



Book - Unit 6 - Vessel-Based Sources of Marine Pollution

Book - Unit 4 - Vessel-Based Sources of Marine Pollution

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Course: Introductory Course to the International Legal Framework on Marine Pollution

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1. Pollution from vessels

Pollution from vessels can take the forms of oil, chemicals, lost cargo and equipment, sewage, garbage, fumes and invasive exotic species.

Oil pollution comprises about 71% of vessel-based marine pollution. Discharges may be accidental (9.4%) but are mostly operational, such as through diesel emissions in fumes, or oil residue in bilge and ballast water and hull washings (62%). The total annual oil spillage into the oceans is estimated at one million tonnes dumped in standard operations and 200,000 tonnes spilled in tanker accidents per year. In addition, 250,000 tonnes of oil spill annually results from retirement of oil vessels from transportation activities. Chances of vessel accidents and resultant pollution are increased by inadequate port facilities, poor or improper construction and maintenance of vessels and inadequate capacity of vessel crew to safely operate them.

2. International Maritime Organization

An international conference held in Geneva in 1948 adopted a convention formally establishing the Inter-Governmental Maritime Consultative Organization (IMCO), which name was changed in 1982 to International Maritime Organization (IMO). The IMO Convention entered into force in 1958 with a mission to promote safer shipping and cleaner seas. It has the responsibility, inter alia, to establish rules for prevention of marine pollution from ships

Since, IMO addressed vessel-based marine pollution prior to the negotiation of UNCLOS, the Law of Sea did not elaborate operational controls for vessels, instead referring to standards established by the “competent international organization,” in this case the IMO.

3. International Convention for the Prevention of Pollution of the Sea by Oil

The International Convention for the Prevention of Pollution of the Sea by Oil (“OILPOL”), adopted in 1954 was the result of negotiations led by the government of the United Kingdom and provided certain functions to IMO. The Convention establishing IMO and the OILPOL convention entered into force within a few months apart.

OILPOL applied to tankers engaged in the transportation of oil. Articles I, II, II, and IV prohibited discharges of oil into the sea except under specified conditions. It prohibited discharge of persistent oil or oily mixtures of greater than 100 parts per million (“ppm”) within fifty nautical miles (“nm”) of land or within special areas and regulated the rates of discharge (e.g. to a rate of sixty litres/nm to a maximum of 1/15,000 of oil cargo). However, exemptions applied if no oil reception facilities were available in the port of destination and the lack of available reception facilities at oil terminals remains a problem today, especially in developing countries.

Achievements and limitations

Requirements introduced in 1969 mandated that new oil cargoes be loaded on top of old ones and that tankers be washed out with high pressure crude oil which is retained rather than sea water that is discharged, resulting in a 30% drop in discharges. In 1971, separate ballast tanks became mandatory, so that oil cargo tanks did not need to be filled with sea water as ballast. Special areas where no discharges were permitted were declared, including the Great Barrier Reef, the Black Sea, the Baltic Sea and the North Sea.

However, OILPOL dealt only with oil, leaving out other contaminants that might be discharged during sea transportation activities. It also left out many issues concerning marine pollution, such as measures to avoid tanker accidents and safety at sea. It did not address matters concerning compensation to those who suffer financially as a result of pollution, proper vessel design and construction and marine rescue systems and crew standards, all of which have a bearing on marine pollution. In light of increased sea transportation activities and steady increases in the sizes of vessels, the threats of pollution loomed prominently. The problem was dramatized by the “Torrey Canyon” disaster, described earlier.

4. International Convention for the Prevention of Pollution from Ships (MARPOL)

The IMO's efforts to develop more comprehensive measures to address marine pollution beyond just oil led to MARPOL, the International Convention for the Prevention of Pollution from Ships. The Convention was adopted in 1973, altered by the 1978 Protocol, and entered into force in 1983 superseding OILPOL. 1973 MARPOL applies to ships flying or entitled to fly the flag of parties and ships operating under the authority of a party but excludes warships, naval auxiliary and/or ships owned or operated by a state and used only on government non-commercial service (article 3).

The core of 1973 MARPOL lies in its annexes that deal with all types of pollution by ships (excluding dumping), rather than oil discharges alone. MARPOL's six annexes deal with: (I) pollution by oil, (II) pollution by noxious liquid substances in bulk, (III) pollution by harmful substances carried by in packaged form, (IV) sewage, (V) garbage, and (VI) air pollution. Other than Annexes I and II, Annexes III, IV, V and VI are optional and can be ratified separately from the main body of MARPOL. This results in different parties being signatories to the various Annexes. All the Annexes have entered into force and most of them amended. Annex I sets out rules for controlling oil pollution, incorporating OILPOL. Annex V prohibits the disposal at sea of certain kinds of garbage, such as rope, plastic and fishing nets, but permits disposal of food and other specified wastes.

Key provisions

Key provisions of 1973 MARPOL include:

- Articles 4, 5 and 6 requiring states to create and enforce appropriate national laws implementing MARPOL;
- Article 5 requiring parties to inspect ships flying their flags or operating under their authority to determine their compliance status before issuing them with certificates that authorize operation. Inspection of oil tankers is required before an International Oil Pollution Prevention Certificate is issued and a ship is authorized to operate an oil transporter and, thereafter, at intervals of not more than five years;
- Article 6 authorizing parties to inspect foreign ships entering their territorial waters to determine whether they have discharged any harmful substances into the territorial waters or elsewhere and, if so, to institute court proceedings;
- Article 6 authorizing parties to carry out inspection of all ships in their ports to determine whether they have compliance certificates and, if they do not, to deny them sailing rights. Article 7 establishes that inspections are to be conducted in an expeditious manner to avoid undue delay or detention of a ship; and
- Article 10 requiring disputes concerning the application or interpretation of MARPOL to be resolved through negotiation, and, if parties do not agree, be submitted upon request of any of them to arbitration.

5. International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC)

Work by the IMO on vessel accidents and emergencies that threaten the marine environment led to the development of the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC) adopted in 1990, which came into force in 1995. It was followed by a Protocol relating to hazardous and noxious substances (OPRC-HNS Protocol), which was adopted in 2000 and entered into force in 2007.

The OPRC mandates that parties establish national measures to deal with vessel accidents that threaten to pollute the marine environment that include requirements that:

- Vessels flying their flags, installations operating in their territorial waters and persons undertaking land-based activities within their jurisdiction that might lead to pollution of the marine environment must prepare plans to deal with oil pollution emergencies (article 3(1)).
- Vessel operators adopt an oil pollution emergency plan developed by the IMO, known as Shipboard Oil Pollution Emergency Plan and carry it at all times to guide them on what to do in case of emergency.

The OPRC-HNS Protocol covers any substance other than oil which, if introduced into the marine environment is likely to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea. It ensures preparedness and response regimes similar to those already in existence for oil incidents.

Response and Cooperation Systems

The OPRC also requires parties to establish national systems, including detailed plans, for responding promptly to oil pollution accidents (article 3(2)) and training and equipping people to combat oil spills and for making oil spill combating equipment available. Parties are also required to establish regulations and procedures for ship operators to report any pollution incidents to coastal authorities and other responsible governmental bodies for action to be taken in accordance with provisions of the Convention (article 4).

In addition to pollution emergency control measures at the national level, OPRC require parties to establish systems for cooperation to assist each other in the event of an oil vessel accident or other emergencies threatening to cause marine pollution. Several such systems have been established at sub-regional levels with the Regional Seas Programme, such as, the Mediterranean Sea, the Wider Caribbean region or Western Africa.

6. Other Conventions

The International Convention on the Control of Harmful Anti-fouling Systems on Ships was adopted in 2001 and came into force in 2008. It is designed to protect the marine environment and human health from the harmful effects of organotin-based anti-fouling systems on ships, such as tributyltin (“TBT”). Parties to the Convention are required to prohibit and/or restrict the use of harmful anti-fouling systems listed in an annex to the Convention.

The IMO International Convention for the Control and Management of Ships Ballast Water and Sediments was adopted on 13 February 2004. Its objective is to minimize and eliminate the international transfer of marine pests and pathogens contained in ships’ ballast water and sediments. Vessels must carry a Ballast Water Record Book and a certificate that indicates they are properly equipped. Parties are required to ensure that there are adequate reception facilities in ports where cleaning or repair of ballast tanks occurs so that ballast water and sediment can be discharged into them.

The most recent vessel standard developed by the IMO is the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships adopted in 2009. It addresses the elimination or minimization of risks that ship recycling poses to human health and the environment.

7. Enforcement

Vessel-based pollution control standards have gradually moved away from discharge limits to design and equipment standards. These are easier to enforce and more effective in preventing pollution. Vessel activities at sea are largely unmonitored and unknowable. Surveillance, boarding, inspections and detentions are resource intensive, cumbersome and expensive.

Wise drafting is essential to avoid reliance on complicated and expensive enforcement actions while still implementing marine environmental standards. A useful technique to promote more cost-effective implementation is to interlink responsibilities and powers for enforcement across an international network of governments. For example, allocating to each flag state, coastal state and port state a share of policing powers and responsibilities can improve policing of vessel-based pollution. Enforcement provisions in UNCLOS seek to achieve this outcome.

Flag State

Under UNCLOS article 217, the role of the flag state in policing vessels remains strong but is not exclusive.

Flag states are to adopt laws to effectively enforce international norms and to prohibit vessels which are not in compliance with international norms from sailing. They are also to ensure that their vessels carry the certificates required and issued pursuant to international rules and must immediately investigate violations when requested by other states, regardless of where the violation occurred.

Port State

Where a vessel is voluntarily in port, the port state may prevent a vessel from sailing where it is in breach of international standards and threatens to cause marine pollution (UNCLOS article 219). The port state is also permitted under article 218 to undertake investigations and institute proceedings related to a polluting discharge by a foreign vessel on the high seas, which violates applicable international rules.

Under the Memoranda of Understanding on Port State Control first signed by European States in 1982 and reviewed in 2011 and by other regions, port states agreed to conduct inspections of vessels in port. These undertakings ensure that most vessels are subject to regular examination for compliance with applicable international pollution prevention and safety standards. Non-compliant vessels may be detained until appropriate remedial action has been taken. UNCLOS also authorizes coastal states to physically inspect and to detain vessels within the territorial sea or exclusive economic zone (article 220).

8. Liability

International marine pollution liability regimes are agreements that enable persons to receive compensation where an international shipping activity has caused pollution. The fundamental elements are a defined pollution incident which has caused damage to the covered interests of those persons. The ship owner is strictly liable for paying compensation up to a defined limit set out under the liability regime. The compensation is paid through the courts where the injury was suffered.

Those liability regimes currently in force are the 1969 International Convention on Civil Liability for Oil Pollution Damage and the 1971 International Oil Pollution Compensation Fund Convention. The latter applies where a ship owner is not financially capable of, providing compensation and provides a limited amount of additional compensation where the pollution damage suffered exceeds the compensation available under the Civil Liability Convention. Article 235 of UNCLOS urges further development of liability regimes. The 2001 Convention on Civil Liability for Marine Pollution caused by Bunker Oils entered into force in 2008 to ensure adequate, prompt, and effective compensation to persons who suffer damage caused by spills of oil, when carried as fuel in ships' bunkers.

Neither the IMO 1997 Convention on civil liability for marine pollution caused by hazardous and noxious substances which was superseded by the 2010 Protocol, nor the 2007 Nairobi International Convention on the Removal of Wrecks have come in to force.