in the resolutions are frequently made mandatory by incorporation into national legislation. This is, for instance, the case of the International Maritime Dangerous Goods Code (IMDG Code), which came into mandatory effect on 1 January 2004 following the entry into force of amendments to SOLAS chapter VII.

In several cases, codes and guidelines initially contained in non-mandatory IMO resolutions are incorporated at a later stage into IMO treaties. For instance, the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) has been incorporated into both the International Convention for the Safety of Life at Sea, 1974 (SOLAS) and the International Convention for the Prevention of pollution from ships 1973/1978,(MARPOL).

IMO treaty instruments

The general obligations established by UNCLOS regarding compliance with IMO rules and standards should, in the case of IMO conventions and protocols, be assessed with reference to the specific operative features of each treaty. These features relate not only to the way in which the rules and standards regulate substantive matters such as the construction, equipment or manning of ships, but also to the procedural rules governing the interrelations between flag, port and coastal State jurisdiction in matters such as certificate recognition and enforcement of sanctions following violation of treaty obligations.

The application of IMO treaties should also be guided by the provisions contained in articles 311 and 237 of UNCLOS. Article 311 concerns the relation between the Convention and other conventions and international agreements. Article 237 includes specific provisions on the relationship between UNCLOS and other conventions concerned with the protection and preservation of the marine environment.

Article 311(2) provides that the Convention shall not alter the rights and obligations of States Parties which arise from other agreements, provided that they are compatible with the Convention and do not affect the application of its basic principles. International agreements expressly permitted or preserved by other articles of the Convention are not to be affected (article 311(5)).

Article 237(1) establishes that the provisions of part XII of the Convention are without prejudice to the specific obligations assumed by States under previously-concluded special conventions and agreements relating to the protection and preservation of the marine environment, or to agreements which may be concluded in furtherance of the general principles set forth in the

Convention. Paragraph 2 provides that specific obligations assumed by States under special conventions with respect to the protection and preservation of the marine environment should be carried out in a manner consistent with the general principles and objectives of the Convention.

Against this background, compatibility between UNCLOS and IMO treaties can be established on the following basis:

- Several provisions of UNCLOS reflect principles compatible with those already included in IMO treaties and recommendations adopted prior to the Convention. In this regard, mention should be made of provisions on collisions at sea, search and rescue of persons in distress at sea, traffic separation schemes, exercise of port State jurisdiction for the protection and preservation of the marine environment, liability and compensation for oil pollution damage and measures to avoid pollution arising from maritime casualties.
- The active participation of the IMO Secretariat at the Third United Nations Conference on the Law of the Sea ensured that no overlapping, inconsistency or incompatibility existed between UNCLOS and IMO treaties adopted between 1973 and 1982. In some cases, compatibility was further ensured by the inclusion in IMO treaties of specific clauses indicating that the treaties should not be interpreted as prejudicing the codification and development of the law of the sea in UNCLOS (see article 9(2) of MARPOL 73/78, article V of STCW 1978, and article II of SAR). A similar provision was included in the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention), in respect of which IMO performs secretariat functions. These clauses also stipulate that nothing in these treaties should prejudice present or future claims and legal views of any State concerning the law of the sea and the nature and extent of coastal and flag State jurisdiction. In this way, legal certainty is provided, ensuring that IMO global regulatory activities do not overlap with developments in the field of codification of the law of the sea.

Legal status of IMO treaties in accordance with international law and the Law of the Sea

The degree of acceptability and worldwide implementation accorded to the rules and standards contained in IMO treaties is paramount in considering the extent to which Parties to UNCLOS should, in compliance with obligations specifically prescribed in the Convention, apply IMO rules and standards. In this regard, it should be noted that reference to the obligation for States Parties to the Convention to "take account of", "conform to", "give effect to" or "implement" IMO rules and standards is related to the requirement that these standards are "applicable" or "generally accepted". This means that the degree of international acceptance of these standards is decisive in establishing the extent to which Parties to UNCLOS are under an obligation to implement them. This factor will also be important in determining the extent to which any obligation under UNCLOS to comply with generally accepted safety and anti-pollution shipping standards can bind Parties to the Convention even if they are not Parties to the IMO treaties containing those rules and standards.

Since 1982, formal acceptance of the most relevant IMO treaty instruments has increased greatly. As of December 2011, the three conventions that include the most comprehensive sets of rules and standards on safety, pollution prevention and training and certification of seafarers, namely, SOLAS, MARPOL and STCW, have been ratified by 159, 150 and 154 States, respectively (representing approximately 99% gross tonnage of the world's merchant fleet). The general degree of acceptance of these shipping conventions is mainly related to their implementation by flag States, which is strengthened by the fact that, under the principle of "no more favourable treatment", port States which are Parties to these conventions, respectively, are obliged to apply these rules and standards to vessels flying the flag of non-party States.

It should be noted that technical rules and standards contained in several IMO treaties can be updated through a procedure based on tacit acceptance of amendments. This procedure enables amendments to enter into force on a date selected by the conference or meeting at which they are adopted unless, within a certain period of time after adoption, they are explicitly rejected by a specified number of Contracting Parties representing a certain percentage of the gross tonnage of the world's merchant fleet. IMO treaties and amendments to them are normally adopted by consensus.

The degree of implementation of IMO rules also tends to vary depending on the interpretation given by States Parties to UNCLOS to the expressions found in the Convention, such as "give effect to", "implement", "conform to" or "take account of", in respect of IMO rules and standards. States Parties should, in each case, assess the context of the UNCLOS provisions establishing obligations in this regard and the specific IMO treaty and corresponding rules and standards referred to in UNCLOS.

In this regard, States Parties to UNCLOS should ensure that ships flying their flag or foreign ships under their jurisdiction apply generally accepted IMO rules and standards regarding safety and prevention and control of pollution. Non-compliance with these IMO provisions would result in sub-standard ships and violate the basic obligations set forth in UNCLOS concerning safety of navigation and prevention of pollution from ships.

The application by States Parties to UNCLOS of IMO rules and standards should also be seen as an incentive for them to become Parties to the IMO treaties containing those rules and standards. As Parties to those treaties, they would receive specific entitlements in accordance with specific treaty law provisions in each case. Paramount among them would be the value accorded by States Parties in IMO treaties to the certificates issued pursuant to those instruments. Also important would be the right of States Parties to participate in any action taken to amend the treaty.

The exercise of State jurisdiction in accordance with IMO instruments

While UNCLOS defines flag, coastal and port State jurisdiction, IMO instruments specify how State jurisdiction should be exercised so as to ensure compliance with safety and shipping anti-pollution regulations. The enforcement of these regulations is primarily the responsibility of the flag State. Nevertheless, one of the most important features reflecting the evolution of IMO's work in the last three decades is the progressive strengthening of port State jurisdiction with a view to correcting non-compliance with IMO rules and standards by foreign ships voluntarily in port. Voluntary access to port implies acceptance by the foreign ship of the port State's powers to exert corrective jurisdiction in order to ensure compliance with IMO regulations. The relationship between flag and port State jurisdiction will be further analysed in part II.

An important distinction of a general kind can nevertheless be advanced here: the exercise of port State jurisdiction to correct deficiencies in the implementation of rules and standards laid down in these treaties should be distinguished from the power of the port State to impose sanctions. In this regard, sanctions can be imposed in certain cases for violations occurring outside port State jurisdiction and committed by a foreign ship if the vessel is voluntarily in port. The distinction is especially important in the case of pollution damage. The power to impose sanctions conferred by IMO regulations on the port State (notably in the MARPOL Convention) should be related to the scope and characteristics of those jurisdictional powers as provided in part XII of UNCLOS.

In general, IMO treaties do not regulate the nature and extent of coastal State jurisdiction. In this regard, the degree to which coastal States may enforce IMO regulations in respect of foreign ships in innocent passage in their territorial waters or navigating the exclusive economic zone (EEZ) is provided by UNCLOS. The same principle applies to transit passage in straits used for international navigation or to archipelagic sea lane passage in archipelagic waters. (It should be noted that MARPOL includes provisions on monitoring and investigating illegal discharges of harmful substances into the marine environment.) The enforcement of routing measures adopted at IMO also relies primarily on the exercise of coastal State jurisdiction.

Coastal State jurisdiction has been regulated by two IMO instruments: the Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, and its Protocol Relating to Intervention on the High Seas in Cases of Pollution by Substances Other than Oil, 1973. These instruments specifically regulate the right of the coastal State to intervene on the high seas in the case of pollution casualties. The basic principles in these instruments are codified in article 221(1) of UNCLOS.

Maritime zones and the implementation of IMO regulations

States Parties to IMO treaties are under the obligation to exercise jurisdiction over ships flying their flag, irrespective of the maritime zone where the ships may be. The differences in the rights and obligations of States in the various maritime zones do not change the obligations on flag States to implement safety and anti-pollution measures on board their vessels.

The existence of maritime zones is relevant, however, in determining the jurisdiction of a coastal State over foreign vessels. In this regard, IMO's general provisions on ships' routing should be interpreted in the context of the corresponding provisions of UNCLOS. The legal status of the different maritime zones has also been taken into account in the IMO Conventions establishing a regime on civil liability and compensation for oil pollution damage (the Civil Liability Convention 1992, the FUND Convention 1992, the 2003 Fund Protocol, the HNS Convention, 1996 and HNS Protocol 2010, the Bunker Oil Convention, 2001 and the Nairobi Wreck Removal Convention, 2007). In these conventions, the entitlement of States Parties to file claims for pollution damage depends on where the damage occurred, namely within their territory, the territorial sea, or within the EEZ.

PART II

RELATIONSHIP BETWEEN UNCLOS AND IMO INSTRUMENTS

This part comprises four chapters which deal with the following subjects:

- Safety of navigation
- Prevention and control of marine pollution
- Liability and compensation
- Technical co-operation and assistance for developing countries.

CHAPTER I – SAFETY OF NAVIGATION

1 GENERAL

Several provisions of UNCLOS provide the jurisdictional framework for the adoption and implementation of safety of navigation rules and standards. As mentioned in the introduction, IMO's global mandate to adopt international regulations in this regard is acknowledged whenever reference is made to the competent organization through which those regulations are adopted.

Enforcement of IMO regulations concerning construction, equipment, seaworthiness and manning of ships relies primarily on the exercise of flag State jurisdiction. Other areas such as signals, communications, prevention of collisions, ships' routing, and ship reporting involve the effective exercise of both flag and coastal State jurisdiction. Furthermore, several IMO instruments regulate the degree to which States may enforce corrective measures to ensure that foreign ships voluntarily in port comply with international safety regulations. However, such enforcement is limited to the conditions laid down in the main IMO safety conventions.

UNCLOS establishes the basic features relating to the exercise of flag State jurisdiction in the implementation of safety regulations. It also regulates the extent to which coastal States may legitimately interfere with navigation by foreign ships in different maritime zones for the purpose of ensuring proper compliance with safety regulations.

Flag State jurisdiction

The basic obligations imposed upon the flag State are contained in article 94 of UNCLOS, which requires flag States to take measures for ensuring safety at sea that conform to "generally accepted international regulations, procedures and practices" (article 94(3), (4) and (5)). The following IMO conventions may, on account of their worldwide acceptance, be deemed to fulfil the general acceptance requirement:

- International Convention for the Safety of Life at Sea, 1974 (SOLAS 1974);
- Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974 (SOLAS Protocol 1988);
- International Convention on Load Lines, 1966 (Load Lines 1966);
- Protocol of 1988 relating to the International Convention on Load Lines, 1966 (Load Lines Protocol 1988);
- International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE 1969);
- Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG 1972);
- International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW 1978); and
- International Convention on Maritime Search and Rescue (SAR 1979).

IMO resolution A.912(22), which supersedes and revokes resolution A.881(21), provides guidance to assist flag States in the self-assessment of their performance; Assembly resolution A.914(22) provides guidance on measures to further strengthen flag State implementation. Enforcement of IMO safety and anti-pollution provisions has been strengthened by the incorporation into SOLAS of the International Safe Management Code (ISM), under which companies operating ships are subject to a safe management system under the control of the administration of the flag State.

The basic obligations of the flag State in relation to safety of navigation are found in part VII of UNCLOS dealing with the high seas. Here, enforcement of international safety regulations relies primarily on the exercise of flag State jurisdiction, irrespective of where the ship is sailing.

IMO's Sub-Committee on Flag State Implementation (FSI) was set up in 1992 after the Maritime Safety Committee (MSC) recognized an urgent need to improve maritime safety through stricter and more uniform application of existing regulations following accidents such as those to the **Herald of Free Enterprise**, **Scandinavian Star**, **Doña Paz** and **Exxon Valdez**. Incidents such as those involving the **Erika** and the **Prestige** have reinforced the importance of the Sub-Committee's activities. Its primary objective is to identify the measures needed to ensure effective and consistent global instruments, including consideration of the special difficulties faced by developing countries. There is agreement in the Sub-Committee that the effectiveness of IMO safety and pollution-prevention instruments depends primarily on the application and enforcement of their requirements by States that are Parties to them, and that many had experienced difficulties in complying fully with the provisions of the instruments. To meet the primary objective, the Sub-Committee has been assigned the tasks of identifying the range of flag State obligations emanating from IMO treaty instruments, as well as those areas where flag States have difficulty in fully implementing IMO instruments. The Sub-Committee has also been requested to assess problems relating to actions taken by the States that are Parties to IMO instruments in their capacity as port States, coastal States and as countries training and certifying officers and crews.

Since its creation, the FSI Sub-Committee has produced important guidelines and recommendations. Some have been adopted as resolutions by the IMO Assembly, the MSC and the MEPC, others have taken the form of IMO circulars.

The IMO Voluntary Model Audit Scheme

At its twenty-third session held in November 2003, the IMO Assembly adopted, by resolution A.946(23), the Voluntary IMO Member State Audit Scheme. At its twenty-fourth session, held in November-December 2004, the Assembly adopted resolution A.974(24) on *Framework and Procedures for the Voluntary IMO Member State Audit Scheme*. Alongside the audit scheme framework and procedures, the Assembly adopted, by resolution A.973(24), a Code for the Implementation of Mandatory IMO Instruments, which provides the audit standard. Resolution A.973(24) revoked resolution A.847(20) entitled *Guidelines to Assist Flag States in the Implementation of IMO Instruments* which provided flag States with guidance to establish and maintain measures for the effective application and enforcement of the following IMO Conventions: SOLAS 1974, MARPOL, Load Lines, and STCW 1978.

The objective of the Scheme is to enhance the performance of Member States in implementing the IMO Conventions relating to maritime safety and the prevention of marine pollution. In particular, the Scheme addresses issues such as compliance with the *Code for the Implementation of Mandatory IMO Instruments*; enactment, administration and enforcement of laws and regulations; delegation of authority; control and monitoring of the execution of statutory responsibilities; discharge of other obligations and responsibilities by a Member State; capacity building and technical assistance; and the provision of appropriate feedback to the audited Member State and the Organization's membership at large, and into the work of the Organization.

A further resolution, on Future development of the Voluntary IMO Member State Audit Scheme, requests the MSC and the MEPC to review the future feasibility of including, within the scope of the Audit Scheme, maritime security-related matters and other functions not presently covered and also to identify any implications of broadening the scope of the audit scheme.

In response to the invitation to the IMO and other relevant competent international organizations, in the United Nations General Assembly resolutions 58/240 and 58/14, an inter-agency report has been prepared by senior representatives of international organizations, convened by IMO, on the role of the "genuine link" and the potential consequences of non-compliance with duties and obligations of flag States described in relevant international instruments. This report was submitted to the General Assembly at its sixty-first session. In resolution 61/222 (paragraph 73), the General Assembly took note of the report.

In its resolution 65/37 of 7 December 2010, the United Nations General Assembly recognized that international shipping rules and standards adopted by the IMO in respect of maritime safety, efficiency of navigation and the prevention and control of marine pollution, complemented by best practices of the shipping industry, had led to a significant reduction in maritime accidents and pollution incidents. The General Assembly, accordingly, encouraged all States to participate in the Voluntary Member State Audit Scheme (paragraph 124).

The IMO Assembly, at its twenty-fifth session held in November 2007, invited IMO Member States to nominate qualified auditors and encouraged IMO Member States that have not yet volunteered for audits to do so as and when they are ready and as early as possible. In the context of the further development of the Organization's Audit Scheme, the IMO Assembly, at its twenty-sixth session, endorsed the decision of the IMO Council for a phased-in introduction of the Audit Scheme as an institutionalized process through the inclusion of appropriate requirements in the IMO instruments; requested the Committees, as necessary, under the coordination of the Council, to take appropriate action to develop and establish the Audit Scheme in its institutionalized form within an established time frame; and requested the Council to report developments to the twenty-seventh regular session of the Assembly. As part of this process, the MSC has approved, subject to the MEPC's concurrent decision, the IMO instruments Implementation (iii) Code to become a mandatory instrument as well as the audit standard, after adoption by the Assembly and the entry into force of amendments to relevant IMO instruments. In this context, the Assembly, at its twenty-seventh session in November 2011, adopted resolution A.1054(27) on the Code for the Implementation of Mandatory IMO Instruments.

Coastal State jurisdiction

IMO treaty instruments do not attempt to regulate the jurisdictional power of the coastal State, which is a subject exclusively within the scope of UNCLOS. The Convention provides the enforcement framework for IMO instruments by establishing the degree to which coastal States may legitimately interfere with foreign ships in order to ensure compliance with IMO rules and standards.

Against this background, the following provisions of UNCLOS are relevant to the enforcement of IMO standards by coastal States:

- In its territorial sea, the coastal State may enact laws and regulations relating to innocent passage (article 21(1)), including with respect to safety of navigation and the regulation of maritime traffic (article 21(1)(a)). These laws and regulations must conform with the provisions of the Convention and "other rules of international law". They must also not apply to the design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules or standards. The adoption of the IMO conventions referred to above and their consequent incorporation into national legislation entitles coastal States to request that foreign ships in innocent passage through their territorial sea comply with the rules of these conventions, even if the flag State is not party to the relevant instrument.

- Pursuant to article 41(3), the sea lanes and traffic separation schemes which States bordering straits may designate or prescribe must conform to "generally accepted international regulations". On account of their wide acceptance, SOLAS, the General Provisions on Ships' Routeing and COLREG, should be considered as representing these "generally accepted international regulations". As in the case of the territorial sea, foreign ships exercising transit passage must comply with the laws and regulations which States bordering straits adopt, including those relating to safety of navigation and the regulation of maritime traffic and the prevention, reduction and control of pollution (article 42), even if their flag States are not Parties to the treaties containing these regulations. Furthermore, in order to protect bordering States' interests, UNCLOS has imposed on foreign ships in transit passage the obligation to comply with "generally accepted international regulations, procedures and practices for safety at sea, including the International Regulations for Preventing Collisions at Sea" (article 39(2)(a)). This expression seems to have a wider connotation in that it may cover also non-binding instruments. (It should also be noted that elements of search and rescue are encompassed within the terms of article 39.)
- In accordance with article 35(c), the provisions in the Convention concerning straits used for international navigation (part III) do not affect the legal regime in straits in which passage is regulated by the related long-standing international conventions in force and specifically relating to such straits. These conventions should, however, be implemented with reference to the criteria of compatibility established in article 311 of UNCLOS and referred to in the introductory part of this document.
- Article 54 of UNCLOS extends the application of the provisions of articles 39, 40, 42 and 44 on transit passage to archipelagic sea lanes passage.
- In accordance with article 58(2), provisions relating to the regime of the high seas apply in principle to the EEZ. As will be explained below, coastal States may adopt jurisdictional measures in connection with the implementation of routeing measures.

(See below for further relevant discussion under section 5 on "Ships' Routeing" and section 6 on "Ship Reporting".)

Port State jurisdiction

By contrast to coastal State jurisdiction, the most important IMO conventions include provisions which regulate port State jurisdiction and the extent to which such jurisdiction should be exercised. It should be noted that, within the context of the implementation of IMO instruments, port State jurisdiction is a concept of an essentially corrective kind: it aims to correct non-compliance or ineffective flag State enforcement of IMO regulations by foreign ships voluntarily in port and is an incentive for flag State compliance.

The exercise of port State jurisdiction for the purpose of correcting deficiencies in the implementation of safety of navigation rules is established in the main IMO safety conventions, namely, Load Lines 1966, 1988 Load Lines Protocol, TONNAGE 1969, SOLAS 1974, SOLAS Protocol 1988 and STCW 1978. These treaties regulate the right of the port State to verify the contents of certificates issued by the flag State attesting compliance with safety provisions. They also entitle the port State to inspect the ship if the certificates are not in order or if there are clear grounds to believe that the condition of the ship or of its equipment does not correspond substantially with the particulars of the certificates or if they are not properly maintained. SOLAS provides that the port State may check operational requirements when there are clear grounds for believing that the master or the crew is not familiar with essential shipboard procedure relating to the safety of the ship or procedures set out in the ship's safety management system.

STCW regulates the control of certificates by the authorities of port States that are Parties to that Convention, in order to ensure that seafarers serving on board are competent in accordance with the Convention. Measures similar to those referred to in Load Lines and SOLAS can be taken when there are clear grounds to believe that a certificate has been fraudulently obtained, or its holder has not been trained in accordance with the provisions of the Convention, or the ship is being operated in such a manner as to pose a danger to persons, property or the environment.

IMO Assembly resolutions A.787(19) and A.882(21) on *Procedures for Port State Control*, which are under revision, contain a comprehensive set of guidelines on port State control inspections, identification of contraventions and detention of ships. The procedures apply to ships which come under the provisions of SOLAS, Load Lines, STCW, TONNAGE and MARPOL. The resolutions also address special port State control issues relating to the ISM Code requirements.

2 CONSTRUCTION, EQUIPMENT AND SEAWORTHINESS OF SHIPS

General

Article 94(3)(a) of UNCLOS imposes upon flag States the obligation to ensure safety at sea on the high seas with regard to the construction, equipment and seaworthiness of ships. A further specification in relation to this obligation is provided in paragraph 4(a) of the same article, which indicates that measures to be taken by flag States must include those necessary to ensure "that each ship, before registration and thereafter at appropriate intervals, is surveyed by a qualified surveyor of ships, and has on board such charts, nautical publications and navigational equipment and instruments as are appropriate for the safe navigation of the ship". Paragraph 5 provides that in taking such measures "each State is required to conform to generally accepted international regulations, procedures and practices and to take any steps which may be necessary to secure their observance". This obligation also applies to the EEZ (article 58(2)). Article 217(2) of UNCLOS extends the scope of article 94(3) to the protection of the marine environment. It requires the flag State to ensure that its vessels are prohibited from sailing until they can proceed to sea in compliance with the requirements of international rules and standards with regard to design, construction and equipment of vessels.

UNCLOS provides in its article 21(2) that the coastal State must not impose on foreign ships in innocent passage through its territorial sea, laws and regulations applicable to the design, construction, and equipment of foreign ships "unless they are giving effect to generally accepted international rules or standards". This provision is of paramount importance for the implementation of IMO treaty instruments containing such rules and standards, because it sets a clear limit to the jurisdictional powers of the coastal State. Regulations imposing either additional or more stringent requirements than those regulated in such instruments could potentially violate the rules of innocent passage regulated by UNCLOS. Article 211(6)(c) provides that the additional laws and regulations which the coastal State can adopt for certain areas in the EEZ must not require foreign vessels to observe design, construction or equipment standards other than generally accepted international rules and standards.

The generally accepted international regulations, procedures and practices referred to in article 94(5) and the generally accepted international rules and/or standards referred to in article 21(2) are basically contained in the SOLAS and Load Lines Conventions. These rules and standards, together with the anti-pollution rules and standards contained in MARPOL (see chapter II below) are also the international rules and standards referred to in articles 211(6)(c), 217(2), and 219.

SOLAS 1974 and the SOLAS Protocol of 1988 regulate minimum standards for the construction, equipment and operation of ships, in regard to aspects such as subdivision and stability, machinery and electrical installations, fire protection, detection and extinction, life-saving appliances and arrangements and radiocommunication. The regulations provide for surveys of various types of ship (oil carriers, gas and chemical tankers, passenger ships, ro-ro ferries, etc.), the issue of documents certifying that the ships meet the required conditions, and the obligation to carry adequate

equipment and nautical publications. The Sub-Committee on Flag State Implementation is in the process of developing a Code for Recognized Organizations, as a mandatory instrument.

Load Lines 1966 and the Load Lines Protocol of 1988 determine the minimum freeboard to which a ship may be loaded, including the freeboard of tankers, taking into account the potential hazards present in different climate zones and seasons.

Fishing Vessel Safety

Construction and equipment requirements for the safety of fishing vessels are contained in the 1977 Torremolinos Convention as amended by the 1993 Torremolinos Protocol. Neither the Convention nor its Protocol has entered into force.

The Assembly, at its twenty-fifth session, adopted resolution A.1003(25) on the entry into force and implementation of the 1993 Torremolinos Protocol, which reiterates the need for Governments to consider ratifying, accepting, approving or acceding to the Torremolinos Protocol at the earliest possible opportunity, so that this international Convention covering fishing vessel safety can enter into force. The IMO Assembly remains convinced that the entry into force of the Torremolinos Protocol would make a significant contribution to maritime safety in general (and that of fishing vessels in particular) and also that the continuing and alarmingly high number of fishermen's lives and of fishing vessels reportedly lost every year could be substantially reduced by the global, uniform and effective implementation of the Protocol.

To this end, the MSC, at its eighty-ninth session, agreed to proceed with the adoption of a draft Agreement on the Implementation of the 1993 Torremolinos Protocol, which annexes the amendments to the Protocol, in order to facilitate the implementation of the requirements of the Protocol. The Council, at its one hundred and sixth session, held in June 2011, decided to convene a diplomatic conference in 2012, in South Africa, to adopt the draft Agreement.

Goal-based new ship construction standards

The IMO Assembly, at its twenty-third session, held in November 2003, decided to include the development of goal-based new ship construction standards ("GBS") in the IMO Strategic Plan to determine new hull construction standards for new ships which are currently largely under the responsibility of classification societies. The standards are intended to ensure that hull standards developed by classifications societies and other recognized organizations conform to the safety goals and functional requirements established by IMO.

Detailed technical work was initiated by the MSC at its seventy-eighth session, held in May 2004, and it was agreed to focus initially on the development of GBS for bulk carriers and oil tankers. In May 2010, the MSC, at its eighty-seventh session, adopted resolution MSC.287(87) on International goal-based ship construction standards for bulk carriers and oil tankers, together with the associated amendments to SOLAS chapter II-1, to make the above standards mandatory. The MSC also adopted resolution MSC.296(87) on Guidelines for verification of conformity with goal-based ship construction standards for bulk carriers and oil tankers and approved the timetable and schedule of activities for the implementation of the GBS verification scheme.

Having adopted the GBS-related instruments, the MSC agreed that work on GBS should continue, in particular with regard to the finalization of the draft Generic guidelines for developing goal-based standards and the specification of an acceptable safety level and the model to determine it. In this regard, in 2011, the Committee approved the Generic Guidelines for developing goal-based standards and endorsed that the safety level approach should be further developed as a high priority issue.

With regard to the implementation of the mandatory goal-based ship construction standards for bulk carriers and oil tankers, the MSC, noting that the number of GBS auditors nominated by Member Governments was not sufficient to allow for the proper selection and establishment of GBS Audit Teams, urged Member Governments and international organizations to submit further nominations for GBS auditors to the Secretariat as a matter of priority.

Other safety-related IMO instruments

In addition to these conventions, IMO has adopted numerous recommendations, guidelines, and codes concerning the construction, equipment, and seaworthiness of ships. As stated above, while not legally binding, some of these regulations have been widely implemented by the Member States. In the initial context of technical co-operation activities, the Organization developed a comprehensive set of safety regulations for non-convention ships (Global Reg), which are currently being further considered for testing and enhanced implementation.

"Black box" carriage requirements

Like the black boxes carried on aircraft, Voyage Data Recorders (VDRs) fitted in ships enable accident investigators to review the procedures and instructions pertaining at the moment before an incident and to help identify the cause of any accident. The regulations on VDRs are contained in the revised chapter V (Safety of Navigation) of SOLAS. These regulations require passenger ships and ships other than passenger ships of 3,000 gross tonnage and upwards built on or after 1 July 2002 to be fitted with VDRs. Amendments to chapter V, adopted by the MSC at its seventy-ninth session in December 2004, require ships constructed before 1 July 2002 to be fitted with a Simplified VDR.

The MSC, at its eighty-first session, adopted amendments to resolution A.861(20) on Performance standards for shipborne voyage data recorders and resolution MSC.163(78) on Performance standards for shipborne simplified voyage data recorders (S-VDRs).

AIS

The revised chapter V also makes it mandatory for certain ships to carry an automatic identification system (AIS). Regulation 19 of the chapter V of SOLAS – Carriage requirements for shipborne navigational systems and equipment – sets out navigational equipment to be carried on board ships, according to ship type. Under this regulation, an AIS should be capable of providing information about the ship automatically to other ships and to coastal authorities.

The same regulation requires an AIS to be fitted aboard all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size built on or after 1 July 2002. It also applies to ships engaged on international voyages constructed before 1 July 2002, according to the following timetable:

- passenger ships, not later than 1 July 2003;
- tankers, not later than the first survey for safety equipment on or after 1 July 2003;
- ships other than passenger ships and tankers, of 50,000 gross tonnage and upwards, not later than 1 July 2004;
- ships other than passenger ships and tankers, of 10,000 gross tonnage and upwards but less than 50,000 gross tonnage, not later than 1 July 2005;

- ships other than passenger ships and tankers, of 3,000 gross tonnage and upwards but less than 10,000 gross tonnage, not later than 1 July 2006; and
- ships other than passenger ships and tankers, of 300 gross tonnage and upwards but less than 3,000 gross tonnage, not later than 1 July 2007.

Ships not engaged on international voyages constructed before 1 July 2002, will have to fit an AIS not later than 1 July 2008. A flag State may exempt ships from carrying an AIS if they are to be taken permanently out of service within two years after the implementation date.

LRIT

SOLAS regulation V/19-1 on Long range identification and tracking (LRIT) of ships, adopted in 2006, established a multilateral agreement for sharing LRIT information amongst SOLAS Contracting Governments for security and search and rescue (SAR) purposes. SOLAS Contracting Governments might also request, receive and use LRIT information for safety and marine environment protection purposes.

The LRIT regulation also established the obligations of certain ships to transmit LRIT information and the rights of SOLAS Contracting Governments and of SAR services to receive LRIT information. SOLAS Contracting Governments are entitled to receive information about ships navigating within a distance not exceeding 1,000 nautical miles off their coast. It also allows SAR services of SOLAS Contracting Governments to request and receive LRIT information, free of any charges, in relation to search and rescue of persons in distress at sea or when an uncertainty or alert phase, as defined in the annex to the 1979 SAR Convention, might need to be declared or has been declared in relation to the ship in question or those on board.

The mandatory requirements apply to the following types of ships engaged in international voyages: passenger ships, including high-speed craft; cargo ships, including high-speed craft, of gross tonnage and upwards; and mobile offshore drilling units. The LRIT information required to be automatically transmitted includes the ship's identity, location (latitude and longitude) and date and time of position.

There is no interface between LRIT and AIS. One of the more important distinctions between LRIT and AIS, apart from the obvious one of range, is that, whereas AIS is a broadcast system, data derived through LRIT is only available to the recipients who are entitled to receive such information. Further, safeguards concerning the confidentiality of those data have been built into the regulatory provisions.

LRIT information is provided to SOLAS Contracting Governments and SAR services entitled to receive the information, upon request, through a system of National, Regional and Co-operative LRIT Data Centres (DCs), using, where necessary, the International LRIT Data Exchange (IDE) whose main function is to route LRIT information between DCs. More than 60 DCs are currently operating in the production environment of the LRIT system providing services to 94 SOLAS Contracting Governments, 10 non-metropolitan territories and two special administrative regions.

The IDE, one of the main components of the LRIT system, has been established, and is currently being operated, by the United States, on an interim basis. The MSC has agreed on the establishment of the IDE by the European Maritime Safety Agency (EMSA), in Lisbon, Portugal, and its transfer of operations is expected to be completed before the end of 2011.

Another main component of the LRIT system is the LRIT Data Distribution Plan (DDP), which was established and is operated by IMO. The DDP provides, in particular, information communicated to IMO by SOLAS Contracting Governments that regulates the functioning of the system. This includes, for example, the list of ports and port facilities located within the territory of each SOLAS Contracting Government, together with the associated geographical coordinates of points;

the list of SAR services entitled to request and receive LRIT information; the geographical areas of the internal waters and territorial sea of SOLAS Contracting Governments, defined in accordance with international law and the technical specifications for the DDP; and the geographical areas between the coast of the SOLAS Contracting Government concerned and a distance of 1,000 nautical miles from its coast and the geographical areas within which each SOLAS Contracting Government is seeking the provision of LRIT information as a coastal State.

The SOLAS regulation on LRIT does not create or affirm any new rights of States over ships beyond those existing in international law, particularly, UNCLOS, nor does it alter or affect the rights, jurisdiction, duties and obligations of States set out in UNCLOS. The geographical information so provided in the DDP does not imply any right or obligation of individual SOLAS Contracting Government other than for the sole purpose of complying with provisions of SOLAS regulation V/19-1. Their use by the LRIT system does not constitute any form of recognition or acceptance by the other SOLAS Contracting Governments.

In order to meet security or other concerns, Administrations are entitled, at any time, to decide that LRIT information about ships entitled to fly its flag shall not be provided to certain SOLAS Contracting Governments requesting LRIT information as a coastal State. The rights, duties and obligations, under international law, of the ships concerned shall not be prejudiced as a result of such decisions.

IMO has also established the Information Distribution Facility (IDF) for the provision of flag State LRIT information to security forces operating in waters of the Gulf of Aden and the western Indian Ocean to aid their work in the repression of piracy and armed robbery against ships. The use of the IDF has proved to be efficient and is helping security forces on building a more accurate picture of the ships operating in the area and deploy the available naval and military resources in a more effective and efficient way in order to enhance the protection of all shipping transiting the area.

The MSC has approved a considerable amount of LRIT-related documentation, such as resolutions, circulars, guidance and recommendations, including, inter alia, performance standards and functional requirements and technical specifications for the LRIT system.

The performance of the IDE and all DCs is being audited on an annual basis by the International Mobile Satellite Organization (IMSO), which has been appointed as the LRIT Coordinator.

Carriage requirements for shipborne navigational systems and equipment

Regulation V/19 also provides that an electronic chart display and information system (ECDIS) may be accepted as meeting its chart carriage requirements. The regulation requires all ships, irrespective of size, to carry nautical charts and nautical publications enabling them to plan and display the intended route and to plot and monitor positions throughout the voyage. The ship must also carry back-up arrangements if electronic charts are used either fully or partially.

High-Speed Craft Code 2000

The new International Code for High Speed Craft, 2000 entered into force on 1 July 2002. The Code is mandatory under SOLAS chapter X (Safety measures for high-speed craft). The original HSC Code was adopted by IMO in May 1994, but the rapid pace of development in this sector of shipping required an early revision of the Code. The original Code will continue to apply to existing high-speed craft, while the new text will apply to all HSC built on or after the date of entry into force. The changes incorporated in the new Code are intended to bring it into line with amendments to SOLAS and new recommendations that have been adopted in the past few years – for example, requirements covering public address systems and helicopter pick-up areas. Consequential amendments to SOLAS chapter X (Safety measures for high-speed craft) that refer to the new Code were also adopted.

The MSC, at its eighty-eighth session, approved draft amendments to the 2000 HSC Code concerning the testing of satellite EPIRBs on passenger craft, for consideration at its ninetieth session with a view to adoption.

Construction, fire protection, fire detection and fire extinguishment

SOLAS chapter II-2 includes fire safety requirements applicable to all or specified ship types and is amended routinely to keep the regulations up to date with the latest technologies and to incorporate lessons learned from maritime casualties. The same chapter makes mandatory the Fire Safety Systems (FSS) Code, which includes detailed specifications for fire safety systems. In this regard, the MSC, at its eighty-eighth session, approved draft amendments to chapters 5 to 8 of the FSS Code for consideration, with a view to adoption at its ninetieth session.

The MSC, at its eighty-eighth session, also adopted the new International Code for Application of Fire Test Procedures, 2010 (2010 FTP Code), by resolution MSC.307(88), which will become mandatory under SOLAS chapter II-2.

Elimination of sub-standard oil tankers

An MSC working group has developed a proposed list of measures designed to eliminate sub-standard ships, which the MSC has agreed to refer to the Organization's sub-committees and to the MEPC for general consideration. A revised accelerated phase-out scheme for single-hull tankers, was adopted by the MEPC at its fiftieth session.

Ships operating in Polar waters

In 2002, the MSC at its seventy-seventh session and the MEPC at its forty-eighth session, recognizing the need for recommendatory provisions applicable to ships operating in Arctic ice-covered waters in addition to the mandatory and recommendatory provisions contained in other IMO documents, approved guidelines for ships operating in Arctic ice-covered waters, which are set out in MSC/Circ.1056.

In 2009, the Assembly, at its twenty-sixth session, adopted the Guidelines for ships operating in Polar Waters, as defined in the Guidelines, and invited Governments concerned to take appropriate steps to give effect to it for ships constructed on or after 1 January 2011. In 2010, the MSC, at its eighty-seventh session, agreed that a mandatory Code should be developed to replace the existing voluntary guidelines.

The Sub-Committee on Ship Design and Equipment (DE) started developing a mandatory Code for ships operating in polar waters (Polar Code), when it met for its fifty-fourth session. It is intended that the Polar Code will supplement relevant instruments, including SOLAS and MARPOL, for ships operating in polar waters in order to address the risks that are specific to operations in polar waters, taking into account the extreme environmental conditions and the remoteness of operation. The Code will also address the possible impact of shipping operations on the environment in a comprehensive manner. Regarding the structure of the new Code, the DE Sub-Committee agreed to utilize a risk-based/goal-based approach, including the development of goals and functional requirements which would be accompanied by prescriptive provisions.

3 MANNING OF SHIPS AND TRAINING OF CREWS

As in the case of construction and equipment, UNCLOS provides, in article 94(3)(b), that every State must take the necessary measures to ensure safety at sea with regard to "the manning of ships, labour conditions and the training of crews, taking into account the applicable international instruments". Paragraph 4(b) specifies that such measures must ensure "that each ship is in the charge of a master and officers who possess appropriate qualifications, in particular in seamanship, navigation, communications and marine engineering, and that the crew is appropriate in qualification and numbers for the type, size, machinery and equipment of the ship". Paragraph 4(c) further requires "that the master, officers and, to the extent appropriate, the crew are fully conversant with and required to observe the applicable international regulations concerning the safety of life at sea, the prevention of collisions, the prevention, reduction and control of marine pollution, and the maintenance of communications by radio". Also in connection with these matters, paragraph 5 states that "each State is required to conform to generally accepted international regulations, procedures and practices and to take any steps which may be necessary to secure their observance". Article 217(2) of UNCLOS extends the scope of article 94(3) to protection of the marine environment. It requires the flag State to ensure that its vessels are prohibited from sailing until they can proceed to sea in compliance with the international rules and standards with regard to manning.

Article 21(2) of UNCLOS also provides that the coastal State cannot impose on foreign ships in innocent passage in its territorial sea, the laws and regulations applicable to manning "unless they are giving effect to generally acceptable international rules or standards". Article 211(6)(c) of UNCLOS provides that the additional laws and regulations which the coastal State may adopt for certain areas in the EEZ must not require foreign vessels to observe manning standards other than generally accepted international rules and standards.

SOLAS 1974 imposes a general obligation on flag States to ensure, for the purpose of safety of life at sea, the appropriate manning of the ship. Thus, ships must be provided with an appropriate certificate as evidence of the minimum required safe manning (see regulation V/14).

STCW 1978, as amended, contains a comprehensive set of international regulations with regard to training and certification of personnel. This Convention establishes minimum requirements for training, qualifications and seagoing service for masters and officers and for certain categories of ratings, such as those forming part of a navigational watch or engine-room watch on oil, chemical or liquefied gas tankers and passenger ships.

STCW 1978 was revised at the Conference of States Parties held in 1995. The amendments adopted on that occasion addressed the concerns that the STCW Convention was not being uniformly applied and did not impose any strict obligations on Parties regarding implementation; they also generally brought the STCW Convention up to date. One of the major features of the revision involved the adoption of a new STCW Code, to which the whole content of the technical regulations was transferred. Part A of the Code is mandatory, while part B is recommendatory. Further, enhanced procedures concerning the exercise of port State control under article X of the STCW 1978 Convention were developed. In addition, the Conference amended chapter I of the STCW Convention, entitled "General Provisions". Accordingly, States Parties must provide information to IMO concerning the implementation of the Convention's requirements. The MSC uses this information to identify Parties that are able to demonstrate that they have given full and complete effect to the Convention (*i.e.* the so-called IMO White List which was first issued by the MSC at its seventy-third session in December 2000 and supplemented at its seventy-fourth session in May 2001). The publication of this list marks the end of the first stage of a ground-breaking verification procedure in which, for the first time, IMO has been given a direct role in the implementation of one of its instruments. Finally, the amendments also provide for special conditions for the training and qualifications of personnel on board ro-ro passenger ships. The STCW Convention was further amended in 1997 to add training requirements for personnel on passenger ships other than ro-ro passenger ships, and in 1998 to add a requirement for masters and

deck officers to be capable of detecting damage and corrosion in cargo spaces and ballast tanks. A separate conference running concurrently with the 1995 STCW Conference adopted a new International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel. This Convention represents the first attempt to make safety standards mandatory for the crews of fishing vessels. The Convention will enter into force in September 2012.

In November 1999, the IMO Assembly adopted resolution A.892(21) on *Unlawful Practices Associated with Certificates of Competency and Endorsements*. This resolution was intended to highlight the problem of fraudulent certificates issued in relation to the STCW Convention, and to encourage Member States to take action to eliminate the circulation of such certificates. Research was conducted on behalf of IMO to assess the scope of the problem and to identify possible solutions. The results of this research were brought to the attention of the MSC and considered in more detail by the Sub-Committee on Standards of Training and Watchkeeping (STW). In January 2002, the Sub-Committee developed a list of actions to be undertaken by the Secretariat on unlawful practices associated with certificates of competence. In 2004, the Sub-Committee completed all the actions identified by the Sub-Committee. However, it has still to develop a harmonized format for ancillary certificates providing evidence leading to the award of the certificate of competence. Furthermore, it has yet to develop appropriate anti-fraud training for the personnel responsible for verification based on the established standards for anti-fraud guidelines.

Also in November 1999, the IMO Assembly adopted a new resolution A.890(21) on *Principles of Safe Manning*, which updates and supersedes the resolution on the same subject from 1981 (resolution A.481(XII)). The new resolution is intended to take into account recent developments in the shipping industry, including increased reliance on automated systems and labour-saving devices, and the concern regarding fatigue and other human-element aspects of crew performance. The resolution includes basic principles to be applied in considering the manning levels necessary for safe operation of the ship.

Each ship should be issued with a "minimum safe manning document", specifying the minimum safe manning levels for that particular ship. The document can then be produced for inspection during port State control.

The resolution includes detailed guidelines for the application of safe manning principles and guidance on the contents of the minimum safe manning document, as well as a model format. Annex I on Principles on Manning and Annex II on Guidelines for the Application of Principles on Manning were amended by Assembly resolution A.955(23). This resolution was revoked by resolution A.1047(27) at the Assembly's twenty-seventh session.

The MSC, at its eighty-first session in 2006, adopted amendments to Part A of the STCW Code. The amendments add new minimum mandatory training and certification requirements for persons to be designated as ship security officers (SSOs). The amendments to the STCW Convention and to parts A and B of the STCW Code include *Requirements for the issue of certificates of proficiency for Ship Security Officers; Specifications of minimum standards of proficiency for ship security officers; and Guidance regarding training for Ship Security Officers*.

Further amendments to part A of the STCW Code add additional training requirements for the launching and recovery of fast rescue boats. The amendments have been prepared in response to reports of injuries to seafarers in numerous incidents involving the launching and recovery of fast rescue boats in adverse weather conditions. The STCW amendments entered into force on 1 January 2008.

Bearing in mind that more than 10 years had elapsed since its last major revision, the MSC, in 2007, agreed to undertake a comprehensive review of the STCW Convention so as to take into account new and innovative training methodologies, including the use of simulators for training, e-learning, and training related to cargoes of liquefied natural gas, liquefied petroleum gas, oil and chemicals carried by tankers, to ensure that it meets the new challenges facing the shipping

industry today and in the years to come. The review was completed in 2010. The 2010 Conference of Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, held in Manila, the Philippines, from 21 to 25 June 2010, adopted, by resolutions 1 and 2, amendments to the annex to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978; and to the Seafarers' Training, Certification and Watchkeeping Code.

The amendments, to be known as "The Manila amendments to the STCW Convention and Code", are set to enter into force on 1 January 2012 under the tacit acceptance procedure and are aimed at bringing the Convention and Code up to date with developments since they were initially adopted in 1978 and further revised in 1995; to enable them to address issues that are anticipated to emerge in the foreseeable future, and to ensure that the training of seafarers keeps up with modern technology.

4 SIGNALS, COMMUNICATIONS AND PREVENTION OF COLLISIONS

To ensure safety on the high seas and in the EEZ, the flag State, in its exercise of jurisdiction, must take such measures as are necessary regarding "the use of signals, the maintenance of communications and the prevention of collisions" (articles 94(3)(c) and 58(2)). These measures must conform to "generally accepted international regulations, procedures and practices", and each State is required to take the necessary steps to secure their observance (article 94(5)). A broad range of standards concerning signals, communications and prevention of collisions has been developed by the MSC and approved by the relevant bodies within the framework of treaty instruments or recommendations. The following paragraphs refer to the provisions of IMO instruments which relate to the subject matter mentioned in article 94(3)(c) of UNCLOS.

Rules on signals

Rules and regulations on signals are found in SOLAS 1974 and COLREG 1972. Under SOLAS regulation V/21, all ships that are required to carry radio installations shall carry the International Code of Signals. Any other ship which, in the opinion of the Administration, has a need to use it, shall carry it as well. This Code was adopted by the fourth session of the IMO Assembly in 1965, and has since been amended by the MSC on a number of occasions.

Regulations on communications

Rules on communications for safety purposes are contained in chapter IV of SOLAS 1974, which deals with the provision of radio communication services by Contracting Governments and provides for the keeping of equipment on board ships for distress and safety purposes as well as for general radio communications. The specific technical requirements of radio equipment used for these purposes are defined in the Radio Regulations of the International Telecommunication Union. As a result of amendments to Chapter IV which were adopted in 1988, with a phase-in period to 1999, the Global Maritime Distress and Safety System (GMDSS) became fully effective on 1 February 1999. GMDSS is a worldwide satellite-based network of automated emergency communications for ships at sea. (In part, GMDSS provides for the implementation of article 39(3) of UNCLOS, since one of the key components of this system is the use of international distress radio frequencies by ships, aircraft, and shore-based rescue co-ordination centres.)

The MSC, at its eighty-third session in 2007, adopted an amendment to SOLAS chapter IV, to add a new regulation 4-1 on Global Maritime Distress and Safety System (GMDSS) satellite providers. The new regulation provides for the MSC to determine the criteria, procedures and arrangements for the evaluation, recognition, review and oversight of the provision of mobile satellite communication services in the GMDSS. The amendment entered into force on 1 July 2009.

The MSC also had approved the related draft revised *Criteria for the provision of mobile-satellite communication systems in the GMDSS*, which was adopted by the IMO Assembly at its twenty-fifth session in 2007.

Rules on communications are also contained in chapter V of SOLAS, as amended, particularly in regulations 31 and 32 concerning danger messages and in regulation V/9 concerning meteorological services.

At its twenty-second session in November 2001, the Assembly adopted resolution A.918(22) on *Standard Marine Communication Phrases*.

Regulations for the prevention of collisions at sea

Regulations for the prevention of collisions at sea are found in COLREG 1972, which deals with steering and sailing rules, lights and shapes, and sound and light signals. COLREG also regulates the behaviour of ships operating in or near traffic separation schemes. Within the general framework established by the provisions of UNCLOS, COLREG applies to the high seas, the EEZ, the territorial sea, archipelagic waters, straits used for international navigation and archipelagic sea lanes. Rule 1(a) of COLREG provides that the rules apply to "all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels".

At its twenty-second session, the Assembly adopted resolution A.910(22) by which it adopted amendments to COLREG. The amendments concern:

- whistles and sound signals (Rules 33 and 35);
- action to avoid collision (Rule 8(a)) – to make it clear that any action to avoid collision should be taken in accordance with the relevant rules in the COLREGs;
- amendments with respect to high-speed craft (relating to the vertical separation of masthead lights); and
- amendments in relation to Wing-In-Ground (WIG) craft, including a rule that WIG craft should keep well clear of all other vessels and another rule that WIG craft should exhibit a high-intensity all-round flashing red light when taking off, landing and in-flight near the surface.

UNCLOS requires foreign ships to comply with these regulations while navigating in the territorial sea, in straits used for international navigation, and in archipelagic waters. In this regard the Convention provides that "generally accepted international regulations relating to the prevention of collisions at sea" shall also apply to foreign ships exercising the right of innocent passage through the territorial sea and archipelagic waters (articles 21(4) and 52(1)). In accordance with article 39(2)(a) and article 54, ships exercising the right of transit passage in straits used for international navigation or the right of archipelagic sea lanes passage must comply with the International Regulations for Preventing Collisions at Sea.

At its twenty-fifth session, the IMO Assembly adopted resolution A.1004(25) by which it adopted amendments to COLREG concerning distress signals (Annex IV)

5 SHIPS' ROUTEING

Territorial sea

In accordance with UNCLOS, article 22, the coastal State may:

- designate sea lanes and prescribe sea lanes and traffic separation schemes to regulate the innocent passage of ships through its territorial sea, where necessary having regard to the safety of navigation (article 22(1));
- require tankers, nuclear powered ships and ships carrying nuclear or other inherently dangerous or noxious substances or materials to confine their passage to such sea lanes (article 22(2)).

In accordance with article 22(3)(a), coastal States must, in the designation of sea lanes and the prescription of traffic separation schemes, "take into account", inter alia, "the recommendations of the competent international organization" (IMO). In the case of sea lanes, the relevant IMO provisions are contained in SOLAS regulation V/10 and the IMO General Provisions on Ships' Routeing adopted by resolution A.572(14), as amended, of the IMO Assembly. Provisions on traffic separation schemes are contained in COLREG, rules 1(d) and 10. (In November 1997, the IMO Assembly adopted resolution A.858(20) by which it delegated to the MSC the function of adopting traffic separation schemes and routeing measures other than traffic separation schemes, including the designation and substitution of archipelagic sea lanes.)

SOLAS regulation V/10 states that "all adopted ships' routeing systems and actions taken to enforce compliance with those systems shall be consistent with international law, including the relevant provisions of the 1982 United Nations Convention on the Law of the Sea". Bearing in mind the terms of article 22(3)(a) of UNCLOS, regulation V/10 establishes that ships' routeing systems "are recommended for use by, and may be made mandatory for, all ships, certain categories of ships or ships carrying certain cargoes, when adopted and implemented in accordance with the guidelines and criteria developed by the Organization" (IMO). These provisions of UNCLOS and SOLAS and the classes of ships referred to in article 22(2) of UNCLOS are relevant in connection with the work undertaken by IMO and the International Atomic Energy Agency (IAEA) to review the conditions of transport by sea of radioactive material from a safety point of view.

SOLAS regulation V/10.3 acknowledges that the initiation of action for establishing a ships' routeing system is the responsibility of the government(s) concerned, which should take into account the guidelines and criteria developed by IMO.

Rules 1(d) and 10 of COLREG define, respectively, the competence of IMO to adopt TSS and the main technical regulations to be followed in this regard. These regulations effectively institute restrictions on navigation in order to ensure safety.

The IMO General Provisions on Ships' Routeing contain conditions for the adoption of routeing measures applicable not only to the territorial sea but also to the EEZ, straits and archipelagic waters. In accordance with paragraph 3.4 of the Guidelines,

"IMO shall not adopt or amend any routeing system without the agreement of the interested coastal State, where that system may affect:

- .1 their rights and practices in respect of the exploitation of living and mineral resources;

- .2 the environment, traffic pattern or established routeing systems in the waters concerned;
- .3 demands for improvements or adjustments in the navigational aids or hydrographic surveys in the waters concerned."

In direct reference to the case of a territorial sea (paragraphs 3.14 to 3.16), paragraph 3.16 recommends that Governments establishing routeing systems, "no parts of which lie beyond their territorial seas (3.14), should design them in accordance with the criteria established by IMO and submit them to IMO for adoption. Paragraphs 3.15 and 3.16 apply to cases where, for whatever reason", a Government decides not to submit a routeing system to IMO. In such cases Governments should, in promulgating the routeing system to mariners, ensure that there are clear indications on charts and in nautical publications as to what rules apply. Article 22(4) of UNCLOS obliges coastal States clearly to indicate sea lanes and traffic separation schemes on charts to which due publicity must be given.

Straits used for international navigation

In the same way as the coastal State has authority within the territorial sea, UNCLOS provides that States bordering straits are entitled to designate sea lanes and traffic separation schemes or, as appropriate, substitute them in order to promote the safe passage of ships in straits used for international navigation (article 41(1) and (2)). Whereas, in the case of the territorial sea, coastal States are simply required to "take into account" the recommendations of IMO, the implementation of these regulations is made mandatory in the case of States bordering straits. In accordance with the Convention, sea lanes and traffic separation schemes in straits used for international navigation "shall conform to generally accepted international regulations" (article 41(3)). The IMO regulations to be considered in this regard are contained in SOLAS (regulation V/10), for routeing measures other than TSS, COLREG 1972 (rules 1(d) and 10), for TSS, and the *IMO General Provisions on Ships' Routeing* contained in resolution A.572(14), as amended.

UNCLOS further establishes that States bordering straits must present the proposals for the designation of sea lanes and the prescription of TSS, and their substitution, to the competent international organization (IMO) with a view to their adoption (article 41(4)). States bordering straits may enforce TSS and regulations establishing sea lanes only after they have been formally adopted by IMO. However, IMO is empowered to adopt them only if agreed with the States bordering the straits (article 41(4)). Sea lanes and TSS established under article 41 are mandatory for ships in transit passage (article 41(7)).

Article 35(c) of UNCLOS establishes that its provisions on straits used for international navigation do not affect "the legal regime in straits in which passage is regulated in whole or in part by long-standing international conventions in force specifically relating to such straits". This provision should be borne in mind in connection with paragraph 10 of SOLAS regulation V/10:

"Nothing in this regulation nor its associated guidelines and criteria shall prejudice the rights and duties of Governments under international law or the legal regime of international straits."

With respect to sea lanes and traffic separation schemes through the waters of two or more States bordering straits, the States concerned are required to cooperate in formulating proposals in consultation with "the competent international organization" (IMO) (article 41(5)). SOLAS regulation V/10.5 requires States to formulate joint proposals on the basis of an agreement between them which would be disseminated to the Governments concerned. It is also worth emphasizing that in the case of straits which are excluded from the regime of transit passage by virtue of article 38 of UNCLOS, or straits which lie between a part of the high seas or an EEZ and the territorial sea of a foreign State, the regime of innocent passage applies (article 45).

Archipelagic waters

Article 53 of UNCLOS regulates the right of archipelagic States to establish sea lanes and TSS, and refer to the role of IMO in this connection:

- Archipelagic States may designate sea lanes suitable for the continuous and expeditious passage of foreign ships through their archipelagic waters and the adjacent territorial sea, and prescribe traffic separation schemes for the purpose of safety of navigation through narrow channels in such sea lanes (paragraphs 1 and 6).
- As in the case of transit passage in straits used for international navigation, sea lanes and TSS within archipelagic waters must conform to "generally accepted international regulations" (paragraph 8).
- Archipelagic States must submit the proposals – including those for substituting sea lanes and TSS – to the "competent international organization" (IMO) for adoption. Proposals may be adopted by IMO only upon agreement with the archipelagic State concerned. Only after adoption by IMO may sea lanes or TSS be designated, prescribed or substituted (paragraph 9).
- Clear indication of the sea lanes and TSS must be provided on charts, to which due publicity must be given (paragraph 10).
- Established sea lanes and traffic separation schemes must be respected by ships during passage through archipelagic sea lanes (paragraph 11).

In November 1997, the IMO Assembly adopted resolution A.858(20) by which it delegated to the MSC the function of adopting traffic separation schemes, and routeing measures other than traffic separation schemes, including the designation and substitution of archipelagic sea lanes. In 1998, the MSC adopted a partial system of archipelagic sea lanes based on a proposal by Indonesia (SN/Circ.200).

EEZ

UNCLOS has no provisions concerning the designation of sea lanes and TSS for the purpose of safety of navigation in the EEZ or on the high seas. Nevertheless, bearing in mind IMO's global mandate, the IMO General Provisions on Ships' Routeing (resolution A.572(14)) contain provisions which can be applied for the adoption of routeing measures beyond the territorial sea. In accordance with paragraph 3.8, a Government proposing a new routeing system or an amendment to an adopted routeing system "any part of which lies beyond its territorial sea should consult IMO so that such system may be adopted or amended by IMO for international use". This provision furthermore recommends that the interested Government should provide all relevant information including, as appropriate, the following additional information:

- .1 the reasons for excluding certain ships or classes of ship from using a routeing system or any part thereof;
- .2 any alternative routeing measures, if necessary, for ships or certain classes of ship which may be excluded from using a routeing system or parts thereof.

The General Provisions further establish that such a system, when adopted "shall not be amended or suspended before consultation with and agreement by IMO, unless local conditions and the urgency of the case require that earlier action be taken".

Bearing in mind the recommendation in paragraph 3.8 of the General Provisions that proposals for routing measures beyond the territorial sea should be adopted by IMO, any safety zone established in accordance with article 60(5) of UNCLOS which exceeds 500 metres must be submitted to IMO for adoption.

6 SHIP REPORTING

General principles for ship reporting systems and ship reporting requirements are contained in IMO resolution A.851(20). IMO resolution A.857(20) contains guidelines for establishing vessel traffic services (VTS), including guidelines on recruitment, qualifications and training of VTS operators.

During 1992 and 1993, the Legal Committee and an *ad hoc* informal working group reporting to the Committee considered legal issues regarding the adoption of mandatory ship reporting to VTS, bearing in mind the basic framework established by UNCLOS. These deliberations paved the way for the adoption of a new SOLAS regulation on mandatory ship reporting.

SOLAS regulation V/11 enables States to adopt and implement mandatory ship reporting in accordance with guidelines and criteria developed by IMO. The regulation makes it mandatory for ships entering areas covered by ship reporting systems to report to the coastal authorities giving details of sailing plans. Other information may also be required in the case of certain categories of ships and ships carrying certain cargoes. The regulation also provides that:

- All adopted ship reporting systems must be consistent with international law, including the relevant provisions of UNCLOS.
- IMO be recognized as the only international body for developing guidelines, criteria and regulations on an international level for ship reporting systems.
- The initiation of action to establish a ship reporting system must be the responsibility of the Governments concerned. They should, in principle, refer their proposals to the Organization. Governments which do not submit ship reporting systems for adoption by the Organization should, wherever possible, try to conform with the guidelines and criteria developed by the Organization. Resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79), adopted by the MSC, contains such guidelines and criteria.
- The regulation and its associated guidelines and criteria must not prejudice the rights and duties of Governments under international law, or the legal regime of international straits.

Bearing in mind the specific nature and features of VTS, regulation V/11.10 adds that the participation of ships in accordance with the provisions of adopted ship reporting systems is free of charge to the ships concerned.

SOLAS regulation V/12 deals with vessel traffic services and provides that the use of a VTS may only be made mandatory in sea areas within the territorial sea of a coastal State.

In November 1997, the IMO Assembly adopted resolution A.858(20), by which it delegated to the MSC the function of adopting ship reporting systems. The MSC established criteria for ship reporting systems in resolution MSC.43(64), as amended by resolutions MSC.111(73) and MSC.189(79).

7 PASSENGER SHIPS

In 2006, the MSC adopted a large package of amendments to SOLAS, which were developed as a result of a comprehensive review of passenger ship safety initiated in 2000 with the aim of assessing whether the current regulations were adequate, in particular for the large passenger ships being built.

The amendments include new concepts such as the incorporation of criteria for the casualty threshold (the amount of damage a ship is able to withstand, according to the design basis, and still safely return to port) into SOLAS chapters II-1 and II-2. The amendments also provide regulatory flexibility so that ship designers can meet any safety challenges the future may bring.

The amendments entered into force on 1 July 2010. Since the adoption of the above-mentioned amendments, the MSC, at its eighty-seventh session, approved a number of unified interpretations to facilitate the uniform implementation. Additional work is also underway within several of the IMO technical bodies to address issues related to damage stability, escape, lifesaving appliances and fire safety systems.

In addition to the aforementioned developments on safety of passenger ships, IMO has adopted two treaties on liability and compensation in connection with passenger claims. The 1974 Athens Convention relating to the Carriage of Passengers and their Luggage by Sea establishes limits of liability for claims such as death and injury and loss or damage to passenger's property (luggage and vehicles). The 2002 Protocol to the 1974 Convention (not yet in force) significantly increases these limits and also introduces strict liability and compulsory insurance in connection with passenger claims.

The Legal Committee, at its ninety-second session in October 2006, adopted the text of a reservation, intended for use as a standard reservation, to the 2002 Protocol and adopted *Guidelines for the implementation of the Athens Convention, to allow limitation of liability in respect of claims relating to war or terrorism* which aims to put States in a position to ratify the 2002 Protocol and thereby afford passengers better cover.

8 NUCLEAR-POWERED SHIPS AND SHIPS CARRYING DANGEROUS CARGO

Article 22(2) of UNCLOS empowers coastal States to confine the passage of foreign nuclear-powered ships and ships carrying dangerous cargoes in the territorial sea to the sea lanes, which, in accordance with paragraph 1 of the same article, these States are entitled to establish in respect of ships exercising the right of innocent passage.

The basic precautionary requirements regarding ships' cargo and structure contained in article 22(1) and (2) are complemented by article 23, which specifically addresses the case of foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances. According to article 23, those ships have a duty, in exercising the right of innocent passage through the territorial sea, to carry the documents and observe the precautionary measures stipulated in "international agreements". Undoubtedly SOLAS is one of these international agreements, in particular its chapter VIII dealing with nuclear ships and chapter VII, which governs the carriage of dangerous goods.

Nuclear ships

According to regulation VIII/10 of SOLAS, a certificate shall be issued to a nuclear ship which complies with the requirements of this Convention. Chapter VIII is supplemented by the Code of Safety for Nuclear Merchant Ships and the Safety Recommendations on the Use of Ports by Nuclear Merchant Ships.

In view of the risk posed by nuclear merchant ships, SOLAS regulation VIII/11 introduces special control measures. In addition to the general powers of control conferred upon port States by regulation I/19, regulation VIII/11 provides that nuclear ships "shall be subject to special control before entering the ports and in the ports of Contracting Governments, directed towards verifying that there is on board a valid Nuclear Ship Safety Certificate and that there are no unreasonable radiation or other hazards at sea or in port, to the crew, passengers or public, or to the waterways or food or water resources". Accordingly, port States are authorized to enforce control measures in respect of foreign vessels in innocent passage through the territorial sea provided these vessels have clearly shown their intention to enter port.

Dangerous goods

Ships carrying dangerous cargo are subject to chapter VII of SOLAS, which regulates safety measures, including safe packaging and stowage, applicable to the carriage of dangerous goods by sea. This chapter is supplemented by several IMO codes, namely:

- the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), made mandatory under SOLAS chapter VII and MARPOL 73/78;
- the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) (regulation VII/13), made mandatory under SOLAS regulation VII/13;
- the International Maritime Dangerous Goods Code (IMDG Code), made mandatory under SOLAS chapter VII, contains a consistent set of regulations for the transport of dangerous goods by sea. The Code covers such matters as packing, container traffic and stowage, with particular reference to the segregation of incompatible substances. Some sections of the code were made mandatory as from January 2004;
- the Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes in Flasks on Board Ships (INF Code), made mandatory under SOLAS chapter VII, applies, in addition to SOLAS and IMDG regulations, to all ships carrying certain high-level radioactive material.
- the International Maritime Solid Bulk Cargoes Code (IMSBC Code), and amendments to SOLAS chapter VI, aim to facilitate the safe stowage and shipment of solid bulk cargoes by providing information on the dangers associated with the shipment of certain types of cargo and instructions on the appropriate procedures to be adopted.

9 OFFSHORE INSTALLATIONS

UNCLOS establishes that in the territorial sea, the coastal State may adopt laws and regulations for the protection of facilities and installations in conformity with the Convention and "other rules of international law" (article 21(1)(b)).

The Convention (article 56(b)(i)) also establishes the jurisdiction of coastal States regarding the establishment and use of artificial islands, installations and structures. Article 60 of the Convention reaffirms the exclusive right and jurisdiction of coastal States regarding regulation of the construction, operation and use of offshore facilities. Paragraphs 3 to 7 of the same article address the implications of these activities for the freedom and safety of navigation and regulate the duties of the coastal State in this regard.

Due notice must be given of the construction of offshore facilities and permanent means for giving warning of their presence must be maintained (paragraph 3). The coastal State may, where necessary, establish reasonable safety zones around such artificial islands, installations and structures in which it may take appropriate measures to ensure the safety both of navigation and of the artificial islands, installations and structures (paragraph 4). In accordance with paragraph 7, offshore installations and safety zones around them may not be established where this may cause interference in the use of recognized sea lanes essential to international navigation.

The implications of the establishment of structures and installations in connection with routing systems and traffic separation schemes is considered in resolution A.572(14) on *General Provisions on Ships' Routing*, referred to above. Paragraph 3.10 of the resolution recommends that Governments ensure, as far as practicable, that oil rigs, platforms and other similar structures are not established within routing systems adopted by IMO or near their terminations. If the establishment of these installations cannot be avoided, the traffic separation scheme should be amended temporarily, in accordance with guidelines given in section 7 of the same resolution. In the case of the establishment of permanent installations within a traffic separation scheme, permanent amendments to the scheme should, if deemed necessary, be submitted to IMO for adoption. IMO resolution A.671(16) on safety zones and safety of navigation around offshore installations and structures recommends Governments to study the pattern of shipping traffic at an early stage, in order to assess potential interference with marine traffic passing close to or through resource exploration areas.

In accordance with article 60(3) of UNCLOS, any installations or structures which are abandoned or disused must be removed to ensure safety of navigation, taking into account any generally accepted international standards established in this regard by the competent international organization. Appropriate publicity must be given to the depth, position and dimensions of any installations or structures not entirely removed. IMO resolution A.672(16) on *Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone* defines the standards to be followed by the coastal State when making decisions regarding the removal of abandoned or disused installations and structures. Abandoned offshore installations should be removed, except in certain cases. A decision to allow an installation to remain, in whole or in part, on the seabed should take into account the circumstances described in the resolution. This instrument also incorporates and extends the requirement under article 60(3) of UNCLOS to provide "appropriate publicity" for the partial removal. According to resolution A.672(16), notification not only of partial removal but also of non-removal should be forwarded to IMO. IMO may establish that the publicity requirement takes into account the depth, position and dimension of the installations and structures not entirely removed, as provided in article 60(3) of UNCLOS. If the disposal is to be solved by dumping, article III(a)(ii) of the London Convention 1972 may apply. In this regard the Twenty-second Consultative Meeting of the London Convention, 1972, adopted the Specific Guidelines for Assessment of Platforms or other Man-made Structures at Sea, in 2000.

Article 60(4) of UNCLOS provides that States may, when necessary, establish reasonable safety zones around artificial islands, installations and structures "in which it may take appropriate measures to ensure the safety both of navigation and of the artificial islands installation and structures". Paragraph 5 of the same article establishes that the breadth of these safety zones should be determined by the coastal State, taking into account "applicable international standards". In principle this breadth must not exceed 500 metres, except as authorized by "generally accepted international standards" or as recommended by the "competent international organization" (IMO). In accordance with article 60(6), ships must respect those safety zones and comply with "generally accepted international standards" concerning navigation in the vicinity of offshore installations and safety zones.

IMO resolution A.671(16) recommends Governments to consider traffic patterns for the assessment of safety zones (recommendation 1(c)). The resolution has an annex containing specific guidelines for coastal and flag States, bearing in mind the requirement to give due notice of the construction of offshore structures and the extent of safety zones established in article 60(5) of the Convention. In this regard, the resolution recalls that coastal States are responsible for the dissemination of information concerning the location of offshore installations or structures and the breadth of safety zones around them. This dissemination should take the form of Notices to Mariners, radio warnings, lights and sound signals, etc. (Nos.1 and 4 of the annex). Permanent installations, structures or safety zones should be shown on all appropriate navigational charts (No.5 of the annex).

In addition, resolution A.671(16) provides international standards for vessels navigating in the vicinity of offshore installations or structures (No.2 of the annex), as referred to in by article 60(6) of UNCLOS. The resolution also calls on coastal States to take action against those responsible for infringement of the regulations on safety zones, or at least to notify flag States, giving detailed evidence of the infringement by their vessels.

In accordance with article 80 of UNCLOS, the provisions of article 60 apply *mutatis mutandis* to artificial islands, installation and structures on the continental shelf.

Mobile offshore units

In November 1999, the IMO Assembly adopted resolution A.891(21) on *Recommendations on Training of Personnel on Mobile Offshore Units (MOUs)*, which provides an international standard for the training of such personnel to ensure that levels of safety and protection of the marine environment are complementary to what is required under the STCW Convention. The resolution addresses all categories of personnel on MOUs, including the maritime crew, special personnel, and visitors.

In 2009, the IMO Assembly, at its twenty-sixth session, adopted resolution A.1023(26), the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code), for mobile offshore drilling units, the keels of which are laid or which are at a similar stage of construction on or after 1 January 2012, which supersedes the existing 1989 MODU Code, adopted by resolution A.649(16).

10 NAVIGATIONAL AIDS AND FACILITIES

As stated above, the coastal State has legislative jurisdiction over innocent passage through the territorial sea with regard to the protection of navigational aids and facilities and other facilities or installations (article 21(1)(b), UNCLOS). The laws and regulations adopted by the coastal State must conform to the provisions of UNCLOS and "other rules of international law", thereby becoming mandatory for all foreign ships (article 21(4), UNCLOS). The obligation of Contracting Governments to arrange for the establishment and operation of navigational aids is contained in SOLAS regulation V/13.

UNCLOS adopts a different approach to the establishment and maintenance of navigational and safety aids in the case of transit passage through straits used for international navigation: pursuant to article 43(a), user States and States bordering a strait should cooperate by agreement to establish and maintain in a strait any necessary navigational and safety aids or other improvements to assist international navigation. Whenever any routing measures are to be established in straits, paragraph 3.3 of the General Provisions on Ships' Routing requires that, in deciding whether or not to adopt a routing measure, IMO must consider whether the aids to navigation are adequate for the purpose of the system. Any action leading to the consideration and adoption of instruments of this kind should be taken by IMO as the competent international organization. Furthermore, the regulation in SOLAS V obliging Contracting Governments to arrange for the establishment and maintenance of such aids to navigation as they determine are

required (V/14) was revised and renumbered as V/13 in the amendments adopted by the MSC in 2000.

Through the adoption of the Singapore Statement on Enhancement of Safety, Security and Environmental Protection in the Straits of Malacca and Singapore on 6 September 2007, a new framework, in which the littoral States of the Straits of Malacca and Singapore (the Straits) can work together with the international maritime community to enhance navigational safety, security and environmental protection in the Straits, has been formally agreed. It includes a cooperative mechanism on safety of navigation and environmental protection to promote dialogue and facilitate close cooperation between the littoral States, user States, shipping industry and other stakeholders in line with article 43 of UNCLOS.

In its resolution 65/37 of 7 December 2010, the United Nations General Assembly emphasized the progress in regional cooperation, including the efforts of littoral States, on the enhancement of safety, security and environmental protection in the Straits of Malacca and Singapore, and the effective functioning of the Co-operative Mechanism and called upon States to give immediate attention to adopting, concluding and implementing cooperation agreements at the regional level (paragraph 101).

In November 1997, the IMO Assembly adopted resolution A.860(20) on *Maritime Policy for a Future Global Navigation Satellite System (GNSS)* and set out the requirements for such a system, including "control by an international civil organization". The system should provide ships with navigational position-fixing throughout the world for general navigation, including navigation in harbour entrances and approaches and other waters in which navigation is restricted. A revision to this policy was approved by the MSC at its seventy-third session as a draft Assembly resolution, which was later on submitted to the Assembly at its twenty-second session in 2001. Resolution A.915(22), which revoked resolution A.860(20), updated the user requirements for general navigation and positioning and introduced user requirements for non-general navigation and positioning.

11 RULES ON ASSISTANCE

Duty to render assistance

Under article 98 of UNCLOS, every State must require the master of a ship flying its flag, in so far as he can do so without danger to the ship, the crew, or the passengers, to:

- render assistance to any person found at sea in danger of being lost (paragraph 1(a));
- proceed to the rescue of persons in distress, when necessary (paragraph 1(b)); and
- after a collision, render assistance to the other ship, its crew and its passengers (paragraph 1(c)).

The obligations to render assistance and to proceed to the rescue of persons in distress is contained in two IMO treaty instruments. SOLAS stipulates the general obligation of the master of a ship to proceed, where necessary, with all speed to the assistance of a ship, aircraft, or survival craft in distress (regulation V/10, renumbered as V/33 in the amendments adopted in 2000). The 1989 International Convention on Salvage lays down in article 10, the duty of a ship's master to render assistance to any person at sea in danger of being lost. It further requires States Parties to adopt the necessary measures to enforce this duty.

Under articles 18(2) and 52 of UNCLOS, a ship exercising the right of innocent passage may stop and anchor in the territorial sea or archipelagic waters of another State if this is rendered necessary by *force majeure* or distress or for the purpose of rendering assistance to persons, ships or aircraft in danger or distress. The same holds true for ships exercising the right of innocent passage through certain straits used for international navigation pursuant to article 45(1). Ships exercising the right of transit passage through straits used for international navigation (article 39(1) (c)), or the right of archipelagic sea lanes passage (article 54), may carry out activities rendered necessary by *force majeure* or distress. It should be noted that article 39(3) of UNCLOS concerning the requirement for aircraft to monitor at all times the "appropriate international distress radio frequency" also has relevance to the search and rescue matters that fall within the competence of IMO, such as the Global Maritime Distress and Safety System (GMDSS).

Search and rescue services

UNCLOS requires coastal States to promote, through regional cooperation, the establishment, operation, and maintenance of a search and rescue service regarding safety on and over the sea (article 98(2)). SOLAS stipulates the obligation of the master of a ship to proceed, where necessary with all speed, to the assistance of a ship, aircraft, or survival craft in distress (regulation V/33). Furthermore, SOLAS regulation V/7 obliges States Parties to undertake the necessary arrangements for coast watching and the rescue of persons in distress around its coasts.

A specific legal framework for the obligations relating to search and rescue is established in the International Convention on Maritime Search and Rescue, 1979 (SAR). This Convention requires States Parties to establish services for search and rescue of persons in distress, although these are limited to the area around the coasts (rule 2.1.1). For this purpose, SAR includes regulations on the establishment of search and rescue regions within which the coastal State is responsible for the provision of search and rescue services. Parties to SAR are required to coordinate their search and rescue services with those of neighbouring States. Unless otherwise agreed between the States concerned, Parties should authorize immediate entry into their territorial sea or territory of rescue units of other Parties solely for the purpose of searching for the position of maritime casualties and rescuing the survivors of such casualties. In such cases the State requesting entry must transmit to the coastal State full details of the projected mission and the need for it (SAR chapters 3, 3.1.2 and 3.1.3). SAR regulation 2.1.7 contains a proviso of paramount importance: the delimitation of search and rescue regions "shall not prejudice the delimitation of any boundary between States".

Following the entry into force of the SAR Convention, the world's seas were divided into 13 SAR regions. In most of them, provisional SAR plans have been developed in line with the requirements of the Convention. At present, provisional SAR plans have still to be completed in the Western South Atlantic, Eastern North Pacific, Eastern South Pacific and Mediterranean and Black Seas regions. It should be noted that article 39(3) of UNCLOS concerning the requirement for aircraft to monitor the "appropriate international distress radio frequency" also has relevance to the search and rescue matters that fall within the competence of IMO, such as GMDSS.

In May 2004, the MSC agreed to establish an international Search and Rescue Fund as soon as possible to support the establishment and continued maintenance of regional Maritime Rescue Coordination Centres (MRCCs) and Maritime Rescue Sub-Centres (MRSCs) along the African coastlines.

Treatment of persons rescued at sea

At its twenty-second session held in 2001, the IMO Assembly adopted resolution A.920(22) on *Review of Safety Measures and Procedures for the Treatment of Persons Rescued at Sea*. The resolution requests IMO bodies to review all relevant IMO instruments to identify any existing

gaps, inconsistencies, ambiguities, vagueness or other inadequacies, so that appropriate action can be taken. Work in this area is continuing in cooperation and coordination with DOALOS, the United Nations High Commissioner for Refugees (UNHCR), the United Nations Office on Drugs and Crime (UNODC), the Office of the High Commissioner for Human Rights (OHCHR), the International Organization for Migration (IOM) and International Labour Organization (ILO) and various international organizations.

In response to resolution A.920(22), in May 2004, the MSC adopted amendments to the SOLAS and SAR Conventions concerning the treatment of persons rescued at sea, and/or asylum seekers, refugees and stowaways. The amendments, which entered into force on 1 July 2006, include:

- SOLAS – chapter V (*Safety of Navigation*) – to add a definition of search and rescue service; to set an obligation to provide assistance, regardless of nationality or status of persons in distress, and mandate coordination and cooperation between States to assist the ship's master in delivering persons rescued at sea to a place of safety; and to add a new regulation concerning master's discretion.
- SAR – Annex to the Convention – addition of a new paragraph to chapter 2 (*Organization and coordination*) relating to definition of persons in distress, new paragraphs to chapter 3 (*Cooperation between States*) relating to assistance to the master in delivering persons rescued at sea to a place of safety, and a new paragraph to chapter 4 (*Operating procedures*) relating to rescue coordination centres' initiation of the process of identifying the most appropriate places to disembark persons found in distress at sea.

The MSC also adopted the *Guidelines on the treatment of persons rescued at sea* with the aim of providing guidance regarding humanitarian obligations and obligations under the relevant international law.

Unsafe practices associated with trafficking of migrants by sea

IMO Assembly resolution A.867(20), on *Combating Unsafe Practices Associated with the Trafficking or Transport of Migrants by Sea*, notes with concern the incidents involving the loss of life resulting from the use of sub-standard ships for transport of migrants. The resolution invites governments to cooperate and increase their efforts in order to suppress and prevent these unsafe practices. Following the adoption of this resolution, the MSC approved MSC/Circ.896/Rev1 entitled "Interim measures for combating unsafe practices associated with the trafficking or transport of migrants by sea.

Reference may also be made in this regard to resolution A.773(18) on *Enhancement of Safety of Life at Sea by the Prevention and Suppression of Unsafe Practices Associated with Alien Smuggling by Ships*.

12 MARINE CASUALTY INVESTIGATIONS

Article 94(7) of UNCLOS provides that the flag State has the duty to conduct an investigation into every marine casualty or navigational incident on the high seas involving a ship flying its flag. This duty applies if the casualty has caused loss of life or serious personal injury to nationals of another State, or serious damage to ships or installations of another State, or to the marine environment. The investigation has to be conducted by, or before, suitably qualified persons. UNCLOS requires the flag State and the other State involved to cooperate in conducting the investigation. Provisions on penal jurisdiction in matters of collision or any other incident of navigation are contained in article 97 of UNCLOS. By virtue of article 58(2) of UNCLOS, articles 94(7) and 97 apply also to marine casualties in the EEZ.

Pursuant to article 97(1) of UNCLOS, in the event of a collision or any other incident of navigation concerning a ship on the high seas, no penal or disciplinary proceedings may be instituted against the master or of any other person in the service of the ship, except before the judicial or administrative authorities either of the flag State or of the State of which such person is a national. In addition, no arrest or detention of the ship can be ordered by any authorities other than those of the flag State. Article 97(2) provides that in disciplinary matters, "the State which has issued a master certificate or a certificate of competence or licence shall alone be competent, after due legal process, to pronounce the withdrawal of such certificates, even if the holder is not a national of the State which issued them". This provision should be considered when maritime administrations take decisions on withdrawal of certificates issued according to STCW.

The obligation of the flag State to conduct an investigation of any casualty occurring to any of its ships is contained in SOLAS regulation I/21, Load Lines, article 23, and MARPOL, article 12. However, these provisions regulate the duty to investigate only for the purpose of determining the need for any changes to each of these treaties, and accordingly include the requirement that Parties provide IMO with appropriate information. Resolutions A.849(20) and A.884(21) elaborate extensively on the duties provided in UNCLOS for States to cooperate in conducting an inquiry. Resolution A.849(20) notes that the relevant articles of UNCLOS reflect an established international determination to achieve greater investigative cooperation between States, and recommends States to implement the proposed procedures for the conduct of maritime investigations into maritime safety and/or environmental protection. These procedures are set out in the Code for the Investigation of Marine Casualties and Incidents, including the procedures for consultation, coordination, and cooperation in conducting an investigation between flag States and other States having a substantial interest in a maritime casualty. This Code was amended by resolution A.884(21) to include guidelines for the investigation of human factors in marine casualties and incidents.

The Long-Term Work Plan of IMO, recognizing the importance of maritime casualty investigation, includes items such as the role of the human element, casualty statistics and investigations, safe evacuation, and survival and recovery following maritime casualties.

In 2008, the MSC, at its eighty-fourth session, adopted a new Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (resolution MSC.255(84)), which has become mandatory under SOLAS. The new Code provides a common approach for States to adopt in the conduct of marine safety investigations into marine casualties and incidents and promotes cooperation among substantially interested States to contribute to the investigation. It requires a marine safety investigation to be conducted into every "very serious marine casualty". It recommends that a marine safety investigation be conducted into other marine casualties and incidents, by the flag State of any ship involved, if it is considered likely that an investigation would provide information that could be used to prevent future marine casualties and marine incidents. In this context, casualty investigation reports, received and processed through a dedicated module of the Global Integration Shipping Information System (GISIS), are reviewed and analyzed by dedicated bodies of the Organization.

Fair treatment of seafarers in the event of a maritime accident

The Legal Committee, at its ninety-first session in 2006, adopted the *Guidelines on fair treatment of seafarers in the event of a maritime accident*.

The Guidelines recommend that they be observed in all instances where seafarers may be detained by public authorities in the event of a maritime accident.

Given the global nature of the shipping industry and the different jurisdictions with which the seafarers may be brought into contact, they need special protection, especially in relation to contact with public authorities. The objective of the Guidelines is to ensure that seafarers are treated fairly following a maritime accident and during any investigation and detention by public authorities and that detention is for no longer than necessary.

The Guidelines give advice on steps to be taken by all those who may be involved following an incident: the port or coastal State, flag State, the seafarer's State, the shipowner and seafarers themselves. The emphasis is on cooperation and communication between those involved and in ensuring that no discriminatory or retaliatory measures are taken against seafarers because of their participation in investigations. All necessary measures should be taken to ensure the fair treatment of seafarers. The implementation of the Guidelines is being monitored by the Legal Committee.

In this context the Assembly, at its twenty-seventh session, adopted resolution A.1056(27) to promote compliance with the IMO/ILO Guidelines on fair treatment of seafarers in the event of a maritime accident.

In its resolution 65/37 of 7 December 2010, the General Assembly emphasized that "safety and security measures should be implemented with minimal negative effects on seafarers and fishers, especially in relation to their working conditions" (paragraph 75). In addition, the General Assembly called upon States to implement the Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident, which took effect on 1 January 2010 (paragraph 109).

13 ILLICIT ACTS

UNCLOS provides the legal framework for the repression and suppression of unlawful acts committed at sea in the various maritime zones. It also contains specific provisions to address piracy, illicit traffic in narcotic drugs or psychotropic substances, the slave trade and unauthorized broadcasting from the high seas.

Piracy

Articles 100 to 107 of UNCLOS reaffirm the duty and obligation of every State to cooperate in the repression of piracy. The definitions of piracy and pirate ship, the seizure of a pirate ship, and the liability for seizure are the main elements in these provisions. Articles 105 (on seizure of a pirate ship or aircraft), 110 (on the right of warships to visit a foreign ship on the high seas) and 111 (on the right of hot pursuit) provide a legal basis for responding to acts of piracy. This legal basis also applies to the EEZ by virtue of article 58(2).

Some areas of the oceans are still affected by a disturbing number of acts of piracy, giving rise to grave danger to life, severe navigational and environmental risks as well as negative impacts on international trade. In this connection and mindful of the duty of the States to cooperate in the repression of piracy as stipulated in article 100 of UNCLOS, IMO has adopted, among others, resolution A.738(18) on *Measures to Prevent and Suppress Piracy and Armed Robbery Against Ships*. The resolution empowers the MSC to keep this issue under continuous review, and it has accordingly been included in the Long-Term Work Plan. As a result, the IMO Secretariat circulates monthly reports on piracy and armed robbery against ships, and on stowaway cases and illegal migrants, and has constantly explored ways to address all forms of unlawful acts at sea. IMO, in cooperation with DOALOS and UNODC, is also actively promoting regional cooperation in combating piracy through a series of regional meetings and seminars. Additionally, Assembly resolution A.923(22) prescribes *Measures to Prevent the Registration of "Phantom" Ships*.

The IMO Assembly, at its twenty-fourth session in November-December 2005, adopted resolution A.979(24) on Piracy and armed robbery against ships in waters off the coast of Somalia. The resolution condemns and deplors all acts of piracy and armed robbery against ships and appeals to all Parties, which may be able to assist, to take action, within the provisions of international law, to ensure that all acts or attempted acts of piracy and armed robbery against ships are terminated forthwith; any plans for committing such acts are abandoned; and any hijacked ships are immediately and unconditionally released and that no harm is caused to seafarers serving in them.

Whilst the recommendations set out in resolution A.979(24) continue to be sound and relevant, a review of a number of incidents reported to the Organization appeared to suggest that not all Member States had acted pursuant to it. The Assembly reaffirmed its recommendations and raised, once more, the level of international awareness, especially in view of the risk to human life placed by the continual operation of pirates and armed robbers in the area under review by adopting resolution A.1002(25) on Piracy and armed robbery against ships in waters off the coast of Somalia. The new resolution requests the Transitional Federal Government of Somalia, the Council and the Secretary-General to take appropriate action within their remit; and, in particular, the MSC to undertake a comprehensive review of the existing guidance provided by the Organization for preventing and suppressing piracy and armed robbery against ships.

In its resolution 62/215 of 22 December 2007, the General Assembly expressed deep concern regarding the continuous violent attacks on ships off the coast of Somalia, and welcomed the initiatives supported by IMO and the World Food Programme to strengthen cooperation among States to protect ships, in particular those transporting humanitarian aid, from acts of piracy and armed robbery in that region. In addition, the General Assembly noted the adoption of resolution A.1002(25) on 29 November 2007 by the IMO Assembly and encouraged States to ensure its full implementation, and also noted the initiatives taken by the Secretary-General of IMO, following up on resolution A.979(24), to engage the international community in efforts to combat acts of piracy and armed robbery against ships sailing the waters off the coast of Somalia. The General Assembly has continued to consider these issues in the context of subsequent resolutions.

On 2 June 2008, the UN Security Council adopted resolution 1816 (2008). Under the terms of this resolution, the Security Council decided that, following receipt of a letter from the Transitional Federal Government (TFG) Somalia to the President of the UN Security Council, conveying the consent of the TFG, States cooperating with the TFG in the fight against piracy and armed robbery at sea would be allowed, for a period of six months, to enter the Somalia's territorial waters and use "all necessary means" to repress acts of piracy and armed robbery at sea. The Security Council renewed this authorisation for a period of twelve months in resolution 1846 (2008) and extended it to regional organizations. In resolution 1851 (2008), the Security Council authorized "States and regional organizations cooperating in the fight against piracy and armed robbery at sea off the coast of Somalia for which advance notification has been provided by the TFG to the Secretary-General may undertake all measures that are necessary in Somalia, for the purpose of suppressing acts of piracy and armed robbery at sea" for a period of twelve months. In resolutions 1897 (2009) and 1950 (2010), the Security Council extended both of these authorizations for further periods of twelve months respectively. Such measures must be consistent with the requirements set forth in these Security Council resolutions, as well as international law. These resolutions expressly state that they apply only to the situation in Somalia and should not be considered as establishing customary international law.

Security Council resolution 1816 (2008) was adopted with the consent of Somalia, which itself lacks the capacity to interdict pirates or patrol and secure its territorial waters. It follows a surge in attacks on ships in the waters off the country's coast, including hijackings of vessels operated by the World Food Programme (WFP) and other commercial vessels – all of which posed a threat "to the prompt, safe and effective delivery of food aid and other humanitarian assistance to the people of Somalia", and a grave danger to vessels, crews, passengers and cargo.

Affirming that the authorization provided in the resolution applies only to the situation in Somalia and shall not affect the rights and obligations under UNCLOS, nor be considered as establishing customary international law, the Security Council also requested cooperating States to ensure that anti-piracy activities or actions they undertake do not deny or impair the right of innocent passage to the ships of any third State.

While urging States, whose naval vessels and military aircraft operate on the high seas and airspace adjacent to the coast of Somalia to be vigilant, the Security Council encouraged States interested in the use of commercial routes off the coast of Somalia to increase and coordinate their efforts to deter attacks upon and hijacking of vessels, in cooperation with the TFG. All States were urged to cooperate with each other, with IMO and, as appropriate, with regional organizations, and to render assistance to vessels threatened by or under attack by pirates or armed robbers.

An IMO-led, high-level, subregional meeting for States from the Western Indian Ocean, the Gulf of Aden and Red Sea areas, held in Djibouti from 26 to 29 January 2009, developed a Code of conduct concerning the repression of piracy and armed robbery against ships in the Western Indian Ocean and Gulf of Aden area (the Djibouti Code of Conduct). To date, the Djibouti Code of Conduct has been signed by 18 States from the region and the Signatories agreed to co-operate, in a manner consistent with international law, in:

- .1 the investigation, arrest and prosecution of persons, who are reasonably suspected of having committed acts of piracy and armed robbery against ships, including those inciting or intentionally facilitating such acts;
- .2 the interdiction and seizure of suspect ships and property on board such ships;
- .3 the rescue of ships, persons and property subject to piracy and armed robbery and the facilitation of proper care, treatment and repatriation of seafarers, fishermen, other shipboard personnel and passengers subject to such acts, particularly those who have been subjected to violence; and
- .4 the conduct of shared operations – both among signatory States and with navies from countries outside the region – such as nominating law enforcement or other authorized officials to embark on patrol ships or aircraft of another signatory.

The Djibouti Code of Conduct provides for the sharing of piracy-related information, through a number of centres and national focal points using existing infrastructure and arrangements for ship-to-shore and shore-to-ship communications (i.e. the Regional Maritime Rescue Coordination Centre in Mombasa, Kenya and the Rescue Coordination Sub-Centre in Dar es Salaam, United Republic of Tanzania) and the regional maritime information centre, which is being established in Sana'a, Yemen.

The signatories also undertook to review their national legislation with a view to ensuring that there are laws in place to criminalize piracy and armed robbery against ships and to make adequate provision for the exercise of jurisdiction, conduct of investigations and prosecution of alleged offenders.

For the purposes of promoting full and effective implementation of the Djibouti Code of Conduct, a Project Implementation Unit was established within the IMO Secretariat, in April 2010, to coordinate and manage the execution of relevant capacity-building activities. The Unit and its activities are funded through the IMO Djibouti Code Trust Fund. Such activities will be carried out in cooperation with other entities concerned, including DOALOS, the European Commission, the regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia Information Sharing Centre (ReCAAP-ISC), the United Nations Political Office for Somalia (UNPOS), the United Nations Office on Drugs and Crime (UNODC) and the International Criminal Police Organization (Interpol).

Pursuant to the implementation of the Djibouti Code of Conduct, several regional meetings and capacity-building events were held. Furthermore, IMO funded, coordinated and participated in a series of meetings known as the "Kampala Process", aimed at promoting cooperation on countering piracy between the Transitional Federal Government of Somalia and the regions of "Puntland" and "Somaliland". DOALOS was invited to participate in two of these meetings to provide advice on the uniform and consistent application of UNCLOS and, in particular, the review and updating of Somalia's maritime zones legislation, including the establishment of an exclusive economic zone.

The Assembly of IMO, at its twenty-sixth session (November-December 2009) adopted resolution A.1025(26) on the Code of practice for investigation of crimes of piracy and armed robbery against ships which, inter alia, gave a new definition of armed robbery against ships, clarified the geographical scope for such acts and also included a reference to inciting and facilitating such acts, to align it with the definition of piracy in UNCLOS article 101.

At that same session, the Assembly of IMO also adopted resolution A.1026(26) on *Piracy and armed robbery against ships in waters off the coast of Somalia* which, as well as effectively extending the provisions of resolution A.1002(25) on *Piracy and armed robbery against ships operating in waters off the coast of Somalia*, resolution A.1026(26), inter alia, urges Governments to issue IMO recommendations and guidance including the industry-developed "Best Management Practices" (BMP) to ships; to broadcast advice and warnings of attacks to shipping; to advise ships to use the internationally recommended transit corridor; and to report attacks, investigate any such acts and to prosecute offenders. The Assembly, at its twenty-seventh session in 2011, adopted resolution A.1044(27) which revokes resolution A.1026(26). Although resolution A.1044(27) repeats several preambular and operative paragraphs of resolution A.1026(26), it aims at revising them to reflect developments since the Assembly at its twenty-sixth session and, at the same time, providing a framework for addressing new issues.

On 3 February 2011, the 2011 World Maritime day theme, Piracy: orchestrating the response, was officially launched at IMO Headquarters by the United Nations Secretary-General, along with the action plan the Organization had devised, in cooperation with industry and seafarer representative organizations, to help achieve the objectives set for the year, and beyond. The launch brought together representatives of Governments, through the diplomatic community; other UN entities (WFP and UNODC); naval and military forces; the industry; seafarers and other concerned entities and individuals – all of whom were united in condemning piracy and armed robbery at sea in all their forms.

Through the action plan, the Organization aims at maintaining and strengthening its focus on anti-piracy endeavours of all kinds and at facilitating a broader, global effort. That plan has six prime objectives for 2011 and beyond:

1. to increase pressure at the political level to secure the release of all hostages being held by pirates;
2. to review and improve the IMO guidelines to Administrations and seafarers and promote compliance with industry best management practices and the recommended preventive, evasive and defensive measures ships should follow;
3. to promote greater levels of support from, and coordination with, navies;
4. to promote anti-piracy coordination and cooperation procedures between and among States, regions, organizations and industry;

5. to assist States to build capacity in piracy-infested regions of the world, and elsewhere, to deter, interdict and bring to justice those who commit acts of piracy and armed robbery against ships; and
6. to provide care, during the post traumatic period, for those attacked or hijacked by pirates and for their families.

The Legal Committee, at its ninety-eighth session in April 2011, considered a number of documents which identify the key elements that may be included in national law to facilitate full implementation of international conventions applicable to deter piracy and related offences, in order to assist States in the uniform and consistent application of the provisions of these conventions. The documents had been submitted by the IMO Secretariat, DOALOS, UNODC and the Government of Ukraine. The Committee agreed that these documents might be useful to States which were either developing national legislation on piracy, or reviewing existing legislation on piracy. In this regard, the Secretariat issued those documents under cover of a Circular letter [No.3180].

On a separate matter, IMO, DOALOS and UNODC, in an effort to cooperate more effectively in addressing the problem of piracy, consolidated the material collected by each agency on piracy legislation which was made publicly available on the DOALOS website.

The MSC, at its eighty-ninth session, in May 2011, considered and made significant progress towards the pressing and complex issue of the employment of private armed security on board ships and the urgent need for guidance in this regard, and it approved both an MSC Circular on *Interim Guidance to shipowners, ship operators, and shipmasters on the use of privately contracted armed security personnel on board ships in the High Risk Area*, and Interim recommendations for flag States on the same matter.

IMO's position on the use of privately contracted armed security personnel remains fundamentally unchanged from that given in MSC.1/Circ.1333 on *Recommendations to Governments for preventing and suppressing piracy and armed robbery against ships* and MSC.1/Circ.1334 on *Guidance to shipowners and ship operators, shipmasters and crews on preventing and suppressing acts of piracy and armed robbery against ships*. As is made explicitly clear in MSC.1/Circ.1405, it is for each flag State, individually, to decide whether or not armed security personnel should be authorized for use on board ships flying their flag. If a flag State decides to permit this practice, it is up to that State to determine the conditions under which authorization will be granted. Furthermore, and as stated in the above Circulars, the interim recommendations "are not intended to endorse or institutionalize" the use of armed guards.

Illicit drug trafficking

Article 108 of UNCLOS imposes upon States the duty to cooperate in the suppression of illicit drug trafficking engaged in by ships on the high seas. Article 58(2) makes this obligation applicable to the EEZ. The problem of drug trafficking has been considered by IMO within the scope of the amendments introduced in 1990 to the 1965 Convention on Facilitation of International Maritime Traffic (FAL). The standards and recommended practices adopted by FAL are addressed to the public authorities of the Contracting Governments but are applicable only within the jurisdiction of the port State. Measures to suppress illicit traffic in narcotic drugs and psychotropic substances on the high seas and in the exclusive economic zone are addressed in article 108 of UNCLOS and article 17 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, 1988. Article 17 deals with cooperation among Parties under authorization of the flag State to search and board vessels engaged in such illicit traffic. It further provides that, if evidence of involvement in illicit traffic is found, appropriate action can be taken with respect to the vessel, persons, and cargo on board.

IMO Assembly resolution A.872(20) on *Guidelines for the Prevention and Suppression of the Smuggling of Drugs, Psychotropic Substances and Precursor Chemicals on Ships Engaged in International Maritime Traffic* was revised by the MSC at its eighty-second session.

Terrorism

A variety of acts of terrorism have also threatened the safety of ships and the security of their passengers and crews. IMO has addressed the request of the General Assembly of the United Nations to contribute to the progressive elimination of international terrorism. The Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, 1988 and the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf, 1988 (SUA Convention and Protocol) deal with unlawful acts that fall outside the crime of piracy as defined in article 101 of UNCLOS.

The main purpose of the original SUA Convention and Protocol is to ensure that appropriate action is taken against persons committing unlawful acts against ships and fixed platforms located on the Continental Shelf. The SUA Convention and Protocol list several offences, including the seizure of ships by force; acts of violence against persons on board ships; and the placing of devices on board a ship which are likely to destroy or damage it. It obliges Contracting Governments either to extradite or prosecute those alleged to have committed these offences.

The terrorist attacks of 11 September 2001 on the United States of America prompted a concerted response from IMO, reflected in IMO Assembly resolution A.924(22) on *Review of Measures and Procedures to Prevent Acts of Terrorism which Threaten the Security of Passengers and Crews and the Safety of Ships*. In this resolution, the Assembly requested the revision of legal and technical measures and considered new ones to prevent and suppress terrorism against ships and to improve security aboard and ashore, in order to reduce the risk to passengers, crews and port personnel on board ships and in port areas and to the vessels and their cargoes.

In response to resolution A.924(22), the Legal Committee of IMO undertook a comprehensive review of the SUA treaties. As a result of this review, an International Conference on the revision of the SUA Treaties was convened at IMO in October 2005, at which two Protocols amending the original Convention and Protocol were adopted, namely the 2005 Protocol to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, 2005 and the 2005 Protocol to the Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf.

The 2005 Protocols amend the original treaties by broadening the list of offences to include, for example, the offences of using a ship itself in a manner that causes death or serious injury or damage, transporting a biological, chemical or nuclear (BCN) weapon, knowing it to be such, and transporting any equipment, materials or software or related technology that significantly contributes to the design, manufacture or delivery of a BCN weapon, with the intention that it be used for such purpose. It is also an offence to unlawfully and intentionally transport a person on board a ship knowing that the person has committed an offence under the SUA Convention or an offence set forth in any of the conventions listed in the Annex. The 2005 Protocol to the SUA Convention introduces provisions for the boarding of a ship where there are reasonable grounds to suspect that the ship or a person on board the ship is, has been, or is about to be involved in, the commission of an offence under the SUA Convention. The Preamble to the 2005 Protocol to the SUA Convention recalls the importance of UNCLOS and of the customary international law of the sea.

In addition to the amendments to SUA treaties, a completely new regulatory safety regime designed to prevent ships and their cargoes becoming the targets of terrorist activities, was considered and adopted at a diplomatic conference in December 2002. The new measures are centred around a proposed International Ship and Port Facility Security Code, part of which has become mandatory through amendments to SOLAS 74. The Code provides the framework for

cooperation between governments, government agencies, local administrations and the shipping and port industries to detect security threats and take preventive measures against security incidents affecting ships or port facilities used in international trade.

The most far-reaching of these amendments consists in the introduction of a new SOLAS chapter XI-2 regulating implementation of the International Ship and Port Facility Security Code (ISPS Code). The Code contains detailed security-related requirements for governments, port authorities and shipping companies in a mandatory section (Part A), together with a series of guidelines on how to meet these requirements in a second, non-mandatory section (Part B). Maritime administrations are required to set security levels and ensure the provision of security-level information for ships entitled to fly their flag. Prior to entering a port, or while in a port within the territory of a Contracting Government, a ship shall comply with the requirements for the security level set by that Contracting Government if that security level is higher than the security level set by the Administration for that ship. The role of the master in exercising his professional judgement over decisions necessary to maintain the security of the ship is explicitly confirmed with the proviso that the master shall not be constrained by the company managing the ship, the charterer or any other person.

The new SOLAS regulations require all ships to be provided with a ship security alert system. When activated, the ship security alert system must initiate and transmit a ship-to-shore security alert to a competent authority designated by the Administration, identifying the ship and its location and indicating that the security of the ship is under threat or has been compromised. The system will not raise any alarm on board the ship. The ship security alert system must be capable of being activated from the navigation bridge and at least one other location.

The new regulations also cover requirements for port facilities, obliging Contracting Governments to ensure, inter alia, that port facility security assessments are carried out and that port facility security plans are developed, implemented and reviewed in accordance with the ISPS Code. Other regulations cover the provision of information to IMO, the control of ships in port, (including measures such as the delay, detention, restriction of operations – including movement within the port – or expulsion of a ship from port) and the specific responsibility of companies.

The amendments came into force on 1 July 2004.

In May 2004 the MSC approved a Circular on *Guidelines for the Implementation of SOLAS chapter XI-2 and the ISPS Code* which provides guidance on:

- security measures and procedures to be applied at the ship/port interface when either the ship or the port facility do not comply with the requirements of chapter XI-2 and of the ISPS Code;
- security measures and procedures to be applied by a ship which is required to comply with the requirements of chapter XI-2 and the ISPS Code, when it interfaces with an FPSO or an FSU; and
- implementation of the ISPS Code in relation to shipyards.

In 2006, the MSC approved Guidance on voluntary self-assessment by Administrations and for Ship Security (MSC.1/Circ.1193) and Interim Guidance for voluntary self-assessment by Companies and Company Security Officers for Ship Security (MSC.1/Circ.1217).

At its eighty-third session, the MSC began consideration of issues relating to the security aspects of the operation of ships which do not fall within the scope of SOLAS chapter XI-2 and the ISPS Code (including cargo ships of less than 500 gross tonnage which are engaged on international voyages). The Committee agreed that non-SOLAS vessels share the same operational environment as ships which fall within the scope of application of SOLAS chapter XI-2

and the ISPS Code and the operations of the former affect the security of the latter. Thus, it was necessary to address the security aspects of the operation of non-SOLAS ships in a systematic and analytical manner, so as to achieve a tangible enhancement of the global security net which the provisions of SOLAS chapter XI-2 and the ISPS Code were seeking to establish.

At the same session, the MSC also agreed that any guidelines to be developed on this subject should be non-mandatory, and that their application be kept under the purview of the individual Contracting Governments concerned. A correspondence group was established to undertake a study to determine the scope of the issues and threats involved and to develop recommendatory guidelines on measures to enhance maritime security to complement measures required by SOLAS chapter XI-2 and the ISPS Code, which could be utilized by Contracting Governments and/or administrations, at their own discretion.

Stowaways

Resolution A.871(20) of the IMO Assembly contains *Guidelines on the Allocation of Responsibilities to Seek the Successful Resolution of Stowaway Cases*. These guidelines acknowledge that legislation in this area is different from country to country, but establishes some basic common principles based on close cooperation between shipowners and port authorities. In this context, the Facilitation Committee, at its thirty-seventh session, adopted resolution FAL.11(37) on the *Revised guidelines on the prevention of access by stowaways and the allocation of responsibilities to seek the successful resolution of stowaway cases*.

CHAPTER II

PREVENTION AND CONTROL OF MARINE POLLUTION

GENERAL

Part XII of UNCLOS addresses the protection and preservation of the marine environment. Article 192 of UNCLOS provides for the general obligation for States to protect and preserve the marine environment. This obligation applies everywhere in the oceans. Article 194 further elaborates on the measures to be taken by States, individually or jointly as appropriate, consistent with UNCLOS, to prevent, reduce and control pollution of the marine environment from any source.

Article 1(4) of UNCLOS defines "pollution of the marine environment" as the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities. Article 1(5) reflects the definition of "dumping" set out in article III of the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

States are also required, pursuant to article 197, to cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with UNCLOS, for the protection and preservation of the marine environment. IMO is the competent international organization to adopt rules and standards relating to pollution from vessels and pollution by dumping.

Several IMO instruments relating to maritime safety and security include provisions which indirectly contribute to preventing and controlling pollution hazards posed by maritime accidents involving ships. The adoption of the highest standards in ship safety contributes to pollution prevention. Other instruments adopted by IMO, namely the International Convention on Salvage of 1989 and the Nairobi International Convention on the Removal of Wrecks of 2007, also contain provisions that contribute to protecting and preserving the marine environment.

Other IMO instruments exclusively relate to the prevention of marine pollution, irrespective of whether the introduction of polluting substances into the sea is the result of an accident involving a ship or derives from ship-related operational discharges. In this regard, the following instruments should be noted:

- International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (INTERVENTION 1969);
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LC 1972);
- Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other Than Oil, 1973 (INTERVENTION PROT 1973);
- International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL 73), as modified by the Protocol of 1978 relating thereto (MARPOL 73/78);

- Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended (MARPOL PROT 1997);
- International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990, as amended (OPRC 1990);
- 1996 Protocol on the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LC PROT 1996);
- Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS 2000);
- International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS 2001);
- International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM 2004 – not yet in force); and
- Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (HONG KONG SRC 2009 – not yet in force).

In the case of MARPOL 73/78, general acceptance of the anti-pollution rules and standards established in the Convention is shown by the fact that 151 States, representing 99% of the world's merchant fleet, are Parties to this Convention and implement its two mandatory Annexes I and II, which regulate prevention of pollution by oil and noxious liquid substances, respectively. Annexes III (harmful substances in package form), IV (sewage from ships) and V (garbage) are optional. Annex VI, contained in a separate instrument (MARPOL PROT 1997), contains provisions for the prevention of air pollution from ships. All Annexes to MARPOL 73/78 are in force.

Prevention and control of pollution by dumping is regulated by two instruments:

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LC 1972 or London Convention); and
- 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (LC PROT 1996).

Anti-pollution measures are also the subject of several IMO Assembly resolutions.

IMO's anti-pollution instruments are to be applied in accordance with the compatibility clause provided in article 237 of UNCLOS, which establishes that provisions included in Part XII of UNCLOS are without prejudice to the specific obligations assumed by States Parties under special conventions and agreements concluded previously which relate to the protection and preservation of the marine environment and to agreements which may be concluded in furtherance of the general principles set forth in UNCLOS. The obligations previously assumed by States Parties to UNCLOS are, however, to be implemented in a manner consistent with the general principles and objectives of UNCLOS. These compatibility clauses are especially relevant with regards to the implementation of MARPOL and the London Convention, the two main treaties regulating prevention of pollution from vessels and from dumping, which were adopted before UNCLOS.

Part XII of UNCLOS includes several references to generally accepted international rules and standards established through the competent international organization or general diplomatic conference. With regards to pollution from vessels and from dumping, such rules and standards are contained in IMO instruments, some of which were mentioned above. In some cases,

however, UNCLOS itself contains regulations of an operative kind that can be implemented in a way similar to IMO rules and standards. One such example is to be found in the provisions on enforcement of port State jurisdiction, and another in the special mandatory measures adopted for certain areas in the EEZ. Such subjects are regulated by both UNCLOS and MARPOL. Provisions in the two treaties therefore complement each other and should be read together in order to ensure proper and uniform implementation.

Article 9(3) of MARPOL 73 requires that the term "jurisdiction" be construed in light of international law in force at the time of application or interpretation of this Convention. Such international law, as reflected in UNCLOS, provides for different jurisdiction to coastal States, namely with respect to vessels within their ports, their territorial sea, and their EEZ, as well as to flag States and to port States. Furthermore, in an effort to enforce international rules and standards governing pollution prevention, UNCLOS and relevant IMO instruments allow port States to inspect foreign vessels while in ports. UNCLOS also includes a number of safeguards. For ease of reference, MARPOL provisions which are complementary to, or require interpretation in light of, provisions of UNCLOS are contained in the following table:

MARPOL Section	UNCLOS Section
1(1)	94, 217(1)
4(2)	21(1), 56(1)(b), 211, 220, 228, 231
4(3)	217(7)
5	217(3)
5(2)	217(2)
6	218
7	226(1), 232
9(3)	91, 217, 220, 218
10	287

A VESSEL-SOURCE POLLUTION

1 GENERAL FRAMEWORK

Article 211(1) of UNCLOS lays down a general obligation for States, acting through the competent international organization (IMO) or general diplomatic conference, to establish international rules and standards regarding vessel-source pollution and to re-examine them from time to time, as necessary. As mentioned above, the main IMO instrument in this area is MARPOL 73/78, as amended.

Article 2(2) of MARPOL 73 includes a definition of "harmful substance" which is compatible with the definition of "pollution of the marine environment" included in article 1(4) of UNCLOS. Both definitions cover actual or potential harm to living resources and marine life, hazards to human health, hindrance to legitimate uses of the sea, and reduction of amenities. While the definition in UNCLOS applies to all sources of marine pollution, including the introduction of energy into the marine environment, MARPOL only addresses "discharges" from vessels, as defined in article 2(3) of MARPOL.

In principle, MARPOL deals with operational discharges of harmful substances, namely those related to the normal operation of ships. Six technical annexes to MARPOL 73/78 relate to the prevention of pollution by oil (Annex I), noxious liquid substances in bulk (Annex II), harmful substances carried by sea in packaged forms (Annex III), sewage from ships (Annex IV), garbage (Annex V), and air pollution from ships (Annex VI). In accordance with article 8 of MARPOL 73, Protocol to this Convention lays down provisions concerning reports on incidents involving harmful substances, which apply to incidents resulting from operational discharges as well as from accidents involving a ship.

In 1997, the Conference of Parties to MARPOL 73/78 adopted a Protocol to amend MARPOL by adding Annex VI, containing the Regulations for the Prevention of Air Pollution from Ships. The 1997 Protocol entered into force on 19 May 2005. All Annexes have been revised over the years and have entered into force.

Relationship between flag, port and coastal State jurisdiction

As in the case of IMO instruments relating to maritime safety and security, the enforcement of MARPOL 73/78 relies primarily on the exercise of flag State jurisdiction in regard to the construction, design, equipment and manning of ships. Flag States may not permit their ships to sail unless they comply with measures at least as effective as the generally accepted international rules and standards set forth in that regard. Article 5 of MARPOL 73 also includes provisions on certificates and special rules relating to the inspection of foreign ships voluntarily in port or at off-shore terminals under the jurisdiction of a Party by officers duly authorized by that Party, to ensure that they comply with anti-pollution rules and standards and to prevent ships from sailing if these requirements are not met. In addition to the enforcement jurisdiction of the flag State to institute proceedings, MARPOL also provides for the possibility for port States to institute proceedings in accordance with their law. Provisions on the institution of proceedings in this regard should be read together with the safeguards included in article 228 of UNCLOS.

The provisions contained in UNCLOS and MARPOL 73/78 on the exercise of flag and coastal State jurisdiction to adopt laws and regulations for the prevention, reduction and control pollution of the marine environment from vessels should be read in conjunction with the provisions in UNCLOS dealing with the respective jurisdiction of flag States, coastal States, and port States to enforce laws and regulations, as set out in articles 217 to 220 of UNCLOS.

Safeguards related to the exercise of powers of enforcement

Section 7 of Part XII of UNCLOS contains several provisions relating to the enforcement jurisdiction of coastal States and flag States in connection with the institution of proceedings against foreign ships.

Article 225 of UNCLOS provides that States, when exercising measures of enforcement against foreign vessels, shall not endanger the safety of navigation or otherwise create any hazard to a vessel, or bring the vessel to an unsafe port or anchorage, or expose the marine environment to an unreasonable risk.

Article 226 of UNCLOS provides that investigations conducted by States shall not unduly delay foreign vessels, and physical inspections, when necessary, shall be limited to an examination of such certificates, records or other documents as the vessels are required to carry by generally accepted international rules and standards. Article 7 of MARPOL 73 includes the obligation for coastal States to avoid foreign ships being delayed for inspection purposes, and entitles such ships to compensation for any loss or damage suffered in that regard. Article 232 of UNCLOS provides that States shall be liable for damage or loss attributable to them arising from measures taken pursuant to section 6 when such measures are unlawful or exceed those reasonably required in the light of available information.

As mentioned above, article 5 of MARPOL 73 contains provisions on certificates and special rules on ship inspections which apply to foreign vessels voluntarily in ports or at off-shore terminals under the jurisdiction of a Party. Regulations on the issue and content of certificates are included in the Annexes to the Convention.

Article 6 of MARPOL 73 contains regulations on the detection of violations and enforcement of this Convention. They include detailed requirements on cooperation between the administrations of the port and flag State following the detection of a violation committed by a foreign ship. These provisions should be considered bearing in mind article 226(2) of UNCLOS. Resolution A.787(19)

on *Procedures for Port State Control* adopted by the IMO Assembly in 1995 contains comprehensive guidelines on port State inspections, identification of contraventions, detention and port and flag State reporting requirements. The guidelines include provisions on the detention of ships.

Protocol I to MARPOL 73 contains provisions regarding reporting on pollution or imminent threat of pollution by the ship to the nearest coastal radio station. Regulation 25 of Annex I and regulation 16 of Annex II oblige ships to establish on-board contingency plans to deal with incidents involving oil or chemical spills from ships.

Article 231 of UNCLOS provides that States shall promptly notify the flag State, particularly its diplomatic agents or consular officers and maritime authority, and any other State concerned, of any enforcement measures taken against a foreign ship. However, with respect to violations committed in the territorial sea, this obligation applies only to such measures as are taken in proceedings. The obligation of port authorities to immediately inform the consul or diplomatic representative of the Party whose flag the ship is entitled to fly of any action taken against the foreign ship is contained in article 5(3) of MARPOL 73.

In accordance with article 223 of UNCLOS, in the proceedings taken against a foreign vessel, States must facilitate the admission of evidence submitted by, inter alia, the competent international organization. States are also required to facilitate the attendance at such proceedings of official representatives of the competent international organization. Those representatives have such rights and duties as may be provided under national laws or international law. The appropriate bodies of IMO may find it necessary to consider the procedures and arrangements required to enable IMO to intervene in such proceedings, including the criteria for determining when such an intervention would be appropriate and the procedure for designating the official representatives of the Organization, as envisaged in UNCLOS.

UNCLOS provides for special suspension and restriction conditions on proceedings to impose penalties. In accordance with article 228(1), proceedings taken against a foreign ship for violations which occurred beyond the territorial sea of the State instituting proceedings must be suspended upon the taking of proceedings to impose penalties by the flag State within six months of the date on which the original proceedings were instituted. However, the requirement of suspension does not apply to proceedings which relate to a case of major damage to the coastal State or when the flag State has repeatedly disregarded its obligation to enforce effectively the applicable international rules and standards in respect of violations committed by its vessels. The flag State which has undertaken proceedings is required, in due course, to make available to the State previously instituting proceedings a full dossier of the case and the records of the proceedings, whenever the flag State has requested the suspension of proceedings.

UNCLOS distinguishes different types of sanctions to be imposed with respect to violations committed by foreign vessels of national laws and regulations or applicable international rules and standards relating to vessel-source pollution. Under article 230(1) of UNCLOS, if the violation is committed in and beyond the territorial sea, monetary penalties only may be imposed. As an exception, pursuant to article 230(2), non-monetary penalties may be imposed in the case of wilful and serious act of pollution in the territorial sea.

Pollution incidents and emergencies at sea

In accordance with article 198 of UNCLOS, when a State becomes aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by pollution, it must give immediate notification to other States it deems likely to be affected by such damage and to the competent international organizations. Article 199 provides that States in the area affected, in accordance with their capabilities, and the competent international organizations shall cooperate

to the extent possible, in eliminating the effects of pollution and preventing or minimizing the damage. To this end, States are required to jointly develop and promote contingency plans for responding to pollution incidents in the marine environment.

OPRC 1990 provides a global framework for international cooperation in combating major oil pollution incidents or threats of marine pollution. In article 3(1)(a), OPRC 1990 establishes that each Party shall require that ships entitled to fly its flag have on board a shipboard oil pollution emergency plan as required by and in accordance with the provisions adopted by IMO for this purpose. In accordance with articles 5(1)(c) and 3, Parties are required to inform without delay all States concerned and IMO in cases of oil pollution incidents. As recalled above, provisions concerning reports on incidents involving harmful substances are also contained in MARPOL 73, article 8 and Protocol I.

Article 7 of OPRC 1990 further develops the main principles of international cooperation in pollution response. Paragraph 3 provides that, in accordance with applicable international agreements, each Party must take the necessary legal or administrative measures to facilitate the arrival and utilization in and departure from its territory of ships, aircraft and other modes of transport engaged in responding to an oil pollution incident or transporting personnel, cargoes, materials and equipment required to deal with such an incident.

Article 12 on institutional arrangements gives IMO important coordinating roles regarding the provision of information, education and training services, technical services and technical assistance.

The Conference on International Cooperation on Preparedness and Response to Pollution Incidents by Hazardous and Noxious Substances, held in London in March 2000, adopted the Protocol on Preparedness, Response and Cooperation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS 2000). This Protocol entered into force on 14 June 2007.

2 FLAG STATE JURISDICTION

The obligation for flag States to adopt and enforce laws and regulations for the prevention, reduction and control of pollution of the marine environment is included in articles 211(2) and 217 of UNCLOS respectively. Pursuant to article 94(6) of UNCLOS, a State that has clear grounds to believe that proper jurisdiction and control with respect to a ship have not been exercised, may report the facts to the flag State. Upon receiving such a report, the flag State shall investigate the matter and, if appropriate, take any action necessary to remedy the situation.

General obligations

In accordance with article 211(2), States must adopt laws and regulations for the prevention, reduction and control of pollution of the marine environment from vessels flying their flag or of their registry. Such laws and regulations must at least have the same effect as that of generally accepted international rules and standards (i.e. those contained in MARPOL 73/78) established through the competent international organization (IMO).

Article 217 addresses the enforcement jurisdiction of flag States of international rules and standards established through the competent international organization (IMO) and their laws and regulations adopted in accordance with UNCLOS for the prevention, reduction and control of pollution of the marine environment from vessels flying their flag or of their registry. Such enforcement must take place irrespective of where a violation occurs.

Design and Equipment

In December 2003, the MEPC adopted amendments to MARPOL 73/78 which had the effect of accelerating the phasing out of single-hull tankers. Under a revised regulation 13G of Annex I to MARPOL 73/78, the final phasing-out date for Category 1 tankers (pre-MARPOL tankers) was brought forward from 2007 to 2005. The final phasing-out date for Categories 2 and 3 tankers (MARPOL tankers and smaller tankers) was brought forward from 2015 to 2010. In addition, the MEPC adopted regulation 13H, requiring the carriage of heavy grade oil in single-hull tankers to be phased out by 2008.

Special provisions on single-hull tankers

In December 2003, IMO adopted a revised, accelerated phase-out scheme for single-hull tankers, along with other measures including an extended application of the Condition Assessment Scheme (CAS) for tankers and a new regulation banning the carriage of Heavy Grade Oil (HGO) in single-hull tankers.

The amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 thereto (MARPOL 73/78) were adopted by the MEPC at its fiftieth session and entered into force on 5 April 2005, under the tacit acceptance procedure.

Manning

In accordance with article 94(4)(c) of UNCLOS, flag States must ensure that the master, officers, and, to the extent appropriate, the crew are fully conversant with and required to observe the applicable international regulations concerning, inter alia, the prevention, reduction and control of marine pollution.

STCW 78 includes the requirement of special training for masters in charge of oil or chemical tankers. The comprehensive 1995 amendments to this Convention establish a general obligation for the States Parties to ensure that seafarers on board ships are qualified and fit for their duties in connection with the safety of life and property at sea, as well as with the protection of the marine environment. Specific provisions on anti-pollution training not only for the crews of tankers but also for any other ships are contained in the Annex to this Convention. Detailed regulations are laid down in the STCW Code. The 2010 Manila amendments to the STCW Convention and Code include provisions on marine environmental awareness training and, in January 2011, IMO's STW Sub-Committee validated a model training course on this subject, for publication by the Organization. The 2010 amendments to the STCW Convention and Code are set to enter into force on 1 January 2012, under the tacit acceptance procedure.

Prohibition from sailing

In accordance with article 217(2) of UNCLOS, the flag State must take appropriate measures to ensure that vessels flying its flag or of its registry are prohibited from sailing until they can proceed to sea in compliance with the requirements of the international rules and standards established through the competent international organization (IMO) including those on the design, construction, equipment and manning of vessels. This provision in fact extends the scope of flag State jurisdiction over the design, construction, equipment and manning of vessels provided in article 94(3) of UNCLOS to the protection of the marine environment.

Carriage and inspection of certificates

Article 217(3) of UNCLOS provides that States must ensure that vessels flying their flag or of their registry carry on board certificates required by and issued pursuant to international rules and standards established through the competent international organization (IMO). Provisions concerning conditions for the issuance of mandatory certificates and the information which these

certificates should contain are included in the technical annexes of MARPOL 73/78. This Convention also provides for the obligation of the flag State to undertake not only initial surveys as a prerequisite for the issuance of certificates, but also periodical and intermediate inspections and surveys, in order to verify that the certificates conform to the actual condition of the vessels.

Resolution A.997(25), which supersedes the guidelines adopted by resolution A.948(23), takes account of the Harmonized System of Survey and Certification in some of the instruments. IMO Assembly resolution A.997(25) on the System has been revised and adopted by Assembly resolution A.1053(27), at its twenty-seventh session in 2011.

Conditions for the recognition of validity of certificates also addressed in article 217(3) are discussed in section 3 of this chapter.

Investigation of an alleged violation

Article 217(4) sets out the obligation of the flag State to provide for immediate investigation and where appropriate institute proceedings in respect of the alleged violation by its ships of rules and standards established through the competent international organization (IMO), irrespective of where the violation occurred or where the pollution caused by such violation has occurred or has been spotted. Likewise, article 4 of MARPOL 73 establishes the obligation of the flag State to institute proceedings as soon as possible with respect to any violation of the requirements of this Convention wherever it occurs, in accordance with its law.

Under article 217(5), the flag State conducting an investigation of the violation may request assistance from other States, which in turn must endeavour to meet appropriate requests. Article 217(6) provides that flag States must, at the written request of any State, investigate any violation alleged to have been committed by vessels flying their flag. If satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, flag States must institute proceedings without delay in accordance with their laws. Several provisions in articles 4 and 6 of MARPOL 73 elaborate in more detail the basic features of the co-operation between the flag State and other States Parties. Both UNCLOS (article 217(7)) and MARPOL (article 4(3)) impose upon the flag State the obligation to promptly inform the requesting State and the competent international organization (IMO), of the action taken and its outcome. That information must be available to all States. IMO may consider whether special publicity arrangements are needed for these purposes.

Penalties

Article 217(8) of UNCLOS establishes that penalties provided for by the laws and regulations of the flag States must be adequate in severity to discourage violations by their ships wherever they occur. A similar obligation is imposed on States Parties to MARPOL (article 4(4)).

Notification of incidents

Article 211(7) of UNCLOS provides that international rules and standards for the prevention, reduction and control of pollution from vessels should include, inter alia, those relating to prompt notification to coastal States whose coastline or related interests may be affected by incidents, including maritime casualties, which involve discharges or probability of discharges. MARPOL 73 (article 8 and Protocol I) contains provisions concerning reports on incidents involving discharge or probable discharge of harmful substances. Article 8 establishes the obligation for States to report without delay to other States likely to be affected by pollution incidents involving harmful substances. In accordance with article I of Protocol I, the master or other person having charge of any ship involved in an incident involving discharges or probable discharges of harmful substances should report the particulars of such incident without delay and to the fullest extent possible to the appropriate officers or agencies specified in article 8 of this Convention. Discharges include not

only those resulting from maritime casualties but also those occurring, during the operation of the ship, of oil or noxious liquid substances in excess of the quantity or instantaneous rate permitted under MARPOL. Article V(1) of the Protocol to MARPOL 73/78 establishes that reports should be made by the fastest telecommunications channels available with the highest possible priority to the nearest coastal State.

Under article 4 of OPRC 1990, the flag State is responsible for requiring masters to report without delay to the nearest coastal State any event on their ship involving a discharge or probable discharge of oil.

3 PORT STATE JURISDICTION

Several provisions of UNCLOS refer to the jurisdictional powers of States over foreign ships voluntarily in their ports in connection with the implementation of measures for the prevention, reduction and control of pollution from vessels. These provisions, which are explicitly extended to offshore terminals of a State, should be considered together with MARPOL 73/78 regulations relating to the exercise of port State control. IMO resolution A.787(19) on *Procedures for Port State Control*, as amended, which has already been referred to in this document, contains a detailed interpretation of applicable IMO rules and standards and includes an explanation of the meaning of basic concepts involved in the exercise of port State jurisdiction, such as "clear grounds" (for believing that violations have taken place), "inspection", and "detention".

General obligations

Article 219 of UNCLOS establishes that port States shall, as far as practicable, take administrative measures to prevent the sailing of a vessel which has been found to be in violation of applicable international rules and standards relating to seaworthiness of vessels and thereby threatens damage to the marine environment. The concept of seaworthiness should be understood not only as embracing provisions concerning the design, construction, manning, equipment and maintenance of vessels regulated in IMO instruments relating to maritime safety and security, but also those contained in MARPOL 73/78. Bearing in mind the principle of no more favourable treatment contained in article 5(4) of MARPOL 73, port States which are Parties to this Convention are entitled to request compliance with preventive measures for the prevention, reduction and control of pollution therein also from ships flying the flag of non-Parties.

Article 217(3) of UNCLOS establishes that the on-board certificates required by and issued pursuant to international rules and standards must be accepted by other States as evidence of the condition of the vessels and must be regarded as having the same force as certificates issued by them, unless there are clear grounds for believing that the condition of the vessel does not correspond substantially with the particulars of the certificates. Further provisions on the investigation of foreign vessels voluntarily in port are contained in article 226. These provisions reproduce the basic features relating to the inspection of certificates and ships contained in MARPOL 73, article 5. Paragraph 2 of this article refers to the inspection of certificates regulated in the technical annexes to this Convention.

Both UNCLOS (articles 219 and 220) and MARPOL 73 (article 5(2)) establish the basic principles governing the detention in port of foreign vessels. According to article 226(1)(c) of UNCLOS, port States may refuse the release of a vessel whenever it would present an unreasonable threat of damage to the marine environment, or make the release conditional upon proceeding to the nearest appropriate repair yard. However, upon removal of the causes of violation, ships must be permitted to continue immediately. These measures do not prejudice the right of the port State to impose penalties in accordance with its national laws for violation of rules and standards for the prevention, reduction and control of pollution from vessels, even if this violation consists solely in the non-observance of preventive measures without any illegal discharge having taken place.

IMO recognizes that the primary responsibility for implementing the regulations provided for in IMO conventions rests with the flag State. However, it also acknowledges the need for port State control (PSC), with a view to promoting more effective implementation of all applicable standards for maritime safety and pollution prevention.

With the foregoing in mind, IMO has adopted a number of resolutions in respect of PSC over the years. In 1995, the IMO Assembly, at its nineteenth session, adopted resolution A.787(19), amalgamating guidelines contained in several IMO resolutions, with the aim of providing one set of basic guidelines on the conduct of PSC inspections. In 1999, resolution A.882(21), amending the procedures for PSC, was adopted. The procedures have recently been revised by both the MSC and the MEPC and the new version A.1052(27) was adopted by the IMO Assembly at its twenty-seventh session.

Member Governments, through the conduct of PSC inspections and discussions at IMO, realized that more effective PSC could be conducted by establishing regimes for its coordinated implementation at the regional level. Accordingly, many States have entered into Memoranda of Understanding (MoUs) with the view to enhancing compliance by all vessels with international rules and standards for the prevention, reduction and control of pollution from vessels. Each MoU identifies the relevant conventions to be enforced through that particular MoU. Most MoUs establish targets for the inspection of a minimum number or percentage of vessels visiting Member States ports. The following MoUs have been concluded so far:

- .1 the Paris Memorandum of Understanding on Port State Control (Paris MoU), signed in Paris, France, on 1 July 1982;
- .2 the Latin American Agreement on Port State Control of Vessels, signed in Viña del Mar, Chile, on 5 November 1992;
- .3 the Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MoU), signed in Tokyo, Japan, on 1 December 1993;
- .4 the Caribbean Memorandum of Understanding on Port State Control (Caribbean MoU), signed in Christchurch, Barbados, on 9 February 1996;
- .5 the Memorandum of Understanding on Port State Control in the Mediterranean Region (Mediterranean MoU), signed in Malta on 11 July 1997;
- .6 the Indian Ocean Memorandum of Understanding on Port State Control (Indian Ocean MoU), signed in Pretoria, South Africa, on 5 June 1998;
- .7 the Memorandum of Understanding for the West and Central African Region (Abuja MoU), signed in Abuja, Nigeria, on 22 October 1999;
- .8 the Memorandum of Understanding on Port State Control in the Black Sea (Black Sea MoU), signed in Istanbul, Turkey, on 7 April 2000; and
- .9 the Riyadh Memorandum of Understanding on Port State Control in the Gulf Region (Riyadh MoU), signed in Riyadh, Saudi Arabia, in June 2004.

Discharge violations

UNCLOS provisions concerning measures to be taken by port States in the event of discharge in violation of international rules and standards are contained in article 218. Paragraph 1 of this article expressly authorizes port States to institute proceedings in respect of any discharge from a vessel outside the internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards established through the competent

international organization (IMO). Paragraphs 2, 3 and 4 address situations involving requests to the port State from the flag State as well as coastal States regarding discharge violations of applicable international rules and standards. Violations of a port State's laws and regulations for the prevention, reduction and control of pollution from vessels by a foreign ship voluntarily in port which have been committed within the territorial sea or EEZ of that State are dealt with in article 220 of the Convention. In both cases, the State into whose port the vessel has voluntarily come should apply MARPOL 73/78 rules and standards.

Actions to be taken in the event of violations of regulations on discharges are contained in article 6(2) of MARPOL 73. This provision establishes that ships to which this Convention apply may, in any port of a Party, be subject to inspection by officers appointed or authorized by that Party for the purposes of verifying whether the ship has discharged any harmful substances in violation of the provisions of the regulations. Other provisions in the same article deal with communications with the Administration of the flag State and other States affected by the violation, as well as the rules governing institution of proceedings.

Reception facilities

MARPOL 73/78 sets out requirements for port reception facilities, and all parties to this Convention are obliged to provide reception facilities for ships calling at their ports. As recognized under article 211(6) of UNCLOS, the requirement for such reception facilities is especially necessary in "special areas" where, because of the vulnerability of these areas to pollution, more stringent discharge restrictions are required. MARPOL 73/78 also provides that these reception facilities should, in each case, be adequate for the reception of wastes from ships without causing undue delay to the ships using them.

However, while ships are subject to both survey and certification by the flag State and port State control, the responsibility for providing reception facilities is a matter only for port States, and progress in this regard has not been satisfactory. In order to address the matter, IMO has developed a number of guidelines, the most recent of which have been published as a *Comprehensive Manual on Port Reception Facilities*. The manual provides guidance on matters such as waste management strategy, type and quantity of ship-generated wastes, planning, choice of location, collection and treatment, financing and cost recovery, and cooperation of port and ship requirements. IMO has also provided technical assistance over many years to a large number of countries in the form of seminars, symposia and workshops, mostly at the regional level. Progress has been made in certain parts of the world. It is apparent, however, that, in some oil producing regions, the situation with regard to the provision of reception facilities is not improving.

The provision of adequate reception facilities worldwide is a matter of extreme complexity which involves the shipping industry, port operators, oil and chemical companies and governments. A satisfactory solution to the shortage of reception facilities in many parts of the world has yet to be found. It is widely recognized that, if this problem is to be satisfactorily resolved, it will be necessary to address the economic as well as the technical aspects of this issue.

At its forty-fourth session in March 2000, the MEPC adopted *Guidelines for ensuring the adequacy of reception facilities* (resolution MEPC.83(44)).

At its fifty-fifth session in October 2006, the MEPC approved an Action Plan on tackling the inadequacy of port reception facilities. The Plan contains a list of proposed work items to be undertaken by IMO with the aim of improving the provision and use of adequate port reception facilities, including items relating to reporting requirements; provision of information on port reception facilities; identification of any technical problems encountered during the transfer of waste between ship and shore and the standardization of garbage segregation requirements and containment identification; review of the type and amount of wastes generated on board and the type and capacity of port reception facilities; revision of the *IMO Comprehensive Manual on Port*

Reception Facilities; and development of a *Guide to Good Practice on Port Reception Facilities*. With regard to regional arrangements, the MEPC, at its fifty-fifth session, agreed, in principle, to recognize them as a means to provide reception facilities in light of the MARPOL requirements and invited Member States to provide views to future sessions on how such arrangements could be better institutionalized. Amendments on regional arrangements to the relevant Annexes to MARPOL 73/78 were developed during 2011, with a view to formal adoption in 2012.

At its sixty-second session, the MEPC adopted guidelines on reception facilities under MARPOL Annex VI in July 2011, and the Organization's FSI Sub-Committee completed its work on the aforementioned Action Plan in 2010. As part of that work, a standard Advance Notification Form was developed to enhance the smooth implementation and uniform application of the reception facility requirement, thus minimizing the risk of a ship incurring delay. Also, a standard Waste Delivery Notification form was developed to provide uniformity of records at the global level. FSI also developed the Guide of Good Practice on Port Reception Facilities, which provides guidance and easy reference to good practices related to the use and provision of port reception facilities, as well as a list of applicable regulations and guidelines (MEPC.1/Circ.671).

Investigations of foreign vessels

Pursuant to article 226(1)(a) of UNCLOS, States must not delay a foreign vessel longer than is essential for the purposes of investigating violations of generally accepted international rules and standards. MARPOL 73 (article 7(1)) establishes that port States should make all possible efforts to avoid a ship being unduly detained or delayed in connection with such investigations.

4 COASTAL STATE JURISDICTION

Routeing measures

Article 211(1) of UNCLOS provides that States, acting through the competent international organization or general diplomatic conference, must promote the adoption of routeing systems designed to minimize the threat of accidents which might cause pollution of the marine environment, including the coastline, and pollution damage to the related interests of coastal States. As mentioned in the previous chapter dealing with safety of navigation, IMO is the competent international organization for developing guidelines and regulations on ships' routeing systems, and comments made under that chapter apply to the prevention of marine pollution. In this regard, mention should be made of SOLAS Chapter V on Safety of Navigation. According to paragraph 1 of Regulation 10, ships' routeing systems contribute to protection of the marine environment. Paragraph 9 of Regulation 10 requires that all adopted ships' routeing systems and actions taken to enforce compliance with those systems be consistent with international law, including the relevant provisions of UNCLOS.

The General Provisions on Ships' Routeing (GPSR), adopted by the IMO Assembly resolution A.572(14) of 20 November 1985, were amended by resolution A.827(19) of 23 November 1995. Originally adopted with the view to ensuring the safety of navigation, the measures envisaged in the GPSR have been adopted by IMO over the years for environmental protection purposes. Such measures include traffic separation schemes, two-way routes, recommended tracks, areas to be avoided, inshore traffic zones, roundabouts, precautionary areas, and deep-water routes. New paragraph 3.6 of the GPSR establishes the criteria to be taken into account when considering the adoption of a routeing system for the protection of the marine environment. New paragraph 3.7 sets limits for the adoption of routeing systems. In accordance with this paragraph, IMO should not adopt a system that would impose unnecessary constraints on shipping, or establish an area to be avoided that would impede the passage of ships through an international strait. In November 1997, the IMO Assembly adopted resolution A.858(20) by which it delegated to the MSC the function of adopting traffic separation schemes and routeing measures other than traffic separation schemes, including the designation and substitution of archipelagic sea lanes.

Territorial sea

In accordance with article 21(1) of UNCLOS, the coastal State may adopt laws and regulations in conformity with the provisions of UNCLOS and other rules of international law, relating to innocent passage through the territorial sea in respect of, inter alia, the preservation of its environment and the prevention, reduction and control of pollution thereof. In this connection, article 211(4) establishes that coastal States may, in the exercise of their sovereignty within their territorial sea, adopt laws and regulations for the prevention, reduction, and control of marine pollution from foreign vessels, including vessels exercising the right of innocent passage. Such laws and regulations must not hamper innocent passage of foreign vessels. Under article 21(2), such laws and regulations adopted by the coastal State must not apply to the design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules and standards.

Article 220(2) of UNCLOS provides for the right of the coastal State to undertake physical inspection of a vessel navigating in its territorial sea where there are clear grounds for believing that the vessel has, during its passage therein, violated laws and regulations of that State adopted in accordance with UNCLOS or applicable international rules and standards for the prevention, reduction and control of pollution from vessels, namely those rules and standards adopted by IMO. Article 220(5) also allows physical inspection of a vessel navigating in the territorial sea or exclusive economic zone where there are clear grounds for believing that the vessel has committed, in the exclusive economic zone, a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels resulting in a substantial discharge causing or threatening significant pollution of the marine environment. Where evidence so warrants, the coastal State may institute proceedings, including detention of the vessel in accordance with its laws.

Exclusive Economic Zone

Article 56(1)(b)(iii) of UNCLOS provides that, in its EEZ, the coastal State has jurisdiction with regard to the protection and preservation of the marine environment. In exercising that jurisdiction, the coastal State is empowered to enact laws and regulations for the prevention, reduction, and control of pollution from vessels in the EEZ. Such laws and regulations must, in accordance with article 211(5) of UNCLOS, conform to and give effect to generally accepted international rules and standards established through the competent international organization (IMO).

Several provisions of UNCLOS address the rights of the coastal State in cases of violations to international rules and standards for the prevention, reduction and control of pollution from vessels committed in the EEZ by vessels navigating either in the EEZ or the territorial sea:

- If there are clear grounds for believing that such a violation has taken place in the exclusive economic zone, the State may, in accordance with article 220(3), require the vessel to give information regarding its identity and port of registry, its last and next port of call and other relevant information required to establish whether a violation has occurred.
- If there are clear grounds for believing that a vessel has committed a violation in the exclusive economic zone resulting in a substantial discharge causing or threatening significant pollution of the marine environment, the coastal State may, in accordance with article 220(5), undertake physical inspection of the vessel for matters related to the violation if the vessel has refused to give information or if the information supplied by the vessel is manifestly at variance with the evident factual situation, and if the circumstances of the case justify such inspection.

- If there is clear objective evidence that a vessel has committed a violation in the exclusive economic zone resulting in a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or EEZ, the State, in accordance with article 220(6), may, provided that the evidence so warrants, institute proceedings, including detention of the vessel.

Measures to avoid pollution arising from maritime casualties

Article 221(1) recognizes the rights of States, pursuant to international law, both customary and conventional, to take and enforce measures beyond the territorial sea proportionate to the actual or threatened damage to protect their coastline or related interests, including fishing, from pollution or threat of pollution following upon a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in major harmful consequences.

This provision codifies the main features of the right of intervention by the coastal States as provided in the Intervention Convention of 1969 and its Protocol of 1973 in respect of incidents involving, respectively, a major discharge of oil or of substances other than oil. These treaties refer solely to the right of intervention on the high seas because the concept of EEZ was not known at the time of their adoption. Following the entry into force of UNCLOS, the regulations on the right of the coastal State laid down in both IMO treaties should be considered as applicable both to the EEZ and to the high seas.

Special mandatory measures

In accordance with article 211(6) of UNCLOS, where the international rules and standards are inadequate to meet special circumstances, the coastal State may adopt laws and regulations for the prevention, reduction and control of pollution from vessels in particular, clearly defined areas of its EEZ. The area must be clearly defined and the adoption of special mandatory measures must be required for recognized technical reasons in relation to the oceanographical and ecological conditions, as well as the utilization or protection of the resources and the particular character of the traffic of the area concerned.

Article 211(6)(a) and (b) includes specific conditions for the adoption of special mandatory measures:

- the coastal State should conduct appropriate consultations, through the competent international organization (IMO), with other States concerned. It should also submit a communication to IMO for special mandatory measures, supported by scientific and technical evidence and information on reception facilities;
- the organization (IMO), within 12 months of receiving the communication, shall determine whether the conditions in the proposed area justify the adoption of special mandatory measures;
- if the organization (IMO) so determines, the coastal State may adopt laws and regulations implementing such international rules and standards or navigational practices as are made applicable, through the organization (IMO), for special areas. These laws and regulations shall not become applicable to foreign vessels until 15 months after the submission of the communication to the organization (IMO); and
- the coastal State must publish the limits of the area where the special mandatory measures are to be enforced.

In accordance with article 211(6)(c), the coastal State may enact for the same area additional laws and regulations on discharges or navigational practices. However, these laws and regulations must not require foreign vessels to observe design, construction, manning or equipment standards other than generally accepted international rules and standards. If the coastal State intends to adopt additional laws and regulations, it must notify the organization (IMO) at the time it submits the communication referred to above.

In accordance with article 220(8) of UNCLOS, the provisions on enforcement contained in article 220(3) to (7) also apply to the enforcement of national laws and regulations implementing special mandatory measures pursuant to article 211(6).

Special areas and particularly sensitive sea areas (PSSAs)

Special mandatory requirements for certain areas regarding the prevention of operational discharges of harmful substances are contained in Annexes I, II, and V to MARPOL 73/78. A "special area" is defined in Annex I to MARPOL 73/78 as "a sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by oil is required". Properly modified, the same definition is used to refer to special areas designated under Annexes II and V. In July 2011, the concept of "special area" was incorporated in Annex IV, through amendments adopted by the MEPC at its sixty-second session. Guidelines for the designation of special areas under MARPOL 73/78 are formulated in resolution A.927(22) of 29 November 2001. Furthermore, Annex VI to MARPOL 73/78 establishes the category of "Emission Control Areas" (ECA), in which more stringent controls on emissions of sulphur oxide (SO_x), nitrogen oxide (NO_x) and particulate matter are required.

A comparison of article 211(6) of UNCLOS and provisions on special areas under MARPOL 73/78 indicates that, while the areas established pursuant to article 211(6) are restricted in jurisdictional scope to the EEZ, the MARPOL special area provisions cover enclosed or semi-enclosed areas which may include parts of the territorial sea, the EEZ and the high seas. Implementation of MARPOL special areas is, however, subject to the jurisdictional limits provided in UNCLOS.

MARPOL special requirements apply only to the discharge of harmful substances. Pursuant to article 211(6)(a), the coastal State may adopt laws and regulations for the prevention, reduction and control of pollution from vessels implementing international rules and standards or navigational practices as are made applicable, through the organization, for special areas. Pursuant to article 211(6)(c), additional laws and regulations that may be adopted by the coastal State may relate to discharges or navigational practices, but shall not require foreign vessels to observe design, construction, manning or equipment standards other than generally accepted international rules and standards, as noted above.

To date, ten special areas have been designated under MARPOL Annex I (Mediterranean Sea, Baltic Sea, Black Sea, Red Sea, "Gulfs" area, Gulf of Aden, Antarctic area, North West European Waters, Oman area of the Arabian Sea, Southern South African waters). In these areas, any discharge into the sea of oil or oily mixtures from ships of 400 gross tonnage and above is prohibited, with few exceptions (resolution MEPC.117(52) of 15 November 2004). Under Annex II, the Antarctic area has been designated as a special area where any discharge into sea of noxious liquid substances or mixture containing such substances is prohibited (resolution MEPC.118(52) of 15 October 2004). As indicated previously, the MEPC, at its sixty-second session, introduced special areas into Annex IV of MARPOL 73/78 and simultaneously designated the Baltic Sea as the first special area under that Annex. Eight special areas have been designated under Annex V (Mediterranean Sea, Baltic Sea, Black Sea, Red Sea, "Gulfs" area, North Sea, Antarctic area, and Wider Caribbean region, including the Gulf of Mexico and the Caribbean Sea). Four SO_x Emission Control Areas have been designated under Annex VI (Baltic Sea (ECA for SO_x), North Sea (ECA for SO_x), North American area (ECA for SO_x and NO_x), and the United States Caribbean Sea area (ECA for SO_x, NO_x and particulate matter).

In connection with the foregoing, it may be noted that the MEPC, at its sixtieth session, adopted resolution MEPC.191(60) whereby the date on which the discharge requirements for the Wider Caribbean Region Special Area under MARPOL Annex V took effect on 1 May 2011. The decision followed discussion of a submission from the Wider Caribbean coastal States, declaring that adequate reception facilities for ship-source garbage, as required by MARPOL Annex V, are available and cover the relevant ports within the region. The new provisions provide more stringent discharge requirements for ship garbage, thus giving extra protection to such a sensitive area as the Wider Caribbean Region.

At the same session, the MEPC adopted resolution MEPC.189(60), whereby a new chapter 9 on "Special requirements for the use or carriage of oils in the Antarctic Area" was added to MARPOL Annex I. The new requirements, which entered into force on 1 August 2011, establish a ban on the use or carriage as cargo of heavy grade oils in the Antarctic area (South of latitude 60°S) on board ships, except those engaged in securing the safety of ships or in search and rescue operations.

The IMO Assembly, at its twenty-fourth session, adopted revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs) (resolution 982(24)). According to these guidelines, a PSSA is an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities. The process, therefore, involves both the designation of the PSSA and the adoption of measures for their proper protection. An application for a PSSA designation may come from IMO Member States only and should contain, inter alia, a proposal for the relevant associated protective measures aimed at preventing, reducing or eliminating the threat or identified vulnerability. Associated protective measures for PSSAs are limited to actions that are to be, or have been, approved and adopted by IMO, for example, a routing system such as an area to be avoided.

The guidelines provide advice to IMO Member States in the formulation and submission of applications for the designation of PSSAs to ensure that, in the process, all interests – those of the coastal State, flag States, and the environmental and shipping communities – are thoroughly considered on the basis of relevant scientific, technical, economic, and environmental information regarding the area at risk of damage from international shipping activities.

In order to ensure the proper development, drafting and submission of proposals in accordance with the Guidelines, the MEPC approved a revised guidance document for the preparation of PSSAs proposals at its fifty-fourth session.

The following 13 PSSAs have been designated to date: the Great Barrier Reef (Australia); the Sabana-Camagüey Archipelago (Cuba); Malpelo Island (Colombia); the sea around the Florida Keys (United States of America); the Wadden Sea (Denmark, Germany, the Netherlands); Paracas National Reserve (Peru); Western European Waters (Belgium, France, Ireland, Portugal, Spain and the United Kingdom); Extension of the existing Great Barrier Reef PSSA to include the Torres Strait (Australia and Papua New Guinea); Canary Islands (Spain); the Galapagos Archipelago (Ecuador); the Baltic Sea area (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden); the Papahānaumokuākea Marine National Monument (United States of America); and the Strait of Bonifacio (France and Italy). The MEPC, at its sixty-second session, approved, in principle, the Saba Bank (the Kingdom of the Netherlands in the North-eastern Caribbean) as a PSSA.

States bordering straits used for international navigation and archipelagic States

Article 42(1)(b) of UNCLOS provides that States bordering straits used for international navigation may adopt laws and regulations relating to transit passage through the strait in respect of, inter alia, the prevention, reduction and control of pollution, by giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait. In accordance with article 42(2), such laws and regulations must not discriminate among foreign ships or, in their application, have the practical effect of denying, hampering or impairing the right of transit passage. In accordance with article 39(2)(b), ships in transit passage must comply with generally accepted international regulations, procedures and practices for the prevention, reduction and control of pollution from ships, namely MARPOL and other relevant IMO instruments.

Article 43(b) of UNCLOS provides that user States and States bordering straits should by agreement cooperate for the prevention, reduction and control of pollution from ships. There are currently no specific international instruments regulating this matter. Thus, IMO may consider whether adoption of international regulations in this regard may be necessary.

By virtue of article 54 of UNCLOS, the rights and obligations of flag and coastal States regarding the prevention, reduction and control of pollution from ships in accordance with applicable international rules and standards regarding the discharge of oil, oily wastes and other noxious substances in international straits apply *mutatis mutandis* to archipelagic sea lanes passage.

UNCLOS includes a specific provision on the enforcement powers of States bordering straits used for international navigation. Under article 233 of UNCLOS, States bordering straits are entitled to take enforcement measures against ships in transit passage only if the ship has committed a violation of the laws and regulations referred to in article 42(1)(a) and (b) of UNCLOS causing or threatening major damage to the marine environment of the straits. In such a case, such measures are subject to the safeguards of Part XII, section 7 of UNCLOS.

B DUMPING AT SEA OF WASTES AND OTHER MATTER

General

UNCLOS includes a definition of "dumping" in article 1(5). The obligation on States to adopt laws and regulations and to take other measures that may be needed to prevent, reduce and control pollution of the marine environment by dumping is contained in article 210 paragraphs 1 and 2. In accordance with paragraph 6 of article 210 such laws, regulations and measures shall be no less effective in preventing, reducing and controlling such pollution than the "global rules and standards".

In this connection, article 210(4) imposes upon States the obligation to endeavour to establish global and regional rules and standards and recommended practices and procedures to prevent, reduce and control pollution by dumping, acting through "competent international organizations or diplomatic conference". The reference in the plural to "international organizations" indicates that in this case the task of IMO at the global level can be complemented by regulatory activities undertaken under the auspices of other organizations. Cooperation between IMO and other organizations has been implemented, especially in connection with the adoption of regional agreements.

The international global and regional framework which has been established in this regard consists of several treaties and agreements. At a global level, anti-pollution measures are contained in the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention, 1972), as periodically amended by decisions of its Contracting Parties. In 1996 the Contracting Parties to the London Convention adopted the Protocol to the Convention on the Prevention of Marine Pollution by the Dumping of Wastes and Other Matter, 1972 (1996 LC Protocol) which comprehensively and substantially amends the parent convention. The 1996 LC Protocol entered into force in March 2006 and eventually it will replace the London Convention.

Since 1977, IMO has been responsible for the performance of secretarial functions such as the organization and servicing of the Consultative Meetings of the Contracting Parties to the London Convention and other subsidiary bodies reporting to the Consultative Meetings. Similar functions, as well as depositary functions, are regulated in the 1996 LC Protocol. The Protocol further expands the tasks of IMO by assigning to the Organization, inter alia, the duties of providing advice on implementing and, subject to availability of adequate resources, collaborating in environmental assessments and cooperating with competent international organizations concerned with the prevention and control of pollution. The Protocol assigns to IMO the roles of coordination and cooperation regarding technical cooperation activities in the field of training, and access to and transfer of environmentally sound technologies and know-how to developing countries.

The Contracting Parties to the London Protocol, at their first meeting held in London from 30 October to 3 November 2006, adopted amendments to the 1996 LC Protocol (resolution LP.1(1)). The amendments regulate the sequestration of CO₂ streams from CO₂ capture processes in sub-seabed geological formations. Contracting Parties also adopted the "Risk Assessment and Management Framework for CO₂ Sequestration in Sub-Seabed Geological Structures" to ensure compatibility with Annex 2 to the London Protocol. This means that a basis has been created in international environmental law to regulate carbon capture and storage (CCS) in sub-seabed geological formations, for permanent isolation, as part of a suite of measures to tackle the challenges of climate change and ocean acidification. In practice, this option would apply to large point sources of CO₂ emissions, including power plants, and steel and cement works.

The Meeting of Contracting Parties, at its twenty-second session in 2007, adopted the "Specific Guidelines for Assessment of Carbon Dioxide Streams for Disposal into Sub-seabed Geological Formations" (2007 CO₂ Sequestration Guidelines) to advise Parties on how to capture and sequester CO₂ in a manner that meets all the requirements of the Protocol and is safe for the marine environment, over both the short and long terms. The Guidelines will be kept under review and updated in 2012. These Guidelines complement the 2006 amendments on CO₂ sequestration in sub-seabed geological formations under resolution LP.1(1).

In 2009, the Parties amended article 6 of the 1996 LC Protocol pursuant to resolution LP.3(4), concerning the export of wastes for dumping purposes, which is aimed at enabling transboundary sub-seabed geological formations to be used for CO₂ sequestration projects, provided that the standards contained in the 1996 LC Protocol are fully met. It will enter into force for those Parties which have deposited their instruments of acceptance with IMO, 60 days after two-thirds of the Parties have deposited their instruments of acceptance. In 2010, the Parties adopted a work plan with timelines to review the 2007 CO₂ Sequestration Guidelines in light of the 2009 amendments and launched this review, which is aimed at completion in 2012.

Ocean Fertilization

In 2008, the governing bodies of the London Convention and the London Protocol adopted resolution LC-LP.1(2008) on the regulation of ocean fertilization, disallowing all ocean fertilization activities other than legitimate scientific research. At that time, they agreed to further consider,

in 2009, a potential legally binding resolution or an amendment to the London Protocol on ocean fertilization. To prepare for this discussion, eight options were developed intersessionally for further review, ranging from a reconfirmation of the "statement of concern" issued by the LC/LP Scientific Groups in 2007, to the insertion of a new, stand-alone article on ocean fertilization in the Protocol.

In 2009, the governing bodies noted that many issues relating to the development of a new regulation had yet to be resolved and that the draft "Assessment Framework for Scientific Research Involving Ocean Fertilization", being developed by the LC/LP Scientific Groups, would be an important tool for implementing any future regulation. In 2009, the Parties to the London Convention and Protocol considered whether the scope for regulation should be widened to cover emerging "marine geo-engineering" proposals, or to focus solely on ocean fertilization activities, which is a sub-set of marine geo-engineering. It was agreed to focus on the latter, while an exploration of marine geo-engineering and its possible impacts on the marine environment was regarded as desirable and should be planned in the future.

In 2010, the Parties to the London Convention and Protocol adopted resolution LC-LP.2(2010) on the "Assessment Framework for Scientific Research Involving Ocean Fertilization", which had been developed since May 2007, as required under resolution LC-LP.1(2008). The Assessment Framework guides Parties on how proposals for ocean fertilization research should be assessed and provides criteria for an initial assessment of such proposals and detailed steps for completion of an environmental assessment, including risk management and monitoring.

Currently, Parties are finalizing work that would "establish a global, transparent and effective control and regulatory mechanism for ocean fertilization activities and other activities that fall within the scope of the London Convention and London Protocol and have the potential to cause harm to the marine environment", aimed at completion in 2012.

Relationship with UNCLOS

Bearing in mind article 237 of UNCLOS and the need for compatibility between the general principles and objectives of UNCLOS and specific obligations assumed by States under special conventions that relate to the protection and preservation of the marine environment, including the London Convention, the Eleventh Consultative Meeting of Contracting Parties to the London Convention agreed in 1988 that there were "no fundamental inconsistencies" between UNCLOS and the London Convention 1972. At their Seventeenth Consultative Meeting, held in 1994, the Contracting Parties expressed their opinion that States Parties to UNCLOS would be legally bound to adopt laws and regulations and take other measures to prevent, reduce and control pollution by dumping. In accordance with article 210(6) of UNCLOS, these laws and regulations must be no less effective than the global rules and standards contained in the London Convention.

The Seventeenth Consultative Meeting further noted that States which are Parties to both UNCLOS and the London Convention 1972 could be called upon to carry out specific obligations assumed by them under UNCLOS. In compliance with a decision taken at the meeting, the Secretary-General of IMO wrote to States Parties to UNCLOS which are not Parties to the London Convention 1972, drawing attention to their obligations relating to the provisions concerning the prevention of marine pollution by dumping, and the objectives and achievements of the London Convention 1972.

In its resolution 65/37 of 7 December 2010, the United Nations General Assembly encouraged States that have not yet done so to become Parties to the 1996 London Protocol.

Relationship with regional agreements

Article VIII of the London Convention and article 12 of the London Protocol encourage Contracting Parties with common interests in a given geographical area to enter into regional agreements consistent with the Convention "for the prevention of pollution, especially by dumping", taking into account characteristic features of the region's marine environment. The contents of these agreements should be consistent with those of the London Convention. Non-parties to these regional agreements, although not legally bound by them, should endeavour to act consistently within them. Article 197 of UNCLOS also requires States to cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with UNCLOS, for the protection and preservation of the marine environment, taking into account characteristic regional features.

Regional agreements compatible with the London Convention have been concluded within the framework of the Regional Seas Programme developed by the United Nations Environment Programme (UNEP). The implementation of this programme has resulted in the adoption of several regional conventions and protocols, some of which include provisions concerning the prevention of marine pollution by dumping. This is the case of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, the Convention for the Protection of Natural Resources and Environment of the South Pacific Region and the Convention on the Protection of the Black Sea Against Pollution. The Convention for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific also includes provisions regarding the prevention of marine pollution by disposal of radioactive wastes at sea.

Flag State jurisdiction

Article 216(1)(b) of UNCLOS requires a flag State to enforce with regard to vessels flying its flag or vessels or aircraft of its registry the laws and regulations adopted in accordance with UNCLOS and applicable international rules and standards established through competent international organizations or diplomatic conference for the prevention, reduction and control of pollution of the marine environment by dumping. The London Convention (article VII(1)(a)) and Protocol (article 10(1.1)) require each Contracting Party to apply the measures required to implement the Convention and Protocol to vessels and aircraft registered in its territory or flying its flag.

The application of the London Convention to all sea areas is established by way of interpretation of the definition of "sea" included in article 1 of the London Convention, which makes the global rules and standards contained therein applicable to all marine waters other than the internal waters of States. Bearing in mind decisions which had already been taken and implemented by Contracting Parties, the 1996 Protocol extends the concept specifically to include the seabed and the subsoil thereof, to the exclusion of sub-seabed repositories accessed only from land.

Coastal State jurisdiction

According to article 210(5) of UNCLOS, dumping within the territorial sea and the EEZ or onto the continental shelf must not be carried out without the express prior approval of the coastal State, which has the right to permit, regulate and control such dumping after due consideration of the matter with other affected States. The coastal State is required by article 216(1) of UNCLOS to enforce laws and regulations adopted in accordance with UNCLOS and applicable international rules and standards established through the competent international organizations or diplomatic conference for the prevention, reduction and control of pollution of the marine environment by dumping. The Eleventh Consultative Meeting of Contracting Parties to the London Convention agreed that a Party could apply the London Convention 1972 not only in its territorial waters, as specifically stated in this Convention, but also in its EEZ.

The London Convention contains specific regulations establishing the conditions which coastal States should follow in the granting of permits for dumping in their jurisdictional waters. Annex I to the London Convention includes a list of substances the dumping of which is entirely forbidden. Substances which are part of the list contained in Annex II require a prior special permit from the coastal State. The dumping of all other substances not listed in either Annex I or II requires a prior general permit.

This system was decisively reversed by the 1996 LC Protocol which establishes a general prohibition on dumping of all wastes and other matter, except for those belonging to one of the eight categories listed in Annex 1 to the Protocol, namely dredged material, sewage sludge, fish waste or material resulting from industrial fish processing operations, vessels and platforms or other man-made structures, inert, inorganic geological material, organic material of natural origin, bulky items comprising unharmed materials and carbon dioxide streams from carbon dioxide capture processes for sequestration. These wastes or other matter may be considered for dumping provided they do not contain levels of radioactivity greater than *de minimis* (exempt) concentrations as defined by the IAEA.

C OTHER SOURCES OF MARINE POLLUTION

Pollution from seabed activities

Article 208(1) of UNCLOS provides that coastal States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands, installations and structures under their jurisdiction. These laws shall be no less effective than "international rules, standards and recommended practices and procedures" which are to be established through "competent international organizations or diplomatic conference" on a global or regional level (UNCLOS articles 208(3) and (5)). States shall also enforce their laws and regulations and take other measures necessary to implement "applicable international rules and standards" established through competent international organizations or diplomatic conferences (UNCLOS, article 214).

IMO has contributed to the establishment of global rules and standards for the prevention and control of this type of pollution. Regulation 21 in Annex I of MARPOL contains special requirements for drilling rigs and other platforms. The Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989 (MODU Code), recommends design criteria, construction standards and other safety measures for mobile offshore drilling units so as to minimize not only risks to such units and to the personnel on board, but also environmental risks which could arise from a collision between vessels and offshore installations and structures. In this regard, IMO resolution A.671(16) establishes recommendations on safety of navigation around offshore installations and structures. Since the adoption of the MODU Code, the Organization has adopted a significant number of amendments to many of the regulations of SOLAS referenced in the Code and, in addition, the International Civil Aviation Organization (ICAO) has adopted amendments to the Convention on International Civil Aviation which impact on the provisions for helicopter facilities as contained in the Code. As a result, the IMO Assembly, at its twenty-sixth session, adopted the 2009 MODU Code which superseded the existing 1989 MODU Code.

MARPOL applies to pollution from "fixed or floating platforms" other than pollution resulting from the "release of harmful substances directly arising from the exploration, exploitation and associated offshore processing of seabed mineral resources" (article 2). In this regard Annex I, regulation 21 lays down special oil discharge requirements for drilling rigs and other platforms. Meanwhile, the ORPC Convention provides for platforms to have oil pollution contingency plans on board, while both the London Convention (article IV(1)(c)) and the 1996 Protocol (article 1.4.3) exclude governance of "disposal of wastes" directly arising from seabed activities. In article 1.4.3 of the 1996 Protocol, this exclusion was extended to "storage of wastes" to address the storage of excess gas produced in offshore wells and the need to avoid an inadvertent prohibition of this practice.

Harmful aquatic organisms in ballast water

The IMO Council convened a diplomatic conference on ballast water management in February 2004, which adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention). This Convention will enter into force 12 months after ratification by 30 States representing 35% of world merchant shipping tonnage. To date 32 countries, representing 26.46% of the world tonnage, have become Contracting States.

The MEPC, at its fifty-fifth session in 2006, adopted the following guidelines, which are part of a series developed to assist in the implementation of the BWM Convention:

- ballast water exchange design and control standards (G11);
- design and construction to facilitate sediment control on ships (G12);
- designation of areas for ballast water exchange (G14);
- sediment reception facilities (G1); and
- ballast water reception facilities (G5).

The MEPC, at its fifty-sixth session, adopted three further sets of guidelines for additional measures regarding ballast water management, including emergency situations (G13), risk assessment under regulation A-4 of the BWM Convention (G7) and ballast water exchange in the Antarctic Treaty Area. All guidelines required by the BWM Convention, with the exception of those relating to port State control, have now been adopted and promulgated by the MEPC.

IMO resolution A.1005(25) on the Application of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 was adopted to provide certainty and confidence in the application of the BWM Convention, thereby assisting shipping companies, ship owners, managers and operators, as well as the shipbuilding and equipment manufacturing industries, in the timely planning of their operations.

The MEPC continued to develop the necessary guidance for the effective implementation of the BWM Convention and adopted a resolution inviting IMO Member States to encourage, on a voluntary basis, the installation of ballast water management systems on new ships, in accordance with the application dates contained in the BWM Convention.

To date, the MEPC has given basic approval to 34 ballast water management systems that make use of active substances and final approval to 20 such systems. This has led to relevant Administrations issuing Type Approval Certificates for such systems, significantly increasing the number of commercially available treatment technologies. The growing availability of compliant technologies has, therefore, paved the way towards more States to become Party to the BWM Convention.

Biofouling of ships' hulls

The MEPC, at its sixty-second session in July 2011, adopted the first set of international recommendations to address biofouling of ships. The Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species address the risks of introduction of invasive aquatic species through the adherence of sealife, such as algae and molluscs, to ships' hulls – as opposed to their transfer through ships' ballast water.

Research indicates that biofouling is a significant mechanism for species transfer by vessels. A single fertile fouling organism has the potential to release many thousands of eggs, spores or larvae into the water with the capacity to found new populations of invasive species such as crabs, fish, sea stars, molluscs and plankton. Minimizing biofouling will therefore significantly reduce the risk of transfer.

The adopted Guidelines are presently voluntary. However, the MEPC will, after a period of time, assess voluntary implementation and its success in minimizing species transfer, with a view to determining what further measures, if any, should be pursued by IMO in the future, such as the development of a code or convention on the subject matter.

Harmful effects of the use of anti-fouling paints for ships

Since 1988, the MEPC has been considering measures to reduce the harmful effects of the use of "anti-fouling" paint which are intended to keep organisms such as barnacles from clinging to ships hulls, but which disperse an active substance that contaminates the marine environment and can damage or destroy biological systems (such as oyster beds). In 1999, the IMO Assembly adopted resolution A.895(21) on *Anti-Fouling Systems Used on Ships*, which called for a ban on the use of certain compounds in anti-fouling systems by 2008 and called on the MEPC to develop a legally-binding instrument to this effect. The MEPC subsequently prepared a text of a draft International Convention on the Control of Harmful Anti-fouling Systems on Ships (2001 AFS Convention). This Convention was adopted by a diplomatic conference held in October 2001.

Following accession by Panama on 17 September 2007, this Convention had been ratified by 25 States, with a combined 38.11% of world merchant shipping tonnage, and therefore entered into force on 17 September 2008. The MEPC, at its sixty-second session, adopted resolution MEPC.208(62), the 2011 *Guidelines for inspection of anti-fouling systems on ships*, which is to assist the implementation of the 2001 AFS Convention.

Ship recycling

IMO convened a diplomatic conference in Hong Kong, China, from 11 to 15 May 2009, which adopted the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention). The Hong Kong Convention was open for signature from 1 September 2009 until 31 August 2010 and France, the Netherlands, Italy, Turkey and Saint Kitts and Nevis have signed this Convention, subject to ratification.

The Hong Kong Convention, when it enters into force, will provide regulations for the design, construction, operation and preparation of ships so as to facilitate safe and environmentally sound recycling, without compromising ships' safety and operational efficiency; the operation of ship recycling facilities in a safe and environmentally sound manner; and the establishment of an appropriate enforcement mechanism for ship recycling, incorporating certification and reporting requirements.

Associated with the Hong Kong Convention is a series of guidelines intended to ensure global, uniform and effective implementation and enforcement of the relevant requirements of the Convention. In this respect, the MEPC, at its fifty-ninth session, adopted the first set of guidelines for the development of the inventory of hazardous materials (revised by the MEPC, at its sixty-second session in July 2011). The MEPC, at its sixty-second session, adopted guidelines for the development of the ship recycling plan and the Committee continues to work on two other sets of priority guidelines, namely:

1. Guidelines for safe and environmentally sound ship recycling; and
2. Guidelines for the authorization of ship recycling facilities.

D ATMOSPHERIC POLLUTION AND CLIMATE CHANGE

Air pollution

Within the framework of articles 212(3) and 222 of UNCLOS, IMO is the appropriate forum for States to establish global and regional rules, standards and recommended practices and procedures applicable to vessels to prevent, reduce and control pollution of the marine environment from or through the atmosphere. States are required to adopt laws and regulations to prevent, reduce and control such pollution, taking account of internationally agreed rules, standards and recommended practices and procedures (UNCLOS (article 212(1)), including relevant IMO regulations. In accordance with article 222 of UNCLOS, States are also under an obligation to enforce their laws and regulations and implement applicable rules and standards established through competent international organizations or diplomatic conference to prevent, reduce and control such pollution.

In September 1997, a Conference of Parties to MARPOL adopted the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto. This new Protocol, which entered into force on 19 May 2005, incorporated into MARPOL a new Annex VI, entitled Regulations for the Prevention of Air Pollution from Ships, with the aim of minimizing airborne emissions from ships (SO_x, NO_x, ozone-depleting substances (ODS), volatile organic compounds (VOC)) and their contribution to global air pollution and environmental problems.

Eight years after its adoption, but only two months after its entry into force, the MEPC at its fifty-third session in July 2005, decided that Annex VI should undergo a general revision. The decision was based on new knowledge of the harmful impact that ships' exhaust gases may have on ecosystems and human health and recognized that technological developments would enable significant improvements over the current standards.

After three years of intensive work, the MEPC, at its fifty-eighth session in October 2008, unanimously adopted a revised Annex VI and its closely related NO_x Technical Code 2008, both of which entered into force on 1 July 2010, under the tacit acceptance amendment procedure. The revised Annex VI introduced even more stringent limits for the emission of air pollutants from ships, together with phased-in reductions, to be achieved through engine design or equivalent technologies, in particular for SO_x and NO_x.

As previously indicated, the revised MARPOL Annex VI includes provisions to establish Emission Control Areas (ECAs) for NO_x, SO_x and particulate matter (PM). To date, the Baltic Sea (May 2005), the North Sea including the English Channel (November 2006) and the North American area (August 2011) have been designated as ECAs for SO_x, NO_x or PM. The North American ECA comprises the sea areas (200 nautical miles) off the Pacific coasts of the United States and Canada; off the Gulf and Atlantic coasts of the United States, Canada and the French territories; and off the coasts of the populated Hawaiian Islands. The MEPC, at its sixty-second session in July 2011, formally designated the United States Caribbean Sea as a special area for NO_x and SO_x and PM, comprising waters adjacent to the coasts of the Commonwealth of Puerto Rico and the United States Virgin Islands, which is expected to take effect on 1 January 2014.

The MEPC, at its sixty-first session in October 2010, also adopted, by resolution MEPC.192(61), the 2010 Guidelines for monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships.

The adoption and subsequent revision of Annex VI represent remarkable steps towards establishing a robust, global regime responsive to the air quality problems experienced in coastal areas across the globe. By reducing harmful emissions to air from ships, the revised measures are expected to have a significant beneficial impact on the atmospheric environment and on human health, particularly for those people living in port cities and coastal communities.

Climate change: reduction of greenhouse gas emissions from ships

Prior to the adoption of the Kyoto Protocol of 1997 to the United Nations Framework Convention on Climate Change, the MARPOL Conference of September 1997 on air pollution invited the MEPC to consider what CO₂ reduction strategies may be feasible in light of the relationship between CO₂ and atmospheric pollutants, especially NO_x, since NO_x emissions may exhibit an inverse relationship to CO₂ reductions.

Following consideration of the matter within the MEPC, the IMO Assembly adopted resolution A.963(23) on *IMO Policies and Practices Related to Reduction of Greenhouse Gas Emissions from Ships*, which urged the MEPC to identify and develop mechanisms to achieve the limitation or reduction of greenhouse gases emissions from international shipping and keep the matter under review. The Assembly resolution also called for the MEPC to develop a work plan with a timetable to identify and develop the needed mechanisms.

In compliance with the Assembly's request, the MEPC, at its fifty-ninth session in 2006, adopted a "Work plan to identify and develop the mechanisms needed to achieve the limitation or reduction of CO₂ emissions from international shipping", which envisaged, in particular, the development of mandatory technical, operational and market-based measures. Such measures would reduce greenhouse gas (GHG) emissions from ships, thereby contributing to worldwide efforts to address climate change.

Technical and operational measures

The MEPC has successfully developed technical and operational measures to enhance the energy efficiency of ships and thereby reduce their emission of GHGs. These were initially introduced on a voluntary basis and their implementation was monitored with a view to their further improvement. Following extensive debate with the MEPC, the measures, known as the Energy Efficiency Design Index (EEDI – applicable to new ships) and the Ship Energy Efficiency Management Plan (SEEMP – applicable to all ships), were finally adopted, by majority vote during the MEPC at its sixty-second session (July 2011), as mandatory requirements under MARPOL Annex VI, which are expected to enter into force on 1 January 2013.

The EEDI is a non-prescriptive, performance-based mechanism that leaves the choice of technologies to use in a specific ship design to the industry. As long as the required energy-efficiency level is attained, ship designers and builders would be free to use the most cost-efficient solutions in complying with the regulations. In turn, the SEEMP establishes a mechanism for operators to improve the energy efficiency of ships.

The new technical requirements, adopted through resolution MEPC.203(62), represent the first binding international instrument to address climate change since the adoption of the Kyoto Protocol in 1997 and the first ever global, mandatory GHG-reduction regime for an international industry sector.

Recognizing that some Parties to MARPOL Annex VI may require time to build appropriate capacity in order to comply with the new standards, in particular the EEDI, Parties are able to waive the requirements for individual ships for a maximum timeframe of 6.5 years. However, with a view to ensuring uniform and speedy compliance with the adopted standards, the Annex VI amendments also include provisions for technical assistance and technology transfer.

The MEPC, at its sixty-second session, also agreed on a plan for further work on technical and operational measures, including the development of several guidelines to support the implementation and enforcement process.

Market-based measures

The MEPC has recognized that, in view of projected increases in the world's population and trade, market-based measures (MBMs), to ensure even further reductions in GHG emissions from international shipping, will be necessary in addition to the adopted technical and operational measures. The Committee has, therefore, received several MBM proposals from governments and organizations and established an expert group to undertake a feasibility study and impact assessment of such proposals. The outcome of the study and assessment was subsequently examined by an MEPC working group, which was tasked with providing advice on, among other subjects, the compelling need and purpose of MBMs as possible mechanisms to reduce GHG emissions from international shipping. It was also tasked with evaluating the outcome of work conducted by the expert group, which had also endeavoured to assess the impact of the proposed MBMs on, among others, international trade, the maritime sector of developing countries least developed countries (LDCs) and Small Island Developing States (SIDS), as well as the corresponding environmental benefits.

Following completion of the expert group's study, some of the proposed MBMs were combined or further developed by their respective proponents and, in examining the proposals, the intersessional working group held an extensive exchange of views on issues related to, inter alia, the desirability of MBMs providing: certainty in emission reductions or carbon price; revenues for mitigation, adaptation and capacity building activities in developing countries; incentives for technological and operational improvements in shipping; and offsetting opportunities. Based on such policy considerations, the working group then formulated advice to the MEPC, in accordance with its terms of reference, related to: the grouping of the MBMs; the strengths and weaknesses of the groups; their relation to relevant international conventions; and the aforementioned possible impacts.

The advice so formulated will now assist the MEPC, at its sixty-third session in 2012, to determine, in accordance with its specific action plan for MBMs, future work by the Organization, including, as identified by the working group, further in-depth examination of the impact of MBMs on developing countries.

CHAPTER III

LIABILITY FOR POLLUTION DAMAGE

Article 235(1) of UNCLOS provides that States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment and that they are liable in accordance with international law. Article 235(2) sets out the obligation for States to ensure that "recourse is available in accordance with their legal systems for prompt and adequate compensation or other relief in respect of damage caused by pollution of the marine environment by natural or juridical persons under their jurisdiction". Paragraph 3 of the same article provides that, with the objective of assuring prompt and adequate compensation in respect of all damage caused by pollution of the marine environment, States shall cooperate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage, as well as, where appropriate, development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds.

These provisions should be considered in connection with several instruments adopted by IMO both prior to, and after, the adoption of UNCLOS in the field of liability and compensation for damage in connection with the carriage of oil and other hazardous and noxious substances by sea. These instruments are:

- International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC 1969), and the 1992 Protocol thereto (CLC PROT 1992), together known as the 1992 Civil Liability Convention or CLC 1969);
- Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage, 1969;
- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (FUND 1971), and the 1992 Protocol thereto (the (FUND PROT 1992), together known as the 1992 Fund Convention);
- International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (HNS 1996);
- International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (BUNKERS 2001);
- Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (FUND PROT 2003); and
- Protocol of 2010 to amend the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (HNS PROT 2010).

CLC 1969 established a system of strict liability for the shipowner and the obligation to contract compulsory third-party liability insurance to cover for limits of compensation for damage caused by spill of heavy crude oils transported as cargo.

FUND 1971 provided for the constitution and functioning of the International Oil Pollution Compensation Fund (the IOPC Fund), which ensures an additional compensation to that paid by the shipowner under CLC 1969 whenever this compensation proves to be insufficient. The IOPC Fund also pays compensation in some cases where the compensation to be paid by the shipowner is not available.

The Protocols of 1992 to CLC 1969 and FUND 1971 effectively superseded the parent treaties and increased the limits of compensation. The two treaties, as amended, are now widely known as the 1992 Civil Liability Convention and the 1992 Fund Convention, respectively. Among the other changes effected by the 1992 Protocols was the extension of the scope of the Conventions to cover damages occurring in the EEZ (and not only in the territorial seas).

The IMO Legal Committee, at its eighty-second session in 2000, considered a request to increase the limitation amounts set out in CLC PROT 1992 and the compensation limits set out in FUND PROT 1992. Utilizing the tacit acceptance procedure for the first time, the Committee adopted two resolutions amending the 1992 Protocols by increasing the limits in each of them by 50.37%. The amendments entered into force on 1 November 2003.

The FUND PROT 2003, adopted in May 2003, provides for a supplementary scheme to substantially increase the compensation to victims of oil pollution damage and alleviate the difficulties faced by them in cases where there is a risk that the amount of compensation available under the 1992 Civil Liability and 1992 Fund Conventions will be insufficient to pay established claims in full. The accession to the supplementary scheme is open only to States Parties to the 1992 Fund Convention. The 1992 Fund Convention entered into force on 3 March 2005.

HNS 1996 provides for the strict liability of the shipowner and the obligation to contract compulsory third party liability insurance to cover for limits of compensation for damage caused by accidental spills of hazardous and noxious substances other than heavy crude oil and bunker fuel oil carried as cargo. The same treaty also provides for the constitution and functioning of an HNS Fund similar to the IOPC Fund.

HNS 1996 has a geographical scope of application similar to the 1992 Civil Liability and 1992 Fund Conventions in respect of pollution damage. Accordingly, it provides compensation for pollution damage that has occurred within the territorial sea and the EEZ. In cases of damage other than pollution damage, for instance death and injury incurred on board as a result of explosions involving HNS substances, compensation is provided regardless of the maritime zone where the incident at the source of the damage took place.

The HNS PROT 2010 was adopted by consensus by a diplomatic conference convened by IMO at its Headquarters in London on 1 November 2010. The Protocol remained open for signature until 31 October 2011. It addresses the practical problems that have prevented many States from ratifying the parent convention, which, despite being adopted in 1996, has to date only 14 ratifications and is some way from meeting the conditions for its entry into force.

Under HNS PROT 2010, if damage is caused by hazardous and noxious substances carried in bulk, compensation would first be sought from the shipowner, up to a maximum limit of 100 million Special Drawing Rights (SDR) (around US\$150 million). Where damage is caused by hazardous and noxious substances in packaged form, or both in bulk and packaged form, the maximum liability for the shipowner is 115 million SDR (US\$172.5 million).

Once this limit is reached, compensation would be paid from the second tier, the HNS Fund, up to a maximum of 250 million SDR (US\$375 million) (including compensation paid under the first tier). The Fund will have an assembly, consisting of all States Parties to this Convention and Protocol, and a dedicated secretariat, which will normally meet once a year.

BUNKERS Convention 2001 establishes a liability and compensation regime for spills of oil carried as fuel in ships' bunkers. This Convention, which entered into force on 21 November 2008, is modelled on the 1992 Civil Liability Convention. In 2009, the IMO Assembly adopted resolution A.1028, aiming to remove ambiguity regarding the issuing of bunker certificates to bareboat registered vessels. In 2011, the Assembly adopted resolution A.1055(27) on Issue of bunkers certificates to ships that are also required to hold a CLC certificate.

OTHER ISSUES

Removal of wrecks

Several provisions in UNCLOS are relevant to the removal of wrecks, including the general obligation on States to protect and preserve the marine environment (article 192). In relation to the territorial sea, article 21(1)(a) provides that a coastal State may adopt laws and regulations, in conformity with the provisions of UNCLOS and other rules of international law, relating to innocent passage through the territorial sea, in respect of the safety of navigation and the regulation of maritime traffic. Article 221(1) of UNCLOS, which codifies basic principles under the Intervention Convention of 1969 and its Protocol of 1973, recognizes the right of a coastal State, pursuant to international law, both customary and conventional, to take and enforce measures beyond the territorial sea proportionate to the actual or threatened damage to protect their coastline or related interests from pollution or threat of pollution following upon a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in "major harmful consequences".

The scope of the Intervention Convention of 1969, the Protocol of 1973, and article 221(1) of UNCLOS is restricted to casualties of a catastrophic nature likely to cause major harmful consequences to the coastline and related interests of a State. Moreover, the treaties are restricted to damage to coastal or related interests from pollution. Accordingly, these treaties do not empower a coastal State either to intervene generally to remove wrecks in waters beyond the territorial sea in situations where safety of navigation rather than damage from pollution is an issue, or in cases of pollution that does not result in major harmful consequences.

An IMO Conference convened at the United Nations Office in Nairobi (UNON) adopted, on 18 May 2007, the Nairobi International Convention on the Removal of Wrecks, 2007. The Nairobi Convention fills a gap in the existing international legal framework and provides the legal basis for States to remove from their exclusive economic zones, wrecks which pose a hazard to the safety of navigation or to the marine and coastal environments, or both. It will make shipowners financially liable and require them to take out insurance or provide other financial security to cover the costs of wreck removal. It will also provide States with a right of direct action against insurers.

Articles in the Nairobi Convention cover:

- reporting and locating ships and wrecks – covering the reporting of casualties to the nearest coastal State; warnings to mariners and coastal States about the wreck; and action by the coastal State to locate the ship or wreck;
- criteria for determining the hazard posed by wrecks, including depth of water above the wreck, proximity of shipping routes, traffic density and frequency, type of traffic and vulnerability of port facilities. Environmental criteria such as damage likely to result from the release into the marine environment of cargo or oil are also included;
- measures to facilitate the removal of wrecks, including rights and obligations to remove hazardous ships and wrecks – which sets out when the shipowner is responsible for removing the wreck and when a State may intervene;

- liability of the owner for the costs of locating, marking and removing ships and wrecks – the registered shipowner is required to maintain compulsory insurance or other financial security to cover liability under the convention; and
- settlement of disputes – part XV of UNCLOS, relating to the settlement of disputes, applies, *mutatis mutandis*, if no settlement is possible within 12 months.

The Nairobi Convention also includes an optional clause enabling States Parties to extend the application of certain provisions of this Convention to wrecks located within its territory, including the territorial sea. If a State chooses the opt-in option, it has to notify the Secretary-General accordingly, at the time of expressing its consent to be bound by this Convention or at any time thereafter.

The Convention has not yet entered into force. In 2011, the Assembly, at its twenty-seventh session, adopted resolution A.1057(27), aiming to remove ambiguity regarding the issuing of wreck removal certificates to bareboat registered vessels.

CHAPTER IV

TECHNICAL CO-OPERATION ASSISTANCE TO DEVELOPING COUNTRIES

General

Parts XII, XIII and XIV of UNCLOS provide for cooperation among States, either directly or through competent international organizations, in relation to the protection and preservation of the marine environment, marine scientific research, and the development and transfer of marine technology, respectively. Some of these provisions refer in particular to cooperation by means of assistance to developing countries. The Convention on the International Maritime Organization (article 43(a)) provides that IMO shall, through its Technical Co-operation Committee, consider any matter within its scope concerned with "the implementation of technical co-operation projects funded by the relevant United Nations Programme for which the Organization acts as the executing or cooperating agency or by funds-in-trust voluntarily provided to the Organization ...".

IMO's rules and standards provide a single, universal framework governing maritime operations and ensure the efficient, safe and environmentally friendly carriage of goods by sea. However, many developing countries cannot yet give full and complete effect to IMO's instruments. For this reason and, as mandated by the IMO Convention, the Organization has established an Integrated Technical Co-operation Programme (ITCP), with the sole purpose of assisting countries in building up their human and institutional capacities for uniform and effective compliance with the Organization's regulatory framework.

By fostering capacity building in the maritime sector, the ITCP is crucial for assisting developing countries to implement IMO instruments for safer and more secure shipping, enhanced environmental protection and facilitation of international maritime traffic. The importance of the ITCP increases further with amendments to existing, and the development of new instruments by IMO, in which the particular needs of, and impact on, SIDS and LDCs are now taken into account. The table below illustrates how the ITCP contributes to sustainable and socio-economic development.

ROLE OF IMO'S TECHNICAL CO-OPERATION WORK IN PROMOTING SUSTAINABLE AND SOCIO-ECONOMIC DEVELOPMENT	
ACTION	IMPACT
Improving the safety, security, environmental soundness and efficiency of maritime activities	<ul style="list-style-type: none"> • well-run merchant and fishing fleets • improved turnaround of vessels and port throughput • increased global trade • improved balance of payments • reduced number of lives and ships lost at sea
Enhancing marine environment protection	<ul style="list-style-type: none"> • cleaner waters and coasts • increased tourism • greater access to protein through improved fish catches • integrated coastal zone management
Promoting sustainable livelihoods and poverty eradication	<ul style="list-style-type: none"> • employment for seafarers in the global shipping and fishing industries • advancement of women in the maritime sector • increased foreign exchange earnings • consequent beneficial impact at local level, especially in coastal/fishing communities

The ITCP began in the 1960s. During the late 1990s, IMO's Technical Co-operation Committee (TCC) comprehensively reformed the technical co-operation work of the Organization in order to increase its effectiveness. The reform provided a policy framework for the preparation, design, and implementation of the ITCP, covering the following key principles:

- .1 ownership of the programme development and implementation process rests with the recipient countries themselves;
- .2 IMO's regulatory priorities are systematically integrated into the programme-building process;
- .3 the ITCP promotes the development of human and institutional resources in the maritime sector, on a sustainable basis, including the advancement of women;
- .4 the ITCP promotes regional collaboration and technical co-operation among developing countries;
- .5 IMO builds partnerships with governments, industry and international development aid agencies to ensure appropriate funding for the ITCP;
- .6 IMO also seeks to mobilize regional expertise and resources for its technical assistance activities;
- .7 IMO strengthens its capacity-building programmes with a focus on contributing to the achievement of the Millennium Development Goals (MDGs);
- .8 the ITCP is coordinated with other development aid programmes in the maritime field in order to maximize the benefits of combined efforts and resources; and
- .9 IMO ensures, through monitoring systems and periodic impact assessment exercises, that programme targets are met and that lessons learned are transferred back to the programme building process.

Since 2000, the following instruments adopted at IMO diplomatic conferences included provisions and/or resolutions with regard to the promotion of technical assistance and co-operation in supporting their implementation and increasing the number of States Parties to them, namely:

- (i) International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (BUNKERS 2001);
- (ii) Protocol of 2002 to the Athens Convention relating to the Carriage of Passengers and their Luggage by Sea, 1974 (PAL PROT 2002);
- (iii) Protocol of 2005 to the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, 1988 (SUA 2005);
- (iv) Protocol of 2005 to the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms located on the Continental Shelf, 1988 (SUA PROT 2005);
- (v) Nairobi International Convention on the Removal of Wrecks, 2007 (NAIROBI WRC 2007);
- (vi) The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (HONG KONG SRC 2009); and

- (vii) Protocol of 2010 to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (HNS PROT 2010).

Within the framework of the ITCP, other IMO committees work with the IMO Secretariat and the Technical Co-operation Committee to identify developing countries' needs for assistance in strengthening their institutional, legal, managerial, scientific, technical and training capacities to implement the global rules and standards contained in the instruments adopted by IMO in the following areas:

- maritime safety and security and related aspects of shipping and ports;
- marine environmental protection;
- maritime legislation; and
- facilitation of international maritime traffic.

MARPOL 73/78, the 1972 London Convention and its 1996 Protocol, OPRC 1990, and STCW 1978, as amended, contain provisions designed to encourage technical co-operation among Parties.

A PROTECTION AND PRESERVATION OF THE MARINE ENVIRONMENT

Article 197 of UNCLOS provides that States must cooperate on a global and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures, consistent with UNCLOS, for the protection and preservation of the marine environment, taking into account characteristic regional features. IMO, together with other organizations, cooperates in the Regional Seas Programme of the United Nations Environment Programme (UNEP). In particular, IMO has played a key role in establishing regional arrangements for combating marine pollution. Also significant is IMO's participation in and contribution to the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), which brings together several United Nations agencies for the expert consideration and the undertaking of appropriate studies on scientific aspects of marine pollution. IMO provides administrative secretarial services to GESAMP.

Article 202 of UNCLOS establishes the obligation on States, directly or through competent international organizations, to promote, inter alia, programmes of scientific and technical assistance to developing States for the protection and preservation of the marine environment and the prevention, reduction and control of marine pollution. The scope of the assistance includes activities such as training of scientific and technical personnel, supply of necessary equipment and facilities, and advice on research. The obligation of assistance also includes the provision of appropriate assistance for the minimization of the effects of major incidents which may cause serious marine pollution, and concerning the preparation of environmental assessments. In accordance with article 203, developing States, for the purposes of prevention, reduction and control of pollution of the marine environment or minimization of its effects, must be granted preference by international organizations in the allocation of appropriate funds and technical assistance and the utilization of their specialized services.

In compliance with these UNCLOS provisions, article 17 of MARPOL on promotion of technical co-operation establishes that Parties must, in consultation with IMO and other international bodies, with assistance of and coordination by the Executive Director of the United Nations Environment Programme, promote support for those Parties that request technical assistance for training, monitoring and supply of equipment and facilities for the reception of wastes, encouragement of research and the facilitation of other measures and agreements to prevent or mitigate pollution of

the marine environment by ships. A similar provision is included in article IX of the 1972 London Convention and article 13 of its 1996 Protocol in connection with the disposal and treatment of waste and other measures to prevent or mitigate pollution caused by dumping.

IMO continues to provide assistance to many developing countries – at the national, regional and global levels – for the effective implementation of its Conventions dealing with environmental protection. Such activities include technical and legal advisory services, training of administrative personnel and ship surveyors and inspectors, and the development of plans for the reception and management of ship-generated wastes. Aside from IMO's own Integrated Technical Co-operation Programme, which provides considerable support for environmental interventions related to the maritime sector of developing countries, among the principal donor-funded activities carried out by IMO in these fields, the following may be cited: (a) a GEF/World Bank/IMO programme entitled "Wider Caribbean Initiative on Ship-generated Wastes" carried out during 1994-1998; (b) a five-year GEF/UNDP/IMO Regional Programme on Building Partnerships for Environmental Management in the East Asian Seas (PEMSEA); (c) a three-year GEF/UNDP/IMO project on removal of barriers to the effective implementation of ballast water control and management measures in developing countries, carried out during 2000-2005 and now succeeded by a GloBallast Partnership programme; (d) a GEF/WB/IMO project for the development of a regional marine electronic highway in the Straits of Malaysia and Singapore; (e) an EU-funded programme aimed at enhancing safety, security and environmental protection in the Mediterranean (SAFEMED); and (f), more recently, a programme funded by the Republic of Korea to help countries of East Asia in the transition to energy efficiency shipping aimed at reducing GHG emissions from ships.

In article 8 of OPRC 1990, Parties agreed to cooperate directly or through IMO and relevant regional organizations in the promotion and exchange of results of research and development programmes related to oil pollution preparedness and response, including technologies and techniques for the minimization and mitigation of the effects of oil pollution and for restoration of the marine environment. In accordance with article 9, Parties undertake to provide support to those Parties that request technical assistance in respect of training, availability and transfer of the relevant technology, equipment and facilities, and other measures to prepare for and respond to oil pollution incidents. Article 10 establishes that Parties must endeavour to conclude bilateral or multilateral agreements implementing arrangements concerning oil pollution preparedness and response. In accordance with article 12, IMO is given the tasks of facilitating the provision of assistance and advice to States establishing national or regional response capabilities and in connection with major oil pollution incidents.

As part of the development of regional systems in preparedness, response and cooperation in the event of accidental marine pollution, regional contingency plans were prepared and approved for the Black Sea, South Asia, and North-West Pacific regions. The same process is being developed in the Mediterranean region, the Sea and Gulf of Aden, and the Central and Western Africa region. The IMO has signed an agreement with the United Nations Office for Project Services (UNOPS) as executing agency for the United Nations Development Programme's Caspian Environment Programme (CEP), in which IMO and UNOPS/CEP wish to implement activities relating to the preparation and development of the national and regional contingency plans for the Caspian Sea countries.

For the execution of technical co-operation programmes in the Arab and Mediterranean region, IMO cooperates with bilateral, regional, and international institutions such as the Arab Academy for Science, Technology and Maritime Transport (AASTMT), the Gulf Cooperation Council (GCC), the Marine Emergency Mutual Aid Centre (MEMAC), the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA), the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), and the Regional Organization for the Protection of the Marine Environment (ROPME), which have an interest in the development of the region's maritime sector and will use, to the extent feasible, their expertise and capacities.

Regional cooperation under the Emergency Protocol to the Abidjan Convention was revitalized through the organization in 2000 of a joint IMO/UNEP meeting of national experts and of an IMO/IPIECA regional workshop aiming to adopt a plan of action for the development of regional cooperation for preparedness and response to accidental marine pollution.

In view of Africa's long coastline, the countries of the continent have addressed marine environment protection through various activities organized in cooperation with IMO and other institutions such as UNEP, the African Union (AU), the New Partnership for Africa's Development (NEPAD), the Global Environmental Facility (GEF), the International Petroleum Industry Environmental Conservation Association (IPIECA), the Indian Ocean Commission (IOC), the Global Initiative for West and Central Africa (GIWACAF) and the Guinea Current Large Marine Ecosystem (GCLME) Project.

In the Wider Caribbean region, the Regional Marine Pollution Emergency Information and Training Centre (REMPEITC-Carib) has been formally established in Curaçao as a Regional Activity Centre within the framework of the Caribbean Environment Programme. A Memorandum of Understanding (MoU) between the Netherlands Antilles, UNEP and IMO was signed in September 2002 in this connection. The Centre, in cooperation with the *Asociación de Asistencia Recíproca Petrolera Estatal Latinoamericana* (ARPEL) and other industry bodies, provides advice and hands-on support to the countries and territories of the region on matters concerning the prevention of marine pollution, response and control activities when pollution has in fact occurred, as well as civil liability and compensation issues.

With regard to the Commonwealth of Independent States and Eastern Europe, and to increase mutual support for several environmental aspects of shipping, including oil pollution preparedness, ballast water management and the dumping of waste at sea, IMO signed an MoU with the Black Sea Commission (BSC) on 8 July 2010.

Within the framework of the North-West Pacific Action Plan, the Marine Environmental Emergency Preparedness and Response Regional Activity Centre (MER/RAC) has been established in the Republic of Korea. In July 2000, the Korean Research Institute of Ship and Ocean Engineering/Korean Ocean Research and Development Institute, UNEP and IMO signed an MoU aiming at establishing long-term cooperation with MER/RAC.

Article 13 of the 1996 Protocol to the 1972 London Convention obligates Parties to promote technical co-operation and assistance in connection with access to and transfer of environmentally sound technologies and corresponding know-how, in particular to developing countries and countries in transition to market economies. IMO is assigned specific functions of coordination in this regard.

Articles 200 and 201 of UNCLOS provide for cooperation among States, directly or through competent international organizations, in the promotion of studies, scientific research programmes and exchange of information and data acquired about pollution of the marine environment, and in the establishment of scientific criteria for the formulation and elaboration of rules, standards and recommended practices and procedures for the prevention, reduction and control of pollution of the marine environment. In this context, IMO has supported the organization of six global Research and Development Forums on matters concerning oil pollution of the seas and ballast water management. Articles 204 to 206 of UNCLOS contain provisions on the monitoring of the risks or effects of pollution and assessment of the potential effects of planned activities under their jurisdiction or control which may cause substantial pollution of or significant and harmful changes to the marine environment. IMO's contribution to the work of GESAMP should again be mentioned in this regard.

B TRAINING

Cooperation requirements for training of seafarers in the field both of safety of navigation and the prevention and control of marine pollution are addressed in article XI(1) of STCW 1978, as amended, which provides for the obligation for Parties to promote, in consultation and with the assistance of IMO, support for those Parties which request technical assistance for the training of personnel, the establishment of institutions for the training of seafarers, the supply of equipment and facilities for training institutions, the development of adequate training programmes and the facilitation of measures and arrangements to enhance qualifications of seafarers. The article includes the provision that this assistance should be performed preferably on a national, subregional or regional basis, "to further the aims and purposes of the Convention, taking into account the special needs of developing countries". In compliance with this requirement, IMO provides worldwide assistance for maritime training institutes in charge of providing basic training for seafarers in accordance with STCW 1978, as amended.

The Organization has sponsored a series of seminars and workshops around the world to promote familiarization with the 2010 Manila amendments to the STCW Convention. At the same time, the IMO model courses have been revised to bring them up to date with the new certification requirements.

The role played by maritime training institutions in developing countries is essential for effective implementation of IMO instruments. During a recent assessment on regional and national maritime training institutions undertaken by IMO, a serious scarcity of equipment and of contemporary teaching resources were identified as an obstacle to the successful training of maritime personnel. Acknowledging "**2010: the Year of the Seafarer**", the Organization addressed this issue by identifying some funds from the existing programmes for *ad hoc* assistance directed towards "Enhancing training materials and equipment in maritime training institutes". Many countries in Africa, Asia and Caribbean regions have already benefitted from this initiative.

Maritime training institutes under the auspices of IMO

Within the framework of its technical co-operation programme, IMO is particularly active in the development of human resources to provide maritime administrations, especially those in developing countries, with the know-how required to comply with international rules and standards.

Under the auspices of IMO, two global educational institutions have been created. The World Maritime University (WMU) in Malmö, Sweden, offers Master of Science degree courses plus professional development courses in maritime safety administration, general maritime administration and environmental protection, shipping management, port management and maritime education and training. The IMO International Maritime Law Institute (IMLI) in Malta offers a one-year advanced course at postgraduate level leading to the degree of Master of Laws.

C MARINE SCIENTIFIC RESEARCH

Article 242 of UNCLOS places upon States and competent international organizations the obligation to promote international cooperation in marine scientific research for peaceful purposes. In article 243, States and competent international organizations are required to co-operate, through the conclusion of bilateral and multilateral agreements, to create favourable conditions for the conduct of marine scientific research in the marine environment. Pursuant to article 244, States and competent international organizations must, in accordance with UNCLOS, make available by publication and dissemination, through appropriate channels, information on proposed major programmes and their objectives as well as knowledge resulting from marine scientific research. MARPOL, article 17, expressly provides for the obligation to promote technical assistance for the encouragement of research. The 1996 Protocol to the 1972 London Convention includes in article 14, a new provision on scientific and technical research related to pollution by

dumping. This provision deals with the duty of Parties to promote such research and to facilitate information on scientific and technical activities and programmes, and on impact assessment.

Scientific research installations

In accordance with article 261 of UNCLOS, the deployment and use of any type of scientific research installations or equipment must not constitute an obstacle to established international shipping routes. Article 262 provides that such installations or equipment must bear identification markings and have adequate internationally agreed warning signals to ensure safety at sea, taking into account rules and standards established by competent international organizations.

IMO is among the responsible bodies for developing international rules and standards on warning signals for such installations and equipment to ensure safety at sea. Such elaboration may need to be undertaken in consultation with other international organizations concerned, such as the International Civil Aviation Organization (ICAO), the International Telecommunication Union (ITU), the International Mobile Satellite Organization (Inmarsat), the Inter-governmental Oceanographic Commission (IOC), the International Hydrographic Organization (IHO) and the International Association of Lighthouse Authorities (IALA).

D DEVELOPMENT AND TRANSFER OF MARINE TECHNOLOGY

Article 266 of UNCLOS provides the obligation for States, directly or through competent international organizations, to cooperate in accordance with their capabilities to promote actively the development and transfer of marine science and marine technology, with regard to the exploration, exploitation, conservation and management of marine resources, the protection and preservation of the marine environment, marine scientific research and other activities in the marine environment compatible with UNCLOS, with a view to accelerating the social and economic development of the developing States. Among the objectives of the development and transfer of marine technology listed in article 268 of UNCLOS, mention is made of the development of human resources through training and education of nationals of developing States. Article 269(a) includes, among the measures to achieve these objectives, the establishment of programmes of technical co-operation for the effective transfer of all kinds of marine technology to States which may need and request technical assistance in this field, particularly to developing States which have not been able to establish or develop their own technological capacity in marine science and the exploration and exploitation of marine resources. OPRC 1990, articles 8(1) and 9(2), and LC PROT 1996, article 13(5), make specific reference to the transfer of technology within the framework of technical co-operation activities to be promoted in order to comply with the objectives and provisions of both treaties. As indicated previously, the energy efficiency amendments to MARPOL Annex VI – introduced to reduce green house gas (GHG) emissions from ships – provide for technical assistance and technology transfer activities, which are also envisaged in IMO's Conventions on anti-fouling systems (AFS 2001), ballast water and sediments control and management (BWM 2004) and ship recycling (HONG KONG SRC 2009).

PART III

SETTLEMENT OF DISPUTES

Part XV of UNCLOS provides for the settlement of disputes between States Parties concerning the interpretation or application of the Convention. To this end, article 279 requires States Parties to settle any disputes concerning the interpretation or application of this Convention by peaceful means. Section 2 of Part XV of UNCLOS also provides a compulsory procedure entailing binding decisions for the resolution of disputes when no settlement has been reached by the Parties. Disputes arising under UNCLOS can be submitted to the International Tribunal for the Law of the Sea established under the Convention, the International Court of Justice or to arbitration, pursuant to article 287 of UNCLOS. Conciliation is also available and, in certain circumstances, submission to it would be compulsory.

Role of IMO in the Special Arbitration Procedure

According to article 1 of Annex VIII of UNCLOS, disputes concerning the interpretation or application of the articles of UNCLOS relating to "navigation, including pollution from vessels and by dumping" may be submitted to a special arbitral procedure provided for in that annex. Under article 2 of the same Annex, a list of experts in the field of navigation, including pollution from vessels and by dumping, is to be drawn up and maintained by IMO, which will be comprised of experts nominated by States Parties.

In compliance with article 2 of Annex VIII of UNCLOS, IMO has invited all States Parties to the Convention at the moment of its entry into force and each State becoming Party thereafter, to nominate two experts to be included in the list of experts in the field of navigation, including pollution from vessels and by dumping. In response to this invitation, several States have nominated such experts. For a listing of the experts who have been nominated by Governments, see the website of the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations at www.un.org/depts/los.

In accordance with article 289 of UNCLOS, in any dispute involving scientific or technical matters, experts in the list established in accordance with article 2 of Annex VIII in connection with special arbitration procedures may also be selected to assist proceedings by courts or tribunals exercising jurisdiction under Part XV of UNCLOS on the Settlement of Disputes in connection with disputes related to navigation and pollution from vessels and by dumping.

Jurisdiction of courts or tribunals

The jurisdiction of the court or tribunal referred to in article 287 of UNCLOS over disputes concerning the interpretation or application of the Convention also extends to the interpretation or application of an international agreement related to the purposes of the Convention, which is submitted to a court or tribunal in accordance with the agreement, pursuant to article 288. In this regard, article 16 of the 1996 LC Protocol provides for the possibility for the Parties concerned to use the dispute settlement procedures in UNCLOS. A similar provision is contained in the Nairobi International Convention on the Removal of Wrecks, 2007 (see Part II, Chapter I of this document).

In accordance with Annex VI, article 22 of UNCLOS, the International Tribunal for the Law of the Sea may also exercise jurisdiction over disputes concerning the interpretation or application of a treaty already in force and concerning a subject-matter covered by UNCLOS, if all the Parties to the treaty so agree. Agreements in this regard may be concluded by Parties to IMO treaties in connection with any dispute regarding their interpretation or application.

Procedures in respect of violation of international anti-pollution rules and standards

Under article 223 of UNCLOS, a State which institutes proceedings against a foreign vessel in respect of violations of international or national laws and regulations to prevent, reduce and control pollution of the marine environment is required to take measures to facilitate the hearing of witnesses and the admission of evidence submitted by, inter alia, "the competent international organization" (IMO). Such a State is also required to facilitate the attendance at such proceedings of "official representatives" of that organization, who shall have such rights and duties as may be provided for under national laws and regulations or international law.

The appropriate bodies of IMO may find it necessary to consider the procedures and arrangements required to enable IMO to intervene in such proceedings, including the criteria for determining when such an intervention would be appropriate and the procedure for designating the "official representatives" of the Organization.

Article 297(1) of UNCLOS specifies the situations when the compulsory dispute settlement procedures entailing binding decisions, as established in Section 2 of Part XV, also apply to disputes concerning the interpretation or application of the Convention with regard to the exercise by a coastal State of its sovereign rights or jurisdiction. In this regard, article 297 (1)(c) provides that these procedures will apply when it is alleged that a coastal State has acted in contravention of specified international rules and standards for the protection and preservation of the marine environment which are applicable to the coastal State and which have been established by the Convention or through a "competent international organization or diplomatic conference" in accordance with UNCLOS.

PART IV

THE IMPLEMENTATION OF IMO FUNCTIONS AND RESPONSIBILITIES IN THE LIGHT OF THE ENTRY INTO FORCE OF UNCLOS

General

Throughout this document an assessment has been provided of the existing functions and responsibilities of IMO within the general framework of international law as reflected in UNCLOS. Appropriate reference has been made to areas in respect of which IMO's tasks could be expanded following the entry into force of the Convention.

This part endeavours to identify any such areas in order to determine whether there is a need for IMO to modify its work or to extend the scope and purpose of its international regulations or procedures or to provide clearer or additional guidelines to States or other entities in implementing the provisions of the Convention.

Documentary and special precautionary requirements in respect of nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances

Article 23 of UNCLOS requires foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances, when exercising the right of innocent passage through the territorial sea, to carry documents and observe special precautionary measures established for such ships by international agreements. Bearing in mind article 23 and the adoption of amendments to SOLAS chapter VII to make the INF Code mandatory, IMO may consider the adoption of multilateral agreements in relation to additional matters such as emergency preparedness and response arrangements in the event of an accident involving cargoes subject to the INF Code.

Routeing measures

IMO could extend its present role in connection with the provisions of UNCLOS relating to the establishment of international rules and standards concerning routeing measures. In this regard, consideration may be given to identifying or establishing, as necessary, in addition to existing IMO Guidelines on ships' routeing:

- the recommendations which coastal States must take into account in prescribing traffic separation schemes or designating sea lanes in their territorial sea;
- the international regulations to which traffic separation schemes and sea lanes within straits used for international navigation and in archipelagic waters must conform; and
- the procedures to be followed by coastal States wishing to refer proposals for traffic separation schemes or sea lanes in international straits or archipelagic waters to IMO for consideration and adoption, including procedures and arrangements to facilitate cooperation between two or more States in respect of sea lanes or traffic separation schemes through the waters of such States.

Procedures and requirements for bonding or other appropriate financial security in respect of vessels detained by a coastal or port State

Article 220(7) of UNCLOS provides that, whenever appropriate procedures have been established, either through the competent international organization or as otherwise agreed, whereby compliance with requirements for bonding or other appropriate financial security has been assured, the coastal State if bound by such procedures shall allow a vessel, detained in relation to

a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or exclusive economic zone, to proceed.

The obligation for States to order the release of a ship upon provision of adequate financial security to cover for the liability of the shipowner is regulated in a number of IMO liability treaties, namely:

- the Convention on Limitation of Liability for Maritime Claims, 1976 (article 13);
- the Protocol on Limitation of Liability for Maritime Claims, 1996;
- the International Convention on Civil Liability for Oil Pollution Damage, 1969 and the 1992 Protocol thereto (article VI);
- the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (article 10); and
- the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001.

Since article 220(7) of UNCLOS provides that the appropriate procedures may be established through "the competent international organization" (IMO), consideration may be given to the possible establishment of procedures on provision of bonds or financial security and a suitable mechanism for establishing such procedures. In this regard it should be noted that article 292 of the Convention provides a procedure for the prompt release of vessels under which an application may be made by or on behalf of the flag State of a vessel if it is alleged that the detaining State has not complied with the provisions of UNCLOS for the prompt release of the vessel or its crew, following the posting of a reasonable bond or other financial security.

The existence of international procedures in this regard will, accordingly, be of some importance in the implementation of the dispute settlement arrangements in part XV of the Convention.

Role of IMO in proceedings against foreign vessels

Bearing in mind the provisions on jurisdiction (article 288) and the possibility for IMO to submit evidence and/or send official representatives to attend proceedings instituted in connection with pollution incidents (article 223), the appropriate bodies of IMO may consider the procedures and arrangements required to enable IMO to intervene in such proceedings, including the criteria for determining when such an intervention would be appropriate and the procedure for designating the "official representatives" of the Organization, as envisaged in the Convention.

Prevention of harmful consequences to vessels and the marine environment as a result of the exercise of enforcement powers by States

Article 225 of UNCLOS provides that States, when exercising their powers of enforcement against foreign vessels, shall not endanger the safety of navigation or otherwise create any hazard to a vessel, or bring the vessel to an unsafe port or anchorage, or expose the marine environment to an unreasonable risk. Article 226 declares that States shall not delay a foreign vessel longer than is essential for purposes of the investigations provided for in certain provisions in the Convention. The article provides the conditions and limits of physical inspections of a vessel, and provides for the release of the vessel, whether absolutely or on conditions, as may be appropriate. Paragraph 2 of article 226 provides that States must cooperate to develop procedures for "the avoidance of unnecessary physical inspection of vessels at sea".

To the extent that it may be considered that any of the procedures envisaged in article 226(2) should be developed on the international plane, IMO would be the appropriate forum for that purpose. In this connection, reference may be made to the provisions in article 6 of MARPOL 73/78 relating to detection of violations and enforcement of this Convention. Consideration may be given to whether these provisions provide an appropriate or suitable basis for the elaboration of the necessary international procedures in this regard.

Prevention of interference by marine scientific research installations or equipment with safety of navigation

Article 261 of UNCLOS provides that the deployment and use of any type of scientific research installations or equipment shall not constitute an obstacle to established international shipping routes. Article 262 provides that such installations or equipment shall bear identification markings and "shall have adequate internationally agreed warning signals to ensure safety at sea and the safety of air navigation, taking into account rules and standards established by competent international organizations".

IMO would appear to be the most appropriate body for developing these international rules and standards to ensure safety at sea. Any work in this area would need to be undertaken in consultation with other international organizations concerned, such as the International Civil Aviation Organization (ICAO), the International Telecommunication Union (ITU), the International Maritime Satellite Organization (INMARSAT), the Intergovernmental Oceanographic Commission (IOC), the International Hydrographic Organization (IHO) and the International Association of Lighthouse Authorities (IALA).

Possible role of IMO in the facilitation of appropriate publicity with respect to measures for the safety of navigation and the prevention of marine pollution

A number of articles of UNCLOS impose on States and other entities the obligation to provide publicity with regard to legislative or other measures taken by them, and to publicize information which may become available to them relating to safety of navigation or the prevention, reduction and control of pollution of the marine environment from vessels or by dumping. This publicity is to make States, seafarers and other interested persons aware of the measures or information in question and thus enable them to take appropriate and necessary steps either to prevent infringements of the laws and regulations, or to avoid any dangers which may be presented in particular situations. It is, therefore, essential that the publicity be given in a manner that ensures that the information provided will in fact reach those who are likely to be affected. In some cases the States or other entities required to provide publicity are also enjoined to make the information available to IMO. Even in cases where reference has been made to another body or bodies, some IMO involvement may be necessary, or at least helpful.

The articles of the Convention relating to "publicity", in respect of matters of possible interest to IMO, include the following:

- **Article 21(3):** The coastal State is required to give due publicity to its laws and regulations relating to innocent passage in its territorial sea. The same obligation arises in respect of the laws and regulations of a State relating to transit passage in straits used for international navigation (article 42(3)).
- **Article 22(4):** The coastal State is required to indicate clearly the sea lanes and traffic separation schemes in its territorial sea on charts to which "due publicity" is to be given. The same obligation is contained in article 41(6) in relation to transit passage in straits used for international navigation and under article 53(10) in respect of archipelagic sea lane passage.

- **Article 24(2):** The coastal State is required to give appropriate publicity to any danger to navigation within its territorial sea of which the State has knowledge. The same obligation is imposed on States bordering straits used for international navigation under article 44.
- **Article 41(2):** Publicity is required to be given by States bordering straits used for international navigation in respect of the substitution of sea lanes and traffic separation schemes for such straits. The same obligation is imposed by article 53(7) in respect of sea lanes and traffic separation schemes in archipelagic waters.
- **Article 52(2):** An archipelagic State is required to give publicity in respect of temporary suspensions of innocent passage in its archipelagic waters. Temporary suspensions of innocent passage in the territorial sea must also only take place after having been duly published (article 25(3)).
- **Article 60(3):** The coastal State is required to give due notice in respect of the construction of installations or structures in its exclusive economic zone, as well as appropriate publicity to the depth, position and dimensions of any installations or structures which are not entirely removed. The same requirements apply in respect of similar installations or structures in the continental shelf, pursuant to article 80.
- **Article 60(5):** The coastal State is required to give due notice in respect of the extent of safety zones established around artificial islands, installations or structures in its exclusive economic zones. The same requirement applies to safety zones on the continental shelf, pursuant to article 80.
- **Article 211(3):** A coastal State which establishes particular requirements for the prevention, reduction and control of pollution of the marine environment as a condition for the entry of foreign vessels into its ports or internal waters or for a call at its offshore terminals, must give due publicity to such requirements and communicate them to the competent international organization.
- **Article 211(6):** A State which establishes special mandatory measures for the prevention of pollution from vessels in a clearly defined area of its exclusive economic zone (paragraph 6, subparagraphs (a) and (b)) must publish the limits of any such area.
- **Article 217(7):** A flag State is required to provide IMO with information in respect of action taken by it against a vessel flying its flag for violations of rules and standards adopted through IMO for the prevention, reduction and control of pollution of the marine environment. IMO is required to make such information "available to all States".

In respect of all these provisions, it appears clear that the required publicity objective will be effectively achieved only if the information in question reaches the States, authorities, entities and persons that are intended to be guided by the information. IMO maintains the most direct and continuing contact with the authorities of States concerned with safety of navigation and the prevention, reduction and control of pollution of the marine environment from vessels. Accordingly, the purpose of the publicity is likely to be served by some IMO involvement. To the extent that this involvement is considered necessary and appropriate, it may be useful to consider suitable arrangements by which the Organization may assist or cooperate with the States or international organizations concerned in ensuring that the publicity given by them will in fact reach the destinations for which it is intended.

IMO's involvement or cooperation in enhancing the effective dissemination of information on maritime safety and pollution prevention measures may even extend to cases in which responsibility for the publicity concerned may have been assigned to specific States or organizations by the Convention. For example, several articles of the Convention, in requiring that States give due publicity to legislation or other measures adopted by them, also stipulate that the information should be deposited with the Secretary-General of the United Nations, who is the depositary of the Convention itself, and who will make information so deposited available to all States concerned. But even in such cases, there may be a need for IMO's involvement in the further dissemination of information, particularly where the information in question may be of significance to ships' personnel or other persons operating in the marine environment who are required to take such information into account in order to safeguard safety or prevent pollution. IMO may therefore find it useful to consider how it might usefully cooperate with or assist the United Nations in making sure that the information will reach ships and other persons which may be in closer contact with IMO.

For example, article 147 of the Convention sets out certain conditions for the erection, emplacement and removal of installations used for carrying out activities in the Area, i.e. "the seabed and ocean floor and sub-soil thereof, beyond the limits of national jurisdiction". Article 147(2) provides that such installations may not be established where interference may be caused to the use of recognized sea lanes essential to international navigation. In addition, safety zones shall be established around such installations with appropriate markings to ensure the safety of both navigation and the installations, but which shall not impede the lawful access of shipping to particular maritime zones or navigation along international sea lanes.

Also under article 16(2), States are required to give due publicity to the charts showing the baselines for measuring the breadth of their territorial sea, or the lists of geographical coordinates of points. Copies of such charts or lists are to be deposited with the Secretary-General of the United Nations. Similar requirements apply in respect of archipelagic baselines under article 47(9) and in respect of the exclusive economic zone under article 75 of UNCLOS. There is a similar provision regarding the continental shelf (article 84(2)). The primary responsibility for preparing and publicizing these charts will fall on the States concerned, but IMO may be in a position to assist in cases where it is deemed that the information may be of relevance to maritime safety or the prevention, reduction and control of pollution of the marine environment. There is no doubt that some of the information to be publicized under these articles of the Convention can be of considerable relevance to flag States, shipowners and other persons involved in international shipping that will need the information in order fully to discharge their responsibilities and international obligations in respect of safety of navigation and pollution prevention. Accordingly, IMO has a legitimate interest in the most effective dissemination of the information involved. For the purposes of facilitating this effective dissemination of information, IMO may find it necessary or useful to establish mechanisms suitable for channelling, in particular cases, information to the authorities, institutions or persons directly affected. Any such involvement of IMO will, of course, be in full consultation with the Secretariat of the United Nations or other intergovernmental organizations concerned, or individual States, as appropriate. It is essential that any role that IMO may play should be such that it does not create unnecessary duplication or proliferation of information and communications on the same subject. Therefore, care should be taken to organize matters in such a way that all concerned recognize clearly that the role of IMO is complementary to the functions of the States, national institutions or international organizations concerned, and not in any way to be regarded as substitutes for those functions.

The development and transfer of marine technology and international cooperation

The basic objectives of international cooperation in the development and transfer of marine technology, as provided in articles 202 and 268, and especially the development of human resources through training and education for nationals of developing countries, are already part of the fundamental aims of IMO and its Technical Co-operation Programme, as provided for in the IMO Convention and in the relevant decisions of the Organization's intergovernmental bodies. In

implementing these aims, IMO may find it useful to expand the scope of the specific arrangements and measures suggested or envisaged in the relevant articles of UNCLOS, particularly those relating to the transfer of technology and the provision of assistance to developing countries in the maritime field.

Further avenues of cooperation among international organizations

Article 278 of UNCLOS enjoins the competent international organizations referred to in Parts XIII and XIV of the Convention to take all appropriate measures to ensure, either directly or in close cooperation among themselves, the effective discharge of their functions and responsibilities in regards the development and transfer of marine technology, as provided in Part XIV. In accordance with its Constitution and pursuant to decisions of its governing organs, IMO has established cooperative and fruitful arrangements for collaboration with the United Nations and the other agencies and organizations within the United Nations system. However, IMO has continued to explore appropriate avenues to promote and facilitate further cooperation with all international organizations whose activities may affect, or be affected by, the measures taken by the Organization with regard to matters dealt with by the Convention. Effective and coordinated liaison will also be needed with the International Seabed Authority and the International Tribunal for the Law of the Sea. Any such liaison and cooperation will be subject to the relevant provisions of UNCLOS, and in accordance with the view of the IMO Assembly that IMO might provide "advice and assistance" to the Preparatory Commission for the International Seabed Authority "on matters falling within the competence of IMO". The Tribunal and the IMO exchanged notes in July 2002 reconfirming the desire to maintain regular contact and cooperation.

Other possible roles for IMO in connection with the implementation of UNCLOS

In addition to the new or modified functions and responsibilities directly or indirectly imposed on IMO by UNCLOS, it may be necessary to consider what other possible roles, if any, may legitimately be played by IMO in connection with implementation of the provisions of the Convention that deal with matters within the field of competence of IMO, particularly the provisions whose interpretation or application may be assisted by work within IMO. Reference may be made in this connection to the articles of the Convention that relate to safety at sea and the prevention, reduction and control of pollution of the marine environment, since many of these articles refer to or presuppose the existence of international regulations and standards adopted by IMO and by reference to which States may implement the principles in UNCLOS.

As indicated above, many articles of UNCLOS stipulate that the powers and obligations of States are to be exercised or discharged by reference to "generally accepted" or "applicable" international regulations and standards. In some cases, the Convention expressly states that the international rules or regulations involved are those established by "the competent international organization" (IMO) or by "general diplomatic conference". Furthermore, in many other cases the Convention does not specify the rules and regulations that are deemed to be "generally accepted" or "applicable". It would therefore be necessary for the appropriate bodies of IMO to consider what guidelines IMO can usefully provide to States in this regard.

ANNEX

PROVISIONS OF UNCLOS RELEVANT TO THE INSTRUMENTS AND WORK OF IMO

INNOCENT PASSAGE IN THE TERRITORIAL SEA
(rules applicable to all ships)

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
21	Laws and regulations of the coastal State relating to innocent passage	Paragraph 1: Matters concerning which the coastal State is entitled to adopt laws and regulations including safety of navigation, regulation of maritime traffic, protection of navigational aids and facilities, prevention of marine pollution (also article 211(4))	Reference to "rules of international law"	SOLAS Load Lines COLREG STCW MARPOL	
		Paragraph 2: Laws and regulations on design, construction, manning or equipment	Reference to "generally accepted international rules or standards"	SOLAS Load Lines MARPOL STCW	
		Paragraph 4: Laws and regulations on prevention of collisions	Reference to "generally accepted international regulations relating to the prevention of collisions at sea"	COLREG	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
22	Sea lanes and traffic separation schemes in the territorial sea	Paragraph 2: Nuclear-powered ships and ships carrying dangerous cargo			
		Paragraph 3: Duty of coastal States in establishing sea lanes and traffic separation schemes	Reference to the recommendations of the "competent international organization"	SOLAS (regulation V/10) COLREG (rules 1(d) and 10)) Res. A.572(14), as amended	IMO is the competent international organization.
		Paragraph 4: Duty to indicate sea lanes and traffic separation schemes on charts and duty of publicity		Res. A.572(14), as amended	Additional work may be undertaken as regards PSSA/special area requirements. (See Art 211.)
23	Foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances	Documentary requirements and special precautionary measures	Reference to "international agreements"	SOLAS (chapters VII and VIII) Code of Safety for Nuclear Merchant Ships IMO/IAEA Safety Recommendations on the Use of Ports by Nuclear Merchant Ships IMDG Code IBC Code IGC Code INF Code	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
24	Duties of the coastal State	Paragraph 2: Publicity in respect of dangers to navigation	IMO's field of competence (safety of navigation) SOLAS V/4 Res. A.706(17)		
27	Criminal jurisdiction on board a foreign ship	Criminal activity	Prevention of unlawful acts against the safety of navigation	SUA SUA Protocol	Consider possible roles of IMO in prevention of terrorist acts against ships.

STRAITS USED FOR INTERNATIONAL NAVIGATION
(transit passage)

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
39	Duties of ships and aircraft during transit passage through straits used for international navigation (applicable also to archipelagic sea lanes passage according to article 54)	Paragraph 2: Compliance with international regulations on safety at sea and prevention and control of pollution from ships	Reference to "generally accepted international regulations, procedures and practices", "including the International Regulations for Preventing Collisions at Sea"	SOLAS COLREG Load Lines STCW MARPOL	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
41	Sea lanes and traffic separation schemes in straits used for international navigation	Paragraph 3: Duty of States bordering straits in establishing sea lanes and traffic separation schemes	Reference to "generally accepted international regulations"	SOLAS V/10 COLREG (rules 1(d) and 10) Res. A.572(14), as amended	
		Paragraph 4: Duty to refer proposals concerning sea lanes or traffic separation schemes to the competent international organization	Reference to the "competent international organization"	SOLAS V/10 COLREG (rules 1(d) and 10) Res. A.572(14), as amended	IMO is the competent international organization.
		Paragraph 5: Duty for States bordering straits to cooperate in formulating proposals for sea lanes or traffic separation schemes	Reference to the "competent international organization"	SOLAS V/10	IMO is the competent international organization.
		Paragraph 6: Duty to indicate sea lanes and traffic separation schemes on charts and duty of publicity		Res. A.572(14), as amended SOLAS V/10	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
42	Laws and regulations of States bordering straits relating to transit passage (applicable also to archipelagic sea lanes passage according to article 54)	Paragraph 1: Matters concerning which the coastal State is entitled to adopt laws and regulations	Reference to the "generally accepted international regulations" on matters concerning safety at sea as provided in article 41, and to "applicable international regulations" within the scope of marine pollution	SOLAS COLREG Load Lines STCW MARPOL	
43	Navigational and safety aids and other improvements and the prevention, reduction and control of pollution	Duty of user States and States bordering straits to cooperate by agreement	IMO's fields of competence (navigational aids and vessel-source pollution)	SOLAS V/13 Res. A.857(20)	
44	Duties of States bordering straits (applicable also to archipelagic sea lanes passage according to article 54)	Publicity in respect of dangers to navigation	IMO's field of competence (safety of navigation)	SOLAS V/4 Res. A.706(17), as amended	

ARCHIPELAGIC STATES
(archipelagic sea lane passage)

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
53	Right of archipelagic sea lanes passage	Paragraph 8: Duty of archipelagic States in establishing sea lanes and traffic separation schemes	Reference to "generally accepted international regulations"	SOLAS V/10 COLREG (rules 1(d) and 10) Res. A.572(14), as amended Res. A.858(20) MSC.72(69)	
		Paragraph 9: Duty to refer proposals concerning sea lanes or traffic separation schemes to the competent international organization	Reference to the "competent international organization"	SOLAS V/10 COLREG (rules 1(d) and 10) Res. A.572(14), as amended Res. A.858(20) MSC.72(69)	IMO is the competent international organization.
		Paragraph 10: Duty to indicate sea lanes and traffic separation schemes on charts and duty of publicity		SOLAS V/10 Res. A.572(14), as amended Res. A.858(20) MSC.72(69)	IMO is the competent international organization.

EXCLUSIVE ECONOMIC ZONE

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
60	Artificial islands, installations and structures in the EEZ	Paragraph 3: Duty to remove abandoned or disused artificial islands, installations or structures, and duty of publicity with respect to their partial removal	Reference to "generally accepted international standards" established by the "competent international organization"	Res. A.672(16) London Convention (article III, and annex 17)	Notification of partial removal but also of non-removal should be forwarded to IMO.
		Paragraph 4: Safety zones around artificial islands, installations or structures	IMO's field of competence (safety of navigation)	Res. A.671(16)	Consider whether the provisions of res. A.671(16), particularly No.1(b), are compatible with article 60(4) of UNCLOS.
		Paragraph 5: Breadth of safety zones, and duty of publicity with respect to the extent of safety zones	Reference to "applicable international standards" and to "generally accepted international standards" or as recommended by the "competent international organization"	Res. A.671(16)	The coastal State is responsible for the dissemination of information.
		Paragraph 6: Navigation in the vicinity of artificial islands, installations, structures and safety zones	Reference to "generally accepted international standards"	Res. A.671(16)	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		Paragraph 7 : Non-interference with recognized sea lanes essential to international navigation	IMO's field of competence (safety of navigation)	Res. A.671(16) Res. A.572(14), as amended	

CONTINENTAL SHELF

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
80	Artificial islands, installations and structures on the continental shelf				Same as in relation to article 60 of UNCLOS.

HIGH SEAS

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
91 and 92	Nationality of ships and status of ships	Registration of ships	Prevention of unlawful acts against safety of navigation	SUA SUA Protocol Intervention 1969 Intervention Prot 1973 Mandatory IMO number schemes for ships and companies and registered owner (SOLAS)	
94	Duties of the flag State (applicable also to the EEZ as far as compatible with the EEZ regime according to article 58(2))	Paragraph 1: Flag State jurisdiction with respect to administrative, technical and social matters			
		Paragraph 3: Measures to ensure safety at sea on the following matters:	Reference to "generally accepted international regulations, procedures and practices" according to article 94(5)	SOLAS Load Lines COLREG MARPOL STCW STCW-F	1. The flag State must, as appropriate, comply with non-binding IMO instruments (Res. A.739(18), A.740(18), A.741(18)). 2. IMO rules and standards represent the minimum requirements <i>vis-à-vis</i> flag State jurisdiction.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		(a) Construction, equipment and seaworthiness of ships	As above	SOLAS Load Lines SFV MARPOL A.961(23)	
		(b) Manning of ships	Reference to "applicable international instruments"	STCW STCW-F SOLAS A.955(23)	
		(c) Signals, communications and prevention of collisions	Reference to "generally accepted international regulations, procedures and practices" according to article 94(5)	SOLAS COLREG International Code of Signals	
		Paragraph 4: The above measures shall include the following: (a) Survey of ships and duty to carry charts, nautical publications, instruments and equipment	As above As above	SOLAS MARPOL A.948(23) A.952(23)	
		(b) Technical qualification of the master, officers, and crew	Reference to "applicable international regulations"	SOLAS STCW STCW-F	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		<p>(c) Qualification of the master, officers, and crew in maritime law</p> <p>Paragraph 7: Duty of the flag State to conduct an investigation of any casualty occurring to its ships</p>	<p>Reference to "generally accepted international regulations, procedures and practices" according to article 94(5)</p> <p>IMO's field of competence</p>	<p>SOLAS STCW STCW-F A.947(23) MSC.209(81)</p> <p>SOLAS (regulation I/21) Load Lines (art. 23) MARPOL art. 6(4) and art. 12 Res. A.637(16)</p>	<p>1. The duty to investigate under relevant IMO regulations is limited to the purpose of determining the need for any changes to the pertinent convention.</p>
98	Duty to render assistance	<p>Paragraph 1: Duty of the master to render assistance to persons and ships</p> <p>Paragraph 2: Duty of the coastal State to promote search and rescue services</p>	<p>IMO's field of competence</p> <p>IMO's field of competence</p>	<p>Salvage SOLAS regulation V/33</p> <p>SAR SOLAS regulation V/7 GMDSS</p>	
100	Piracy	Duty of States to cooperate in the repression of piracy	IMO's field of competence (navigational and environmental risk)	<p>Res. A.738(18) Res. A.979(24)</p> <p>Res.1025(26) Res.1044(27)</p>	
108	Illicit traffic in narcotic drugs or psychotropic substances	Duty of cooperation for the suppression of illicit drug trafficking			

THE AREA

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
142	Rights and legitimate interests of coastal States	Right of coastal States to take proportionate measures beyond the territorial sea to avoid pollution resulting from or caused by any activities in the Area		Intervention Convention 1973 Intervention Protocol	
163	Organs of the Council (International Seabed Authority)	Paragraph 13: Each Commission may consult any competent organ of the United Nations or of its specialized agencies	Reference to the specialized agencies of the United Nations		IMO is a specialized agency of the United Nations.

PROTECTION AND PRESERVATION OF THE MARINE ENVIRONMENT

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
196	Use of technologies or introduction of alien or new species	Duty of States to take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or introduction of alien or new species to a particular part of the marine environment which may cause significant and harmful changes	IMO field of competence (environmental risk)	BWM 2004	
197	Cooperation on a global or regional basis	Duty of States to cooperate on a global or regional basis, directly or through competent international organizations, in elaborating international rules, standards and recommended practices and procedures	Reference to "competent international organizations"	Res. A.964(23)	IMO is a competent international organization.
198	Notification of imminent or actual damage	Duty of States to notify other States likely to be affected as well as the competent international organizations in cases of imminent danger or actual damage by pollution	Reference to "competent international organizations"	OPRC 1990 OPRC-HNS 2000	IMO is a competent international organization.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
199	Contingency plans against pollution	Duty of States in the affected area, in accordance with their capabilities, and the competent international organizations to cooperate in eliminating the effects of pollution and preventing or minimizing the damage	Reference to "competent international organizations"	OPRC 1990 OPRC-HNS 2000 MARPOL Annex I, reg. 26 & Annex II, reg. 16	IMO is a competent international organization.
200	Studies, research programmes and exchange of information and data	Duty of States to cooperate, directly or through competent international organizations, for the purpose of promoting studies, undertaking programmes of scientific research and encouraging the ex-change of information and data about pollution	Reference to "competent international organizations"	AFS2001	IMO is a competent international organization.
201	Scientific criteria for regulations	Duty of States to cooperate, directly or through competent international organizations, in establishing appropriate scientific criteria for the formulation of rules, standards and recommended practices and procedures	Reference to "competent international organizations"		IMO is a competent international organization.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
202	Scientific and technical assistance to developing States	Duty of States directly or through competent international organizations to (a) promote programmes of scientific, educational, technical and other assistance to developing States for the protection and preservation of the marine environment and the prevention, reduction and control of marine pollution; (b) provide appropriate assistance, especially to developing States, for the minimization of the effects of major incidents which may cause serious pollution of the marine environment; and (c) provide appropriate assistance, especially to developing States, concerning the preparation of environmental assessments	Reference to "competent international organizations"	IMO convention and specific treaty obligations under MARPOL LC 1972 OPRC 1990 OPRC-HNS 2000, STCW	<ol style="list-style-type: none"> 1. IMO is a competent international organization. 2. IMO's programme for technical co-operation and assistance for developing States.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
203	Preferential treatment for developing States	Granting of preferential treatment to developing States by international organizations in the allocation of appropriate funds and technical assistance, and the utilization of their specialized services, for the purpose of prevention, reduction and control of pollution of the marine environment or minimization of its effects	Reference to "international organizations"		IMO is among the international organizations subject to the duty to grant preference to developing States when allocating technical assistance.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
204 to 206	Monitoring and environmental assessment	Duty of States, directly or through the competent international organizations, to monitor the risks or effects of pollution of the marine environment; to publish reports of the results obtained or provide such reports to the competent international organizations, which should make them available to all States; and to assess the potential effects of planned activities under their jurisdiction or control which may cause substantial pollution of or significant and harmful changes to the marine environment, and to publish reports of the results of such assessments or provide them to the competent international organizations, which should make them available to all States	Reference to "competent international organizations"		IMO's participation and contribution to GESAMP. Upon receipt of reports of the results obtained by States on the risks or effects of pollution, IMO should make such reports available to all States.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
208 (also article 214 with respect to enforcement)	Pollution arising from or in connection with seabed activities and from artificial islands, installations and structures under coastal States jurisdiction	Duty of States to adopt laws and regulations, as well as other measures as may be necessary, to prevent, reduce and control pollution in a manner not less effective than provided for by international rules, standards and recommended practices and procedures; Duty of States, acting especially through competent international organizations, to establish such global and regional rules, standards and recommended practices and procedures	Reference to "competent international organizations"	Res. A.671(16) Res. A.672(16) OPRC 1990 OPRC-HNS 2000	Partly covered in MARPOL 73/78, Annex I, reg. 21. Further regulation of offshore activities is under discussion (but not agreed at this time). While pollution directly arising from exploration/exploitation is however not the direct concern of IMO, the Organization may contribute to the establishment of international regulations.
210	Pollution by dumping	Duty of States, acting especially through the competent international organizations, to establish global and regional rules, standards and recommended practices and procedures	Reference to "competent international organizations"	LC 1972 Resolution of the Consultative Meetings of Contracting Parties, LC PROT 1996	<ol style="list-style-type: none"> 1. IMO is a competent international organization. 2. The Consultative Meeting concluded that there were no fundamental inconsistencies between UNCLOS and the London Convention.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
211	Pollution from vessels	Paragraph 1: Duty of States, through the competent international organization, to establish international rules and standards concerning vessel-source pollution, and promotion of the adoption of routeing systems to minimize the threat of accidents which might cause marine pollution	Reference to the "competent international organization"	MARPOL SOLAS 1974, as amended, Chapter V/10 Res. A.572(14), as amended Res. A.858(20) AFS 2001 Res. A.962(23)	IMO is the competent international organization for establishing international rules and standards on vessel-source pollution.
		Paragraph 2: Duty of flag States to adopt laws and regulations on vessel-source pollution. Such laws and regulations shall at least have the same effect as that of generally accepted international rules and standards established through the competent international organization	Reference to "generally accepted international rules and standards established through the competent international organization"	MARPOL	1. IMO is the competent international organization. 2. National legislation shall have at least the same effect as MARPOL 73/78, as amended.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		<p>Paragraph 3: Duty of port and coastal States to give due publicity and to communicate to the competent international organization the particular requirements for the prevention, reduction and control of pollution of the marine environment as a condition for the entry of foreign vessels into their ports or internal waters or for a call at their off-shore terminals</p>	<p>Reference to the "competent international organization"</p>		<p>IMO is the competent international organization.</p>
		<p>Paragraph 5: Possibility for coastal States to adopt laws and regulations for the prevention of vessel-source pollution in their EEZ conforming to and giving effect to generally accepted international rules and standards established through the competent international organization</p>	<p>Reference to "generally accepted international rules and standards established through the competent international organization"</p>	<p>MARPOL</p>	<p>IMO is the competent international organization.</p>

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		<p>Paragraph 6: Possibility for coastal States, after appropriate consultations through the competent international organization, to adopt laws and regulations for the prevention, reduction and control of pollution from vessels for particular, clearly defined areas in their EEZ implementing such international rules and standards or navigational practices as are made applicable, through the organization, for special areas</p>		<p>MARPOL 7 A.982(24) SOLAS COLREG</p>	<p>MEPC 46(2001) revised the guidelines for designation of Special Areas under MARPOL 73/78 and guidelines for the identification and designation of Particularly Sensitive Sea Areas.</p>
		<p>Paragraph 6(a): Requirements and procedures to obtain recognition of a particular, clearly defined area</p>	<p>Reference to "consultations through the competent international organization with any other States concerned"</p>		<p>IMO is the competent international organization.</p>
		<p>Paragraph 6(c): Additional laws and regulations for the particular, clearly defined area related to discharges or navigational practices</p>	<p>Reference to "generally accepted international rules and standards" on the design, construction, manning or equipment of ships</p>	<p>SOLAS International Convention on Load Lines (LL1966) MARPOL STCW</p>	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		Paragraph 7: International rules and standards under article 211 include those relating to prompt notification to coastal States whose coastline or related interests may be affected by incidents, including maritime casualties, which involve discharges or probability of discharges	Reference to international rules and standards	MARPOL (article 8) and Protocol I OPRC 1990 (article 4)	IMO is the competent international organization for establishing international rules and standards concerning prompt notification of coastal States affected by pollution incidents.
212	Pollution from or through the atmosphere	Paragraph 1: National legislation must take into account internationally agreed regulations	Reference to "internationally agreed rules, standards and recommended practices and procedures"	MARPOL Annex VI (1997) (with the development of an IMO strategy for the emission of climate gases from ships)	IMO is competent for establishing global rules and standards.
		Paragraph 3: Establishment of global and regional rules, standards through competent international organizations	Reference to "competent international organizations"	A.963(23)	
216	Enforcement with respect to pollution by dumping	Enforcement of national legislation and applicable international regulations adopted through competent international organizations	Reference to "applicable international rules and standards" established through "competent international organizations"	LC 1972	IMO is a competent international organization.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
217	Flag State enforcement	Paragraph 1: Duty of flag States to ensure compliance by their vessels with applicable international rules and standards, established through the competent international organization	Reference to the "applicable international rules and standards, established through the competent international organization"	SOLAS MARPOL LL 1966 COLREG STCW	1. IMO is the competent international organization for establishing rules and standards on vessel-source pollution. 2. The flag State shall enforce MARPOL "as far as applicable".
		Paragraph 2: Duty of States to take appropriate measures in order to ensure that vessels flying their flag or of their registry are prohibited from sailing, until they can proceed to sea in compliance with the requirements of the international rules and standards established through the competent international organization	Mention of the international rules and standards referred to in paragraph 1 including those of design, construction, equipment and manning of ships	SOLAS LL 1966 MARPOL STCW	As above.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
		Paragraph 3: Duty of States to ensure that vessels flying their flag or of their registry carry on board certificates required by and issued pursuant to international rules and standards established through the competent international organization	Mention of the international rules and standards mentioned in paragraph 1	MARPOL	As above.
		Paragraph 4: Duty of the flag State to provide for immediate investigation and where appropriate institution of proceedings with respect to an alleged violation of rules and standards established through the competent international organization	Reference to "rules and standards established through the competent international organization"	MARPOL (article 4)	IMO is the competent international organization for establishing rules and standards on vessel-source pollution.
		Paragraph 7: Duty of flag States to inform the competent international organization of the action taken and its outcome	Reference to the "competent international organization"	MARPOL (article 4)	IMO is the competent international organization.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
218	Port State enforcement	Possibility for a port State to undertake investigations and institute proceedings against a vessel within its port or offshore terminal with respect to any discharge outside internal waters, territorial sea or exclusive economic zone of that State in violation of applicable international rules and standards established through the competent international organization	Reference to discharges in violation of "applicable international rules and standards established through the competent international organization"	SOLAS MARPOL LL 1966 COLREG STCW	1. IMO is the competent international organization for establishing international regulations on ships' discharges. 2. The port State may enforce MARPOL "as far as applicable" to that State.
219	Measures relating to seaworthiness of vessels to avoid pollution	Duty of States to take administrative measures to prevent vessels within their ports or offshore terminals which are in violation of applicable international rules and standards relating to seaworthiness of vessels and thereby threaten damage to the marine environment	Reference to "applicable international rules and standards relating to seaworthiness of vessels"	MARPOL SOLAS LL 1966 COLREG STCW	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
220	Enforcement by coastal States	Paragraph 1: Possibility for the coastal State to institute proceedings against a vessel within its port or offshore terminal with respect to any violation of its laws and regulations adopted in accordance with UNCLOS or applicable international rules and standards for the prevention, reduction and control of pollution from vessels occurred in its territorial sea or EEZ	Reference to "applicable international rules and standards for the prevention, reduction and control of pollution from vessels".	MARPOL	The coastal State may enforce MARPOL "as far as applicable" to that State.
		Paragraph 7: Duty of the coastal State to allow the vessel to proceed if compliance with requirements for bonding or other appropriate financial security has been assured whenever appropriate procedures have been established, either through the competent international organization or as otherwise agreed	Reference to the "competent international organization"		IMO is the competent international organization.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
221	Measures to avoid pollution arising from maritime casualties	Right of States, pursuant to international law, to take and enforce beyond the territorial sea measures proportionate to the actual or threatened damage to protect their coastline or related interests, from pollution or threat of pollution following upon a maritime casualty or acts relating to such a casualty, which may reasonably be expected to result in major harmful consequences		INTERVENTION 1969 INTERVENTION PROT 1973	
222	Enforcement with respect to air pollution	Duty of States to adopt laws and regulations to implement applicable international rules and standards established through competent international organizations concerning air-pollution	Reference to "applicable international rules and standards established through competent international organizations"	Annex VI to MARPOL	IMO is a competent international organization.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
223	Measures to facilitate proceedings	Duty of States to take measures to facilitate the hearing of witnesses and the admission of evidence submitted by , inter alia, the competent international organization, and to facilitate the attendance at such proceedings of official representatives of, inter alia, the competent international organization	Reference to "competent international organization"		IMO is a competent international organization.
226	Investigation of foreign vessels	Duty of States to not delay a foreign vessel longer than is essential for purposes of the investigations. Physical inspection of a foreign vessel must be limited to an examination of such certificates, records or other documents as the vessel is required to carry by generally accepted international rules and standards If the investigation indicates a violation of applicable laws and regulations or international rules and standards, release must be made promptly	Reference to "generally accepted international rules and standards" and to "applicable laws and regulations or international rules and standards"	MARPOL	

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
228	Suspension and restrictions on institution of proceedings	Special suspension and restriction conditions on proceedings to impose penalties	Reference to applicable international rules and standards relating to vessel-source pollution	MARPOL	
230	Monetary penalties and the observance of recognized rights of the accused		Reference to applicable international rules and standards relating to vessel-source pollution	MARPOL	
231	Notification to the flag State and other States concerned			MARPOL article 5(3)	
233	Safeguards with respect to straits used for international navigation	Right of States bordering straits to take appropriate enforcement measures against foreign ships which have violated safety and anti-pollution standards, causing or threatening damage to the marine environment of straits	Reference to "the laws and regulations referred to in article 42, paragraph 1(a) and (b)"		

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
235	Responsibility and liability	Duty of States to cooperate in the implementation of existing international law and the further development of international law relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes as well as development of criteria and procedures for payment of adequate compensation		1992 Civil Liability Convention 1992 Fund Convention HNS 1996 BUNKERS 2001	
237	Obligations under other conventions on the protection and preservation of the marine environment	Non-prejudice clause and duty of consistency with UNCLOS in carrying out specific obligations under special conventions	Reference to the conventions on the protection and preservation of the marine environment	MARPOL LC 1972 INTERVENTION 1969 OPRC 1990 CLC 1969 FUND 1971 HNS 1996	IMO conventions on the protection of the marine environment reflect principles compatible with UNCLOS.

MARINE SCIENTIFIC RESEARCH

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
242-244	International Cooperation	Promotion of international cooperation, publication and dissemination of information and knowledge	Reference to "competent international organizations"	MARPOL LC PROT 1996	IMO is a competent international organization.
261	Non-interference with shipping routes	The deployment and use of any type of scientific research installations or equipment must not constitute an obstacle to established international shipping routes			
262	Identification markings and warning signals	Duty to place identification markings on installations or equipment indicating the State of registry or the international organization to which they belong and to use adequate internationally agreed warning signals to ensure safety at sea taking into account rules and standards established by competent international organizations	Reference to "rules and standards established by competent international organizations"		IMO may be the most appropriate body for developing international rules and standards on warning signals. (Resolutions A.671(16) and A.672(16) on offshore installations have some relevance.)

DEVELOPMENT AND TRANSFER OF MARINE TECHNOLOGY

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
268	Basic objectives	Duty of States, directly or through competent international organizations, to promote: (a) the acquisition, evaluation and dissemination of marine technological knowledge and facilitate access to such information and data; (b) the development of appropriate marine technology; (c) the development of the necessary technological infrastructure to facilitate the transfer of marine technology; (d) the development of human resources through training and education of nationals of developing States and countries and especially the nationals of the least developed among them; (e) international cooperation at all levels, particularly at the regional, subregional and bilateral levels	Reference to "competent international organizations"		The pertinent objectives of the transfer of technology are part of the ITCP.

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
269 to 272	Measure and arrangement to achieve the basic objectives		Reference to "competent international organizations"		IMO may refer to some of the specific arrangements and measures envisaged in UNCLOS.
275 to 277	National and regional marine scientific and technological centres		Reference to "competent international organizations"		

SETTLEMENT OF DISPUTES

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
288	Compulsory procedures entailing binding decisions	Jurisdiction of courts or tribunals	Reference to the "interpretation or application of an international agreement related to the purposes of this Convention"	1996 Protocol to the London Convention	The 1996 Protocol to the London Convention is the only IMO convention which permits parties to use the dispute settlement procedures of UNCLOS.
292	Prompt release of vessels and crews	Submission by the flag State to a court or tribunal for release of a vessel or its crew if the detaining State has not complied with provisions for prompt release of the vessel or its crew upon the posting of a bond or financial security			

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
297	Limitations on applicability of section 2 (dealing with compulsory procedures entailing binding decisions)	Paragraph 1(c): Disputes concerning the interpretation or application of UNCLOS arising from an alleged contravention by a coastal State of specified anti-pollution standards shall be subject to the compulsory procedures entailing binding decisions established in section 2	Reference to applicable "international rules and standards for the protection and preservation of the marine environment" which have been established "through a competent international organization"	MARPOL London Convention	In certain cases, IMO anti-pollution standards may be subject to compulsory procedures entailing binding decisions.

FINAL PROVISIONS

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
311	Relationship to other conventions and international agreements	UNCLOS shall not alter international agreements compatible with the Convention or expressly permitted by the Conventions' provisions		IMO's treaties and other international regulations	

ANNEXES

Articles of UNCLOS	Subject-Matter	Specific provisions on the subject-matter	Relationship between UNCLOS and IMO instruments	Relevant IMO instruments	Comments/recommendations
Annex VI article 22	Competence of the International Tribunal for the Law of the Sea	Reference of disputes subject to other agreements	Reference to "a treaty or convention already in force and concerning the subject-matter covered by this Convention"	IMO treaties in force related to the purposes of UNCLOS	Parties to the treaty may agree to have recourse to the Tribunal.
Annex VIII article 2	List of experts	List of experts in the field of navigation, including pollution from vessels and by dumping	Reference to the "International Maritime Organization"		