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TRƯỜNG ĐẠI HỌC HÀNG HẢI VIỆT NAM
VIỆN MÔI TRƯỜNG

ENVIRONMENTAL LAW AND POLICY

Lecture 10.2. International Convention for the Prevention of Pollution from Ships (MARPOL)

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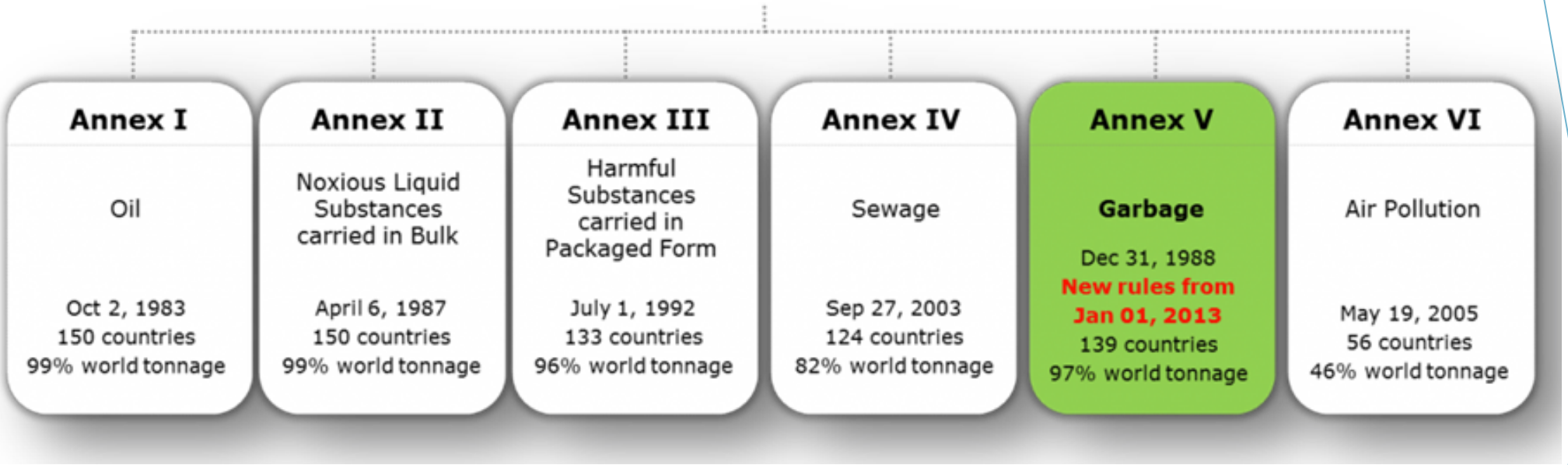
History of the International Convention for the Prevention of Pollution from Ships - MARPOL

- The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.
- The MARPOL Convention was adopted on 2 November 1973 at IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI was added which entered into force on 19 May 2005. MARPOL has been updated by amendments through the years.
- The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.

MARPOL's Annexes



Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

- Covers prevention of pollution by oil from operational measures as well as from accidental discharges; the 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls and brought in a phase-in schedule for existing tankers to fit double hulls, which was subsequently revised in 2001 and 2003.
- 39 regulations in 7 chapters to regulate oil pollution from ships (not just tankers):
  - Ship/tanker design
  - Ship/tnker operation

Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

Chapter	Regulations	
1	1 – 5	Definitions and applications
2	6 – 11	Surveys and certification: Flag administration and Port State Control (PSC)
3	12 – 17	Machinery space: Construction, discharge control and equipment (all ship types)
4	18 - 36	Cargo areas: Construction, discharge control and equipment (oil tanker)
5	37	Shipboard oil pollution emergency plan (SOPEP)
6	38	Reception facilities
7	39	FPSOs and FSUs

Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

All discharges of oil are prohibited unless certain criteria are satisfied:

- **Machinery space (bilge and sludge)**
  - All ship types
  - Machinery space
    - Bilge waste: oily water from the bilges
    - Sludge: waste residue from the filtration of fuel oil
  - Ship must be en route
  - Oily mixture must have been processed through the oil filtering equipment.
  - Oil content of the misture does not exceed 15 ppm.
  - Oily mixture is not mixed with cargo residues.

Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

All discharges of oil are prohibited unless certain criteria are satisfied:

- **Cargo space (slops)**
  - Oil tankers
  - Must be more than 50 nautical miles from nearest land
  - 30 litres per nautical mile
  - Discharged through the Oil discharge monitoring equipment (ODME)
  - Maximum discharge quantity on a ballast voyage should not exceed 1/30,000 of the total quantity of the particular cargo of which the residue formed a part.

Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

All discharges of oil are prohibited unless certain criteria are satisfied:

- Oil discharge monitoring and control systems (tankers): See regulation 31 & 32.
- Oil filter equipment (all ship types): See regulation 14.
- Oil discharge monitoring equipment (ODME)
- Oily Water Separators (OWS)

Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

Special Areas:

- All the previous discharge criteria regulates outside a Special Area.
- Regulation 1 – "*Special area* means 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."
- And as such there shall be NO discharge whatsoever of cargo residues/slops from oil tankers.

Annexes I – Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)

Special Areas include:

1. The Mediterranean Sea area
2. The Baltic Sea area
3. The Black Sea area
4. The Red Sea area
5. The Gulfs area
6. The Gulf of Aden area
7. The Antarctic area
8. The North West European waters
9. The Oman area of the Arabian Sea

Annexes II – Regulations for the Control of Pollution by Liquid Noxious Substances in Bulk

- Annex II can be divided into two clear sections:
  - i. Pollution categories
  - ii. Ship type requirements

- Additionally there are also the:
  - iii. Operational requirements *(for the actual/physical carriage of chemicals in bulk)*

Pollution categories:

Categorization and listing of noxious liquid substances into four categories (according to Regulation 6 of Annex II to the MARPOL Convention)

Category	Hazard to marine resources or to human health	Harm to amenities or other legitimate uses of the sea
X	Major hazard	Serious harm
Y	Hazard	Harm
Z	Minor hazard	Minor harm
OS*	No categorization under group X, Y or Z according to regulation 6.1	Considered to present no harm

The carriage and discharge of non-categorized substances are prohibited (Paragraph 1.3 of Regulation 13 of Annex II to the MARPOL Convention).

Discharging of residues of noxious liquid substances Regulation 13 of Annex II to the MARPOL Convention:

- Before any prewash or discharge procedure is carried out in accordance with the conditions stipulated below, the relevant tank shall be emptied to maximum extent in accordance with the procedures prescribed in the Manual.

Discharging of residues of noxious liquid substances Regulation 13 of Annex II to the MARPOL Convention:

Group	Discharge requirements
X	- Tank must be prewashed before leaving the port. - Resulting residues must be discharged to a reception facility until the concentration of the substance in the effluent to such facility is at or below 0,1% by weight ((sample analysis). - Remaining tank washings must be discharged to the reception facility. Any water subsequently introduced into the tank may be discharged into the sea in accordance with the discharge standards in Paragraph 2 of Regulation 13 of Annex II to the MARPOL Convention.

Discharging of residues of noxious liquid substances Regulation 13 of Annex II to the MARPOL Convention:

Group	Discharge requirements
Y	- Tank must be prewashed before leaving the port, as far as the unloading of the cargo has not been carried out in accordance with the Manual. - Tank washings shall also be discharged to a reception facility **In cases of high-viscosity or solidifying substances in category Y:** - Prewashing is to be carried out in accordance with Appendix 6 of Annex II. - The residue/water mixture must be discharged to a reception facility until the tank is empty. Any water subsequently introduced into the tank may be discharged into the sea in accordance with the discharge standards in Paragraph 2 of Regulation 13 of Annex II.

Discharging of residues of noxious liquid substances Regulation 13 of Annex II to the MARPOL Convention:

Group	Discharge requirements
Z	- Tank must be prewashed before leaving the port, as far as the unloading of the cargo has not been carried out in accordance with the Manual. - Tank washings shall also be discharged to the reception facility. Any water subsequently introduced into the tank may be discharged into the sea in accordance with the discharge standards in Paragraph 2 of Regulation 13 of Annex II.

Discharging of residues of noxious liquid substances Regulation 13 of Annex II to the MARPOL Convention:

Group	Discharge requirements
All substances of the categories X, Y and Z	- Discharge Standards - Ship is proceeding en route. - Minimum speed of 7 kn (self-propulsion) or 4 kn (without self-propulsion). - Discharging below the waterline at least 12 nm from the nearest land in a depth of water at least 25 m

Discharging of residues of noxious liquid substances Regulation 13 of Annex II to the MARPOL Convention:

- Within the Antarctic area of jurisdiction, any and all discharging of noxious liquid substances or mixtures containing such substances is forbidden in accordance with Paragraph 8.2 of Regulation 13 Annex II.

Ship types

What is an IMO Ship Type?

- The International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk IBC Code provides detailed standards for the construction and equipment of three types of chemical tankers (Types 1, 2 and 3)
- The bulk carriage of any liquid product other than those defined as oil (subject to MARPOL Annex I) is prohibited unless the product has been evaluated and categorised for inclusion in Chapter 17 or 18 of the IBC Code.

Ship types

IMO Ship Type 1

is a chemical tanker intended for the transportation of products considered to present the greatest overall hazard. The quantity of cargo required to be carried in a Type 1 ship should not exceed 1,250 m3 in any one tank.

IMO Ship Type 2

is intended to transport products with appreciably severe environmental and safety hazards which require significant preventive measures to preclude escape of such cargo. The quantity of cargo required to be carried in a Type 2 ship should not exceed 3000 m3 in any one tank.

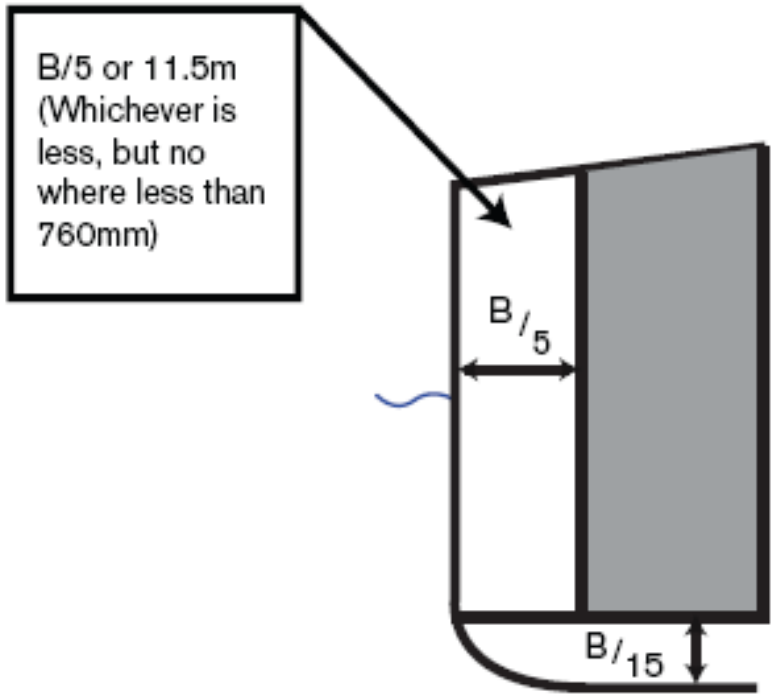
IMO Ship Type 3

is a chemical tanker intended to transport products with sufficiently severe environmental and safety hazards. These products require a moderate degree of containment to increase survival capability in a damaged condition. There is no filling restriction for chemicals assigned to Ship Type 3.

Ship types

Cargo Tank Location: Cargo tanks shall be located at the following distances inboard:

- Type 1 ships: from the side shell plating, not less than the transverse extent of damage specified in 2.5.1.1.2, (B/5 or 11.5m whichever is less), and from the moulded line of the bottom shell plating at centreline, not less than the vertical extent of damage specified in 2.5.1.2.3, (B/15 or 6 m whichever is less), and nowhere less than 760 mm from the shell plating. This requirement does not apply to the tanks for diluted slops arising from tank washing.

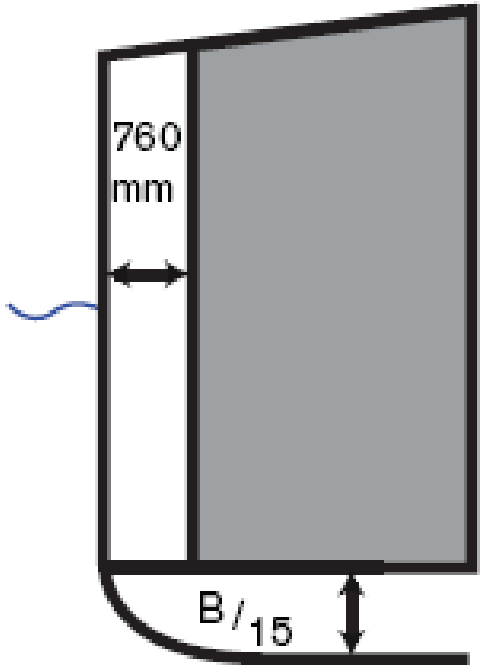


Type I Tank Configuration

Ship types

Cargo Tank Location: Cargo tanks shall be located at the following distances inboard:

- Type 2 ships: from the moulded line of the bottom shell plating at centreline, not less than the vertical extent of damage specified in 2.5.1.2.3, (B/15 or 6 m which ever is less), and nowhere less than 760 mm from the shell plating. This requirement does not apply to the tanks for diluted slops arising from tank washing.

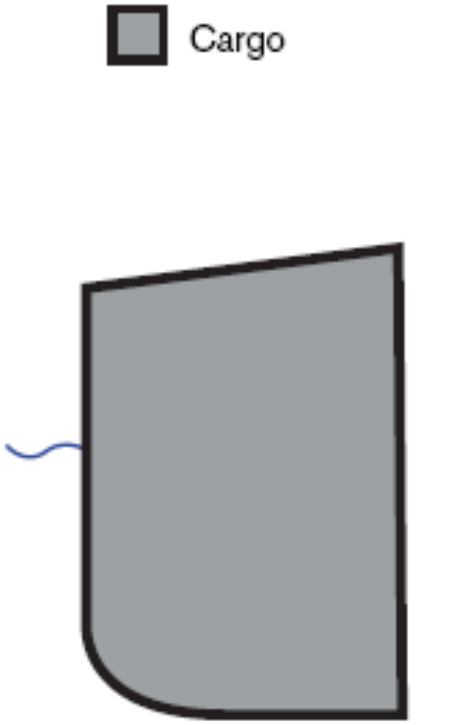


Type II Tank Configuration

Ship types

Cargo Tank Location: Cargo tanks shall be located at the following distances inboard:

- Type 3 ships: no requirement"



Type III Tank Configuration

Operational requirements

Category	BCH Ships Constructed before 31/7/1986	Existing IBC Constructed from 31/7/1986 but before 1/1/2007	New Buildings Constructed from 1/1/2007	Ships Other than Chemical Tankers constructed before 1/1/2007
X	Pre Wash Strip to 350 Litres 12 mile 25m water depth 7 knots, en-route	Pre Wash Strip to 150 Litres 12 mile 25m water depth 7 knots, en-route	Pre Wash Strip to 75 Litres 12 mile 25m water depth 7 knots, en-route	Carriage Prohibited
Y	Pre Wash for solidifying for high viscosity substances Strip to 350 Litres 12 mile 25m water depth 7 knots, en-route	Pre Wash for solidifying for high viscosity substances Strip to 150 Litres 12 mile 25m water depth 7 knots, en-route	Pre Wash for solidifying for high viscosity substances Strip to 75 Litres 12 mile 25m water depth 7 knots, en-route	Carriage Prohibited
Z	Strip to 950 Litres 12 mile 25m water depth 7 knots, en-route	Strip to 350 Litres 12 mile 25m water depth 7 knots, en-route	Strip to 75 Litres 12 mile 25m water depth 7 knots, en-route	Strip to Maximum Extent 12 mile 25m water depth 7 knots, en-route
OS	No carriage Requirements	No Carriage Requirements	No Carriage Requirements	
Underwater Discharge Required	Only X and Y cargoes	Only X and Y cargoes	X,Y and Z cargoes	

In class discussion:

15 minutes for preparation, 7 minutes for presentation

Group	Tasks
1	Major content and practising of Annex III around the world
2	Major content and practising of Annex IV around the world
3	Major content and practising of Annex V around the world
4	Major content and practising of Annex VI around the world