

# IMO Committee Report

## Marine Environment Protection Committee (MEPC) session 54 : held 20~24 March, 2006

The 54<sup>th</sup> session of the IMO Marine Environment Protection Committee (MEPC 54) was held from 20<sup>th</sup> to 24<sup>th</sup> March, 2006. The relevant outcome of the session is summarised below.

### Consideration and adoption of amendments to mandatory instruments

The following amendments, details of which are contained in the extracts from the ME PC 54/WP.8 to be found at the end of this document, were approved at this meeting :

#### **Revised MARPOL Annex I, Regulation 1 "Definitions" :**

For the purpose of the new regulation 12A mentioned below, a new paragraph 28.9, defining a ship delivered on or after 1<sup>st</sup> August, 2010, has been added after 28.8.

#### **Revised MARPOL Annex I, Regulation 12A "Oil fuel tank protection" :**

The previously drafted regulation 13A was re-numbered 12A, so as not to cause any confusion with regulation 13A of the current version of MARPOL Annex I, and editorially amended.

This new regulation is applicable to all ships with an aggregate oil fuel capacity of 600 m<sup>3</sup> and above which are delivered on or after 1<sup>st</sup> August, 2010, as defined in regulation 1.28.9 of Annex I.

The most significant editorial amendments to this new regulation, compared to the version previously circulated as part of the report from MEPC 53, are :

- The definition of an "oil fuel tank" specifically excludes those tanks which would not contain oil fuel in normal operation, such as overflow tanks;
- The total volume of oil fuel "C" specifically includes that of the small fuel tanks;
- The "oil fuel capacity" is the volume of a tank at 98% filling;
- The "oil outflow" ( $O_{B0}$ ) is not to be more than the tank capacity; and
- For the purposes of maintenance and inspection, any oil fuel tanks that do not border the outer shell plating shall be located no closer to the bottom shell plating than the minimum value of "h" in paragraph 6 and no closer to the side shell plating than the applicable value of "w" in paragraph 7 or 8.

#### **Consequential amendments to the Supplement of the IOPP Certificate (Forms A and B) :**

A new paragraph 2A has been added to cover the requirements of the new regulation 12A.

#### **Revised MARPOL Annex I, Regulation 21 "Prevention of oil pollution from oil tankers carrying heavy grade oil as cargo" :**

The previous paragraph 2.2 has been amended to specifically exclude "crude oils" from the definition of "heavy grade oil".

This amendment will enter into force on 1<sup>st</sup> August, 2007.

#### **Resolution.MEPC.139(53) "Guidelines for the application of the revised MARPOL Annex I requirements to floating production, storage and offloading facilities (FPSOs) and floating storage units (FSUs)" :**

The table in annex 1 to these guidelines have been amended as follows :

- A row has been added dealing with the new regulation 12A "oil fuel tank protection", which states that this regulation applies to new purpose built FPSOs and FSUs, excluding paragraph 6. Paragraph 6 would, however, be applicable when the vessel was undertaking any voyage away from its operating station.
- The row dealing with regulation 37 has been amended to dealing with regulations 37.1 to 37.3.
- A row has been added dealing with regulation 37.4 "access to stability and residual strength calculation programmes", which states that this regulation is applicable.

The "record of construction and equipment for FPSOs and FSUs" has been amended as a consequence to the requirements of the new regulation 12A.

#### **Unified Interpretation on application of regulation 12A to column stabilized units (MODUs) as defined in the Code for the construction and equipment of Mobile Offshore Drilling Units adopted by Resolution A.649(16), as amended :**

For the purpose of arranging oil fuel tanks, the location limitations of paragraphs 7 and 8 of regulation 12A apply to those areas subject to damage, are as follows :

- Columns, underwater hulls and braces on the periphery of the unit shall be assumed to be damaged and the damage shall be assumed in the exposed portions of the columns, underwater hulls and braces;
- Columns and braces shall be assumed to be damaged at any level between 5.0 m above and 3.0 m below the range of draughts in the MODUs operating manual for normal and severe weather operations; and

- Underwater hull and footings shall be assumed to be damaged when operating in a transit condition in the same manner as indicated in .1 and .2, having regard to their shape.

**Revised MARPOL Annex IV, Chapter 5 “Port State Control”, Regulation 13 “Port State control on operational requirements” :**

A new chapter 5 and regulation 13 has been added. These “port state control” requirements apply to a ship when in port or an offshore terminal.

This amendment will enter into force on 1<sup>st</sup> August, 2007.

**Amendments to the Code for the construction and equipment of ships carrying dangerous chemicals in bulk (BCH Code) :**

As a consequence to the amendments to MARPOL Annex II, which will enter into force on 1<sup>st</sup> January, 2007, a number of amendments have been made to all chapters of this Code, also the “model form of certificate of fitness for the carriage of dangerous chemicals in bulk”.

These amendments will enter into force on 1<sup>st</sup> August, 2007.

Early and effective application of these amendments is being recommended, in line with the entry into force date of the revised MARPOL Annex II on 1<sup>st</sup> January, 2007.

**Interpretations and amendments of MARPOL 73/78 and related instruments**

While some of the topics raised are now to be referred to various Sub-Committees, the significant outcome is as follows :

**Unified interpretation of the revised MARPOL Annex I, Regulation 22 “Pump-room bottom protection”, paragraph 5 :**

The following unified interpretation has been agreed :

The term “pump-room” means a **cargo pump-room**. Ballast piping is permitted to be located within the pump-room double bottom provided any damage to that piping does not render the ship’s pumps located in the “pump-room” ineffective.

The double bottom protecting the “pump-room” can be a void tank, a ballast tank or, unless prohibited by other regulations, a fuel oil tank.

**Impact of the entry into force of the revised MARPOL Annex I upon the IOPP Certificate :**

It was noted that upon the expected entry into force of the revised MARPOL Annex I, on 1<sup>st</sup> January, 2007, the world’s merchant fleet would still be carrying IOPP Certificates and supplements issued under the current MARPOL Annex I. A possible conflict might develop when Port State control officers checked the validity of IOPP Certificates issued under the current MARPOL Annex I after 1<sup>st</sup> January, 2007.

It was agreed that IOPP Certificates and supplements in effect at the time of entry into force of the revised MARPOL Annex I should be accepted, particularly by Port State control officers, until the expiry date of the associated IOPP Certificate, at which time a new Supplement complying with the new requirements under the revised MARPOL Annex I would be issued for attachment to the renewed IOPP Certificate.

**Harmful aquatic organisms in ballast water**

A total of fifteen (15) papers were submitted, which were considered at plenary.

To date, a total number of six (6) countries (Maldives, Saint Kitts and Nevis, the Syrian Arab Republic, Spain, Nigeria and Tuvalu) have ratified or acceded to the Ballast Water Management Convention, becoming Contracting States. This is an insufficient number to bring this convention into force, which will occur 12 months after ratification by 30 States, representing 35 per cent of world merchant shipping tonnage. The remaining Member States were urged to give consideration to the ratification, acceptance, approval of, or accession to, the BWM Convention at the earliest possible opportunity.

The final draft of the “Guidelines for approval and oversight of prototype ballast water treatment technology programmes” (G10) was adopted.

The drafting of a number of guidelines (G2, G7, G11 and G13) is being referred to the BLG Sub-Committee, to be discussed at their 10<sup>th</sup> Session, with a view to having them adopted at MEPC 55.

**Recycling of ships**

Following on from decisions made by the 24<sup>th</sup> Council Assembly that met between 21<sup>st</sup> November ~ 2<sup>nd</sup> December, 2005, a total of twelve (12) papers were submitted, which included the first draft of the new legally-binding instrument for safe and environmentally sound recycling of ships. These papers were considered at plenary and referred to a Working Group.

The outcome from this Working Group, which was approved at plenary, was as follows :

- The draft amendments to the first draft of the new legally-binding instrument for safe and environmentally sound recycling of ships;
- The start of the development of the Guidelines on Inventory of Hazardous Materials;
- An agreement to coordinate with any future meeting of the Joint ILO/IMO/Basel Convention Working Group; and
- A provisional work plan for the development of the new legally-binding instrument for safe and environmentally sound recycling of ships, so that the final version can be approved at MEPC 56.

To enable this work to be progressed, an intersessional Correspondence Group on Ship Recycling was formed, which will report to MEPC 55, to deal with the following :

- Further develop the draft new legally-binding instrument for safe and environmentally sound recycling of ships, with particular attention being given to the following Section of the Annex to this instrument :

- Section A “General Provisions”;
- Section B “Requirements for Ships”;
- Section C “Requirements for ship recycling facilities”; and
- Section D “Reporting requirements”.
- Develop a provisional list of guidelines necessary under this draft new legally-binding instrument for safe and environmentally sound recycling of ships.

### **Prevention of air pollution from ships**

A total of twelve (12) papers were submitted, which were considered at plenary and referred to a Working Group.

The following greenhouse gas emissions from ships topics were discussed at plenary :

#### **Ship CO<sub>2</sub> emission indexing :**

- The MEPC circular on the Interim Guidelines for Voluntary Ship CO<sub>2</sub> Emission Indexing for Use in Trials, which invited industries, organizations and interested Administrations to promote the use of the Interim Guidelines and report their experience back to MEPC, was noted. The information on the limited number of trials carried out so far was also noted.
- It was agreed that it would be premature to revise these Guidelines at this stage. The review should take place at MEPC 58, in order to gain as much as possible practical experience to provide a better foundation for an update.

#### **Greenhouse Gas (GHG) Policy :**

- In addition to the ongoing co-operation between the Secretariats of IMO and UNFCCC and its Subsidiary Body for Scientific and Technical Advice (SBSTA), on the reduction of greenhouse gas emissions from ships and the use of bunker fuel oils in recognition of the Kyoto Protocol requirements, the Assembly resolution 963(23) “IMO Policies and Practices related to the Reduction of Greenhouse Gas Emissions from Ships”, urging MEPC to undertake further work to identify and develop mechanisms to achieve limitation or reduction of GHG emissions from ships, was noted.
- Climate change caused by greenhouse gas emissions from burning of fossil fuel was a steadily growing concern for many countries, and scientists were finding more and more proof of the damage caused by greenhouse gases. Many Governments were considering how best to address the matter at the local, national and international levels.
- It was agreed that there was a need to develop GHG strategies and mechanisms for international shipping and to co-operate with other relevant UN bodies, and that further action was needed to be considered in response to the Assembly resolution by identifying the mechanism or mechanisms needed to achieve the possible limitation or reduction of GHG emissions from international shipping.

The outcome of this Working Group, in the form of an oral report was noted by plenary, included the following :

#### **Unified Interpretation on MARPOL Annex VI, Regulation 16 “Incinerators” :**

Concern was raised about the use of incinerators installed on board a ship before 1<sup>st</sup> January, 2000, which may not be able to comply with temperature requirements of regulation 16(9). The unified interpretation (MEPC/Circ.473) was reaffirmed, which allowed operation of incinerators installed prior to 1<sup>st</sup> January, 2000 without the need to comply with the temperature restrictions of regulation 16(9). Limitations on the use of such incinerators could be put in place by national legislation, however it should be borne in mind that if such limitations were in place, there may be a need to provide additional shore reception facilities in accordance with MARPOL Annexes I and V in order to cope with the waste which cannot be incinerated.

#### **Implementation of MARPOL Annex VI :**

- **Bunker delivery documents**
  - Concern was expressed on problems relating to ships that cannot obtain the appropriate documentation from bunker suppliers located in ports of both Parties and non-Parties to the 1997 Protocol (Annex VI).
  - An MEPC circular was approved, reminding all parties of the requirements placed on ship-owners and fuel oil suppliers by MARPOL Annex VI with respect to bunker delivery notes and representative samples of the fuel oil received and on Member Governments to regulate the bunker suppliers in their ports.
- **Notification to IMO on VOCs regulations in Ports and Terminals :**
  - It was agreed that it is essential for tanker operators and others involved in design or operation of tankers to be informed of the different national and local regulation of volatile organic compounds emissions in ports and terminals;
  - In order for Member States to fulfil their obligations in accordance with MARPOL Annex VI, Regulation 15 “Volatile organic compounds”, an MEPC circular was approved requiring notification be given to the Organization by Ports and Terminals where Volatile Organic Compounds (VOCs) emissions are to be regulated; and
  - It was noted that substantial quantities of VOCs are released during the normal operation of tankers (loading and voyage) and emphasized the need for vapour return systems both in ships and terminals.

### **Harmful anti-fouling systems for ships**

While no papers were submitted, it was noted that the entry into force of the AFS Convention was a step closer following recent ratifications, bringing the total number of Parties to the Convention to 16 States, representing about 17.3% of the world's merchant shipping. Entry into force will occur 12 months after ratification by 25 States, representing 25 per cent of world

merchant shipping tonnage. The importance of bringing the AFS Convention into force as soon as possible was highlighted, bearing in mind the 2008 deadline for a total prohibition of tin-based anti-fouling systems on ships.

### **Promotion of implementation and enforcement of MARPOL 73/78 and related instruments**

While only a single paper was submitted, the following topics were considered at plenary :

#### **Operational problems affecting waste oil management in machinery spaces of ships :**

- Apparent serious operational problems faced by most vessels were noted. Although being fitted with bilge oily water separators for machinery spaces complying with resolution MEPC.107(49), they had inadequate waste handling systems for machinery spaces, insufficient sludge/waste oil holding tanks and lesser incinerator capacity. Recent reported incidents of MARPOL violations had demonstrated the inadequacy of guidelines for pollution prevention equipment provided on board ships for waste oil management for machinery spaces.
- Concern focused on the following matters :
  - The design and testing of bilge oily water separators should take into account on-board conditions and their capacity should be specified in relation to installed power plants and other factors;
  - Incinerator capacity for waste oil and sludge should also be specified by regulations;
  - Quality standards of fuel oil bunkers should be improved; and
  - Positive steps, such as adequate reception facilities, should be offered to ships at a reasonable cost rather than initiating criminal proceedings against crews.
- Measures which addressed some of the concerns expressed above had been taken at this meeting.
  - An MEPC circular on the Harmonized Implementation of the Revised Guidelines and Specifications for Pollution Prevention Equipment for machinery space bilges of ships adopted by resolution MEPC.107(49) had been approved, which provided guidance concerning specifically the type-approval process with the aim of ensuring that realistic on-board operating conditions were taken into account during the tests.
  - An MEPC resolution on the Revised Guidelines for systems for handling oily wastes in machinery spaces of ships incorporating Guidance notes for an Integrated Bilge Water Treatment System (IBTS) had been approved. The IBTS, in particular, was intended as a response to problems currently found on board ships as regards handling of oily wastes.
- While there was overwhelming support for these concerns, there was, however, no agreement to the imposition of mandatory minimum capacity requirements for oily bilge water separators and incinerators. The preference, instead, is for an approach based on individual ships and their trading patterns whilst also taking into account access to port reception facilities at likely ports of call.
- In conclusion :
  - The view that there is inadequacy of oil pollution prevention equipment, in particular oily bilge separators, is a serious problem, was endorsed;
  - Member Governments and industry were invited to provide concrete proposals, including MEPC circulars or amendments to existing instruments, to a future session of the Committee in order to address this important matter; and
  - All Parties to the MARPOL Convention, especially port States, were urged to fulfil their obligations under MARPOL by providing adequate reception facilities.

#### **Electronic database for Pollution Prevention Equipment (PPE)**

- The current status of the annual MEPC.5/Circ. Series, which disseminated information on Government type-approved PPE, was circulated. It was noticed that, over the years, some of the information on type-approved PPE currently stored was old and might be outdated.
- The number and extent of reports on PPE from Member Governments received was currently quite low, as details from only three Member Governments on any newly approved PPE had been received in the previous year. There is a possibility that there is PPE in use of whose type approval IMO had not been notified, as a consequence, it was argued that the object and purpose of issuing the MEPC.5/Circ. series were not fulfilled.
- To address this issue and with the aim of facilitating global access to information on PPE worldwide whilst promoting the exchange and accuracy of PPE data, a proposed was made, and endorsed, that an electronic database was set up as a module within IMO's Global Integrated Shipping Information System (GISIS). The objectives of the database would be :
  - The dissemination of up-to-date information on approved PPE to the maritime community worldwide over the internet;
  - The regular updating of the information by Member Governments; and
  - The facilitation of user-friendly searches.

#### **Issues relating to the Condition Assessment Scheme (CAS) database**

- It was noted that the IMO CAS database, accessible only to MARPOL Parties as a module in GISIS, currently stores information on Statements of Compliance (SOC) issued by Governments to 76 CAS-compliant oil tankers whereas there are significant discrepancies as regards CAS-compliance data for those same tankers in the EQUASIS database.
- It was concluded that the IMO CAS database, as part of the IMO GISIS application, was the appropriate source for CAS-related information and that it would be desirable that information on valid Statements of Compliance be made available

to the general public through GISIS, without prejudice to continue making them available to EQUASIS, after having solved any technical problems that might currently exist in relation to the method of supplying those data.

- In conclusion :
  - The necessary steps that need to be taken are taken so that information stored in valid Statements of Compliance in the IMO CAS database is made freely available to the public through the IMO GISIS system;
  - MARPOL Parties were urged to fulfil their obligation under section 14 of CAS to provide information to IMO for dissemination through the IMO CAS database; and
  - Contact be made with the EQUASIS Secretariat to resolve any technical issues that might be currently hampering the use of CAS data supplied by IMO.

### Next Session

MEPC 55 is scheduled to take place between 9<sup>th</sup> and 13<sup>th</sup> October, 2006 at Central Hall, Westminster, London, while the IMO building is being refurbished.

This document was prepared by Marine Business Stream, External Affairs on 27<sup>th</sup> March, 2006.

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LIFE MATTERS

ANNEX

**AMENDMENTS TO THE REVISED MARPOL ANNEX I**

**1 Addition of new paragraph 28.9 of regulation 1**

The following new paragraph 28.9 is added after the existing paragraph 28.8 of regulation 1:

“28.9 ship delivered on or after [1 August 2010] means a ship:

- .1 for which the building contract is placed on or after [1 August 2007]; or
- .2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after [1 February 2008]; or
- .3 the delivery of which is on or after [1 August 2010]; or
- .4 which have undergone a major conversion:
  - .1 for which the contract is placed after [1 August 2007]; or
  - .2 in the absence of contract, the construction work of which is begun after [1 February 2008]; or
  - .3 which is completed after [1 August 2010].”

**2 Addition of new regulation [12A] on oil fuel tank protection**

*The following new regulation [12A] is added after the existing regulation 12:*

**“Regulation [12A] – Oil fuel tank protection**

1 This regulation shall apply to all ships with an aggregate oil fuel capacity of 600 m<sup>3</sup> and above which are delivered on or after [1 August 2010], as defined in regulation 1.28.9 of this Annex.

2 The application of this regulation in determining the location of tanks used to carry oil fuel does not govern over the provisions of regulation 19 of this Annex.

3 For the purpose of this regulation, the following definitions shall apply:

- .1 “Oil fuel” means any oil used as fuel oil in connection with the propulsion and auxiliary machinery of the ship in which such oil is carried.
- .2 “Load line draught (d<sub>s</sub>)” is the vertical distance, in metres, from the moulded baseline at mid-length to the waterline corresponding to the summer freeboard draught to be assigned to the ship.
- .3 “Light ship draught” is the moulded draught amidships corresponding to the lightweight.

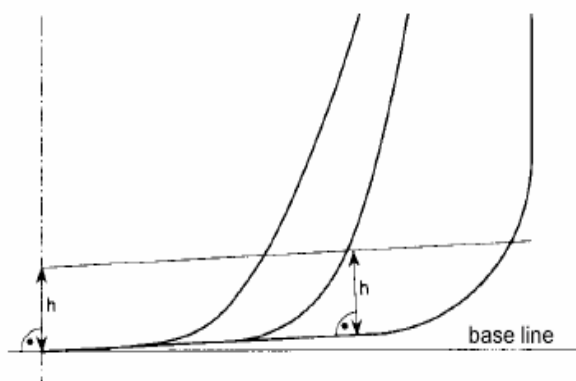
- .4 “Partial load line draught ( $d_p$ )” is the light ship draught plus 60% of the difference between the light ship draught and the load line draught  $d_s$ . The partial load line draught ( $d_p$ ) shall be measured in metres.
  - .5 “Waterline ( $d_B$ )” is the vertical distance, in metres, from the moulded baseline at mid-length to the waterline corresponding to 30% of the depth  $D_S$ .
  - .6 “Breadth ( $B_S$ )” is the greatest moulded breadth of the ship, in metres, at or below the deepest load line draught ( $d_s$ ).
  - .7 “Breadth ( $B_B$ )” is the greatest moulded breadth of the ship, in metres, at or below the waterline ( $d_B$ ).
  - .8 “Depth ( $D_S$ )” is the moulded depth, in metres, measured at mid-length to the upper deck at side. For the purpose of the application, “upper deck” means the highest deck to which the watertight transverse bulkheads except aft peak bulkheads extend.
  - .9 “Length ( $L$ )” means 96% of the total length on a waterline at 85% of the least moulded depth measured from the top of the keel, or the length from the foreside of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel the waterline on which this length is measured shall be parallel to the designed waterline. The length ( $L$ ) shall be measured in metres.
  - .10 “Breadth ( $B$ )” means the maximum breadth of the ship, in metres, measured amidships to the moulded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material.
  - .11 “Oil fuel tank” means a tank in which oil fuel is carried, but excludes those tanks which would not contain oil fuel in normal operation, such as overflow tanks.
  - .12 “Small oil fuel tank” is an oil fuel tank with a maximum individual capacity not greater than  $30 \text{ m}^3$ .
  - .13 “ $C$ ” is the ship’s total volume of oil fuel, including that of the small oil fuel tanks, in  $\text{m}^3$ , at 98% tank filling.
  - .14 “Oil fuel capacity” means the volume of a tank in  $\text{m}^3$ , at 98% filling.
- 4 The provisions of this regulation shall apply to all oil fuel tanks except small oil fuel tanks, as defined in 3.11, provided that the aggregate capacity of such excluded tanks is not greater than  $600 \text{ m}^3$ .
- 5 Individual oil fuel tanks shall not have a capacity of over  $2,500 \text{ m}^3$ .
- 6 For ships, other than self-elevating drilling units, having an aggregate oil fuel capacity of  $600 \text{ m}^3$  and above, oil fuel tanks shall be located above the moulded line of the bottom shell plating nowhere less than the distance  $h$  as specified below:

$$h = B/20 \text{ m or,}$$

$$h = 2.0 \text{ m, whichever is the lesser.}$$

The minimum value of  $h = 0.76 \text{ m}$

In the turn of the bilge area and at locations without a clearly defined turn of the bilge, the oil fuel tank boundary line shall run parallel to the line of the midship flat bottom as shown in Figure 1.



**Figure 1 – Oil fuel tank boundary lines for the purpose of paragraph 6**

7 For ships having an aggregate oil fuel capacity of  $600 \text{ m}^3$  or more but less than  $5,000 \text{ m}^3$ , oil fuel tanks shall be located inboard of the moulded line of the side shell plating, nowhere less than the distance  $w$  which, as shown in Figure 2, is measured at any cross-section at right angles to the side shell, as specified below:

$$w = 0.4 + 2.4 C/20,000 \text{ m}$$

The minimum value of  $w = 1.0 \text{ m}$ , however for individual tanks with an oil fuel capacity of less than  $500 \text{ m}^3$  the minimum value is  $0.76 \text{ m}$ .

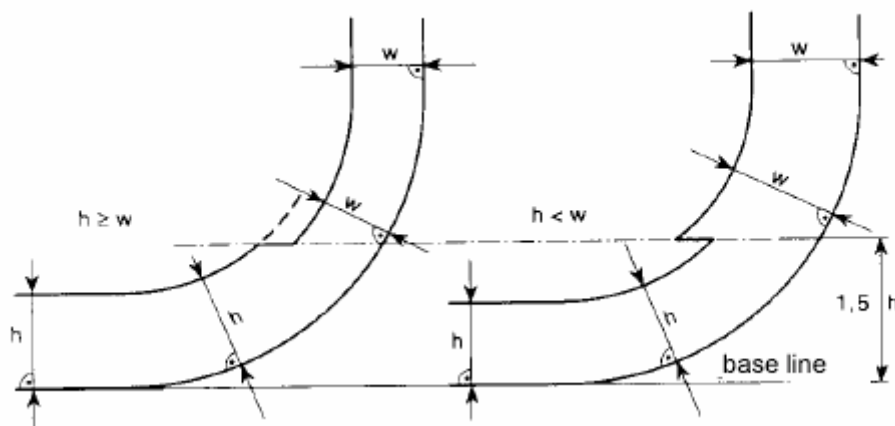
8 For ships having an aggregate oil fuel capacity of  $5,000 \text{ m}^3$  and over, oil fuel tanks shall be located inboard of the moulded line of the side shell plating, nowhere less than the distance  $w$  which, as shown in Figure 2, is measured at any cross-section at right angles to the side shell, as specified below:

$$w = 0.5 + C/20,000 \text{ m or}$$

$$w = 2.0 \text{ m, whichever is the lesser.}$$

The minimum value of  $w = 1.0 \text{ m}$





**Figure 2 – Oil fuel tank boundary lines for the purpose of paragraphs 7 and 8**

9 Lines of oil fuel piping located at a distance from the ship's bottom of less than  $h$ , as defined in paragraph 6, or from the ship's side less than  $w$ , as defined in paragraphs 7 and 8 shall be fitted with valves or similar closing devices within or immediately adjacent to the oil fuel tank. These valves shall be capable of being brought into operation from a readily accessible enclosed space the location of which is accessible from the navigation bridge or propulsion machinery control position without traversing exposed freeboard or superstructure decks. The valves shall close in case of remote control system failure (fail in a closed position) and shall be kept closed at sea at any time when the tank contains oil fuel except that they may be opened during oil fuel transfer operations.

10 Suction wells in oil fuel tanks may protrude into the double bottom below the boundary line defined by the distance  $h$  provided that such wells are as small as practicable and the distance between the well bottom and the bottom shell plating is not less than  $0.5 h$ .

11 Alternatively to paragraphs 6 and either 7 or 8, ships shall comply with the accidental oil fuel outflow performance standard specified below:

- .1 The level of protection against oil fuel pollution in the event of collision or grounding shall be assessed on the basis of the mean oil outflow parameter as follows:

$$O_M < 0.0157 - 1.14E-6 \cdot C \quad 600 \text{ m}^3 \leq C < 5,000 \text{ m}^3$$

$$O_M < 0.010 \quad C \geq 5,000 \text{ m}^3$$

Where  $O_M$  = mean oil outflow parameter;  
 $C$  = total oil fuel volume.

- .2 The following general assumption shall apply when calculating the mean oil outflow parameter:

- .1 the ship shall be assumed loaded to the partial load line draught  $d_p$  without trim or heel;

- .2 all oil fuel tanks shall be assumed loaded to 98% of their volumetric capacity;
  - .3 the nominal density of the oil fuel ( $\rho_n$ ) shall generally be taken as 1,000 kg/m<sup>3</sup>. If the density of the oil fuel is specifically restricted to a lesser value, the lesser value may be applied; and
  - .4 for the purpose of these outflow calculations, the permeability of each oil fuel tank shall be taken as 0.99, unless proven otherwise.
- .3 The following assumptions shall be used when combining the oil outflow parameters:

- .1 The mean oil outflow shall be calculated independently for side damage and for bottom damage and then combined into a non-dimensional oil outflow parameter  $O_M$ , as follows:

$$O_M = (0.4 O_{MS} + 0.6 O_{MB}) / C$$

where:

$O_{MS}$  = mean outflow for side damage, in m<sup>3</sup>  
 $O_{MB}$  = mean outflow for bottom damage, in m<sup>3</sup>  
 $C$  = total oil fuel volume.

- .2 For bottom damage, independent calculations for mean outflow shall be done for 0 m and 2.5 m tide conditions, and then combined as follows:

$$O_{MB} = 0.7 O_{MB(0)} + 0.3 O_{MB(2.5)}$$

where:

$O_{MB(0)}$  = mean outflow for 0 m tide condition, and  
 $O_{MB(2.5)}$  = mean outflow for minus 2.5 m tide condition, in m<sup>3</sup>.

- .4 The mean outflow for side damage  $O_{MS}$  shall be calculated as follows:

$$O_{MS} = \sum_{i=1}^n P_{S(i)} O_{S(i)} \quad [m^3]$$

where:

$i$  = represents each oil fuel tank under consideration;  
 $n$  = total number of oil fuel tanks;  
 $P_{S(i)}$  = the probability of penetrating oil fuel tank  $i$  from side damage, calculated in accordance with paragraph 11.6 of this regulation;  
 $O_{S(i)}$  = the outflow, in m<sup>3</sup>, from side damage to oil fuel tank  $i$ , which is assumed equal to the total volume in oil fuel tank  $i$  at 98% filling.

- .5 The mean outflow for bottom damage shall be calculated for each tidal condition as follows:

$$.1 \quad O_{MB(0)} = \sum_1^n P_{B(i)} O_{B(i)} C_{DB(i)} [m^3]$$

where:

- $i$  = represents each oil fuel tank under consideration;
- $n$  = total number of oil fuel tanks;
- $P_{B(i)}$  = the probability of penetrating oil fuel tank  $i$  from bottom damage, calculated in accordance with paragraph 11.7 of this regulation;
- $O_{B(i)}$  = the outflow from oil fuel tank  $i$ , in  $m^3$ , calculated in accordance with paragraph 11.5.3 of this regulation; and
- $C_{DB(i)}$  = factor to account for oil capture as defined in paragraph 11.5.4.

$$.2 \quad O_{MB(2.5)} = \sum_1^n P_{B(i)} O_{B(i)} C_{DB(i)} [m^3]$$

where:

- $i, n, P_{B(i)}$  and  $C_{DB(i)}$  = as defined in subparagraph .1 above
- $O_{B(i)}$  = the outflow from oil fuel tank  $i$ , in  $m^3$ , after tidal change.

.3 The oil outflow  $O_{B(i)}$  for each oil fuel tank shall be calculated based on pressure balance principles, in accordance with the following assumptions:

- .1 The ship shall be assumed stranded with zero trim and heel, with the stranded draught prior to tidal change equal to the partial load line draught  $d_p$ .
- .2 The oil fuel level after damage shall be calculated as follows:

$$h_F = \{(d_p + t_c - Z_l)(\rho_s)\} / \rho_n$$

- where:  $h_F$  = the height of the oil fuel surface above  $Z_l$ , in m;
- $t_c$  = the tidal change, in m. Reductions in tide shall be expressed as negative values;
- $Z_l$  = the height of the lowest point in the oil fuel tank above the baseline, in m;
- $\rho_s$  = density of seawater, to be taken as  $1,025 \text{ kg/m}^3$ ; and,
- $\rho_n$  = nominal density of the oil fuel, as defined in 11.2.3.

.3 The oil outflow  $O_{B(i)}$  for any tank bounding the bottom shell plating shall be taken not less than the following formula, but no more than the tank capacity:

$$O_{B(i)} = H_W \cdot A$$

where:

$$H_W = 1.0 \text{ m, when } Y_B = 0$$

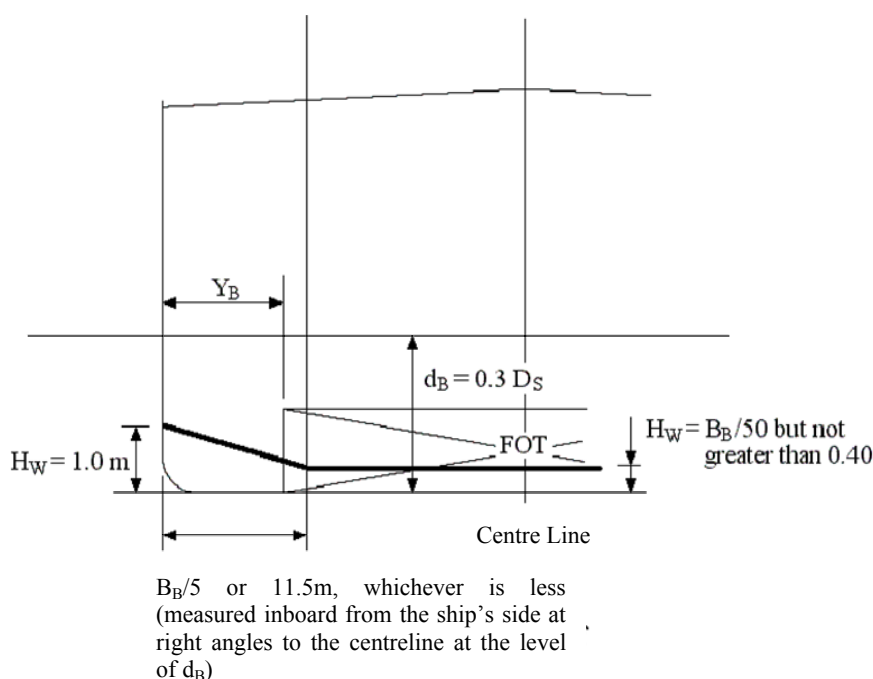
$H_W = B_B/50$  but not greater than 0.4 m, when  $Y_B$  is greater than  $B_B/5$  or 11.5 m, whichever is less

“ $H_W$ ” is to be measured upwards from the midship flat bottom line. In the turn of the bilge area and at locations without a clearly defined turn of the bilge,  $H_W$  is to be measured from a line parallel to the midship flat bottom, as shown for distance “h” in Figure 1.

For  $Y_B$  values outboard  $B_B/5$  or 11.5 m, whichever is less,  $H_W$  is to be linearly interpolated.

$Y_B$  = the minimum value of  $Y_B$  over the length of the oil fuel tank, where at any given location,  $Y_B$  is the transverse distance between the side shell at waterline  $d_B$  and the tank at or below waterline  $d_B$ .

$A$  = the maximum horizontal projected area of the oil fuel tank up to the level of  $H_W$  from the bottom of the tank.



**Figure 3 – Dimensions for calculation of the minimum oil outflow for the purpose of sub-paragraph 11.5.3.3**

- .4 In the case of bottom damage, a portion from the outflow from an oil fuel tank may be captured by non-oil compartments. This effect is approximated by application of the factor  $C_{DB(i)}$  for each tank, which shall be taken as follows:

$C_{DB(i)} = 0.6$  for oil fuel tanks bounded from below by non-oil compartments;

$C_{DB(i)} = 1$  otherwise.

.6 The probability  $P_S$  of breaching a compartment from side damage shall be calculated as follows:

.1  $P_S = P_{SL} \cdot P_{SV} \cdot P_{ST}$

where:  $P_{SL} = (1 - P_{Sf} - P_{Sa})$  = probability the damage will extend into the longitudinal zone bounded by  $X_a$  and  $X_f$ ;

$P_{SV} = (1 - P_{Su} - P_{Sl})$  = probability the damage will extend into the vertical zone bounded by  $Z_l$  and  $Z_u$ ;

$P_{ST} = (1 - P_{Sy})$  = probability the damage will extend transversely beyond the boundary defined by  $y$ ;

.2  $P_{Sa}$ ,  $P_{Sf}$ ,  $P_{Su}$  and  $P_{Sl}$  shall be determined by linear interpolation from the table of probabilities for side damage provided in 11.6.3, and  $P_{Sy}$  shall be calculated from the formulas provided in 11.6.3, where:

$P_{Sa}$  = the probability the damage will lie entirely aft of location  $X_a/L$ ;

$P_{Sf}$  = the probability the damage will lie entirely forward of location  $X_f/L$ ;

$P_{Sl}$  = probability the damage will lie entirely below the tank;

$P_{Su}$  = probability the damage will lie entirely above the tank; and

$P_{Sy}$  = probability the damage will lie entirely outboard the tank.

Compartment boundaries  $X_a$ ,  $X_f$ ,  $Z_l$ ,  $Z_u$  and  $y$  shall be developed as follows:

$X_a$  = the longitudinal distance from aft terminal of  $L$  to the aft most point on the compartment being considered, in m;

$X_f$  = the longitudinal distance from aft terminal of  $L$  to the foremost point on the compartment being considered, in m;

$Z_l$  = the vertical distance from the moulded baseline to the lowest point on the compartment being considered, in m. Where  $Z_l$  is greater than  $D_S$ ,  $Z_l$  shall be taken as  $D_S$ ;

$Z_u$  = the vertical distance from the moulded baseline to the highest point on the compartment being considered, in m. Where  $Z_u$  is greater than  $D_S$ ,  $Z_u$  shall be taken as  $D_S$ ; and,

$y$  = the minimum horizontal distance measured at right angles to the centreline between the compartment under consideration and the side shell, in m<sup>1</sup>.

In way of the turn of the bilge,  $y$  need not to be considered below a distance  $h$  above baseline, where  $h$  is lesser of  $B/10$ , 3 m or the top of the tank.

<sup>1</sup> For symmetrical tank arrangements, damages are considered for one side of the ship only, in which case all “y” dimensions are to be measured from that side. For asymmetrical arrangements reference is made to the Explanatory Notes on matters related to the accidental oil outflow performance, adopted by the Organization by resolution MEPC.122(52).

.3 Table of Probabilities for side damage

$X_a/L$	$P_{Sa}$	$X_f/L$	$P_{Sf}$	$Z_i/D_S$	$P_{Si}$	$Z_u/D_S$	$P_{Su}$
0,00	0,000	0,00	0,967	0,00	0,000	0,00	0,968
0,05	0,023	0,05	0,917	0,05	0,000	0,05	0,952
0,10	0,068	0,10	0,867	0,10	0,001	0,10	0,931
0,15	0,117	0,15	0,817	0,15	0,003	0,15	0,905
0,20	0,167	0,20	0,767	0,20	0,007	0,20	0,873
0,25	0,217	0,25	0,717	0,25	0,013	0,25	0,836
0,30	0,267	0,30	0,667	0,30	0,021	0,30	0,789
0,35	0,317	0,35	0,617	0,35	0,034	0,35	0,733
0,40	0,367	0,40	0,567	0,40	0,055	0,40	0,670
0,45	0,417	0,45	0,517	0,45	0,085	0,45	0,599
0,50	0,467	0,50	0,467	0,50	0,123	0,50	0,525
0,55	0,517	0,55	0,417	0,55	0,172	0,55	0,452
0,60	0,567	0,60	0,367	0,60	0,226	0,60	0,383
0,65	0,617	0,65	0,317	0,65	0,285	0,65	0,317
0,70	0,667	0,70	0,267	0,70	0,347	0,70	0,255
0,75	0,717	0,75	0,217	0,75	0,413	0,75	0,197
0,80	0,767	0,80	0,167	0,80	0,482	0,80	0,143
0,85	0,817	0,85	0,117	0,85	0,553	0,85	0,092
0,90	0,867	0,90	0,068	0,90	0,626	0,90	0,046
0,95	0,917	0,95	0,023	0,95	0,700	0,95	0,013
1,00	0,967	1,00	0,000	1,00	0,775	1,00	0,000

$P_{Sy}$  shall be calculated as follows:

$$\begin{aligned}
 P_{Sy} &= (24.96 - 199.6 y/B_S) (y/B_S) && \text{for } y/B_S \leq 0.05 \\
 P_{Sy} &= 0.749 + \{5 - 44.4 (y/B_S - 0.05)\} \{(y/B_S) - 0.05\} && \text{for } 0.05 < y/B_S < 0.1 \\
 P_{Sy} &= 0.888 + 0.56 (y/B_S - 0.1) && \text{for } y/B_S \geq 0.1
 \end{aligned}$$

$P_{Sy}$  is not to be taken greater than 1.

.7 The probability  $P_B$  of breaching a compartment from bottom damage shall be calculated as follows:

- .1  $P_B = P_{BL} \cdot P_{BT} \cdot P_{BV}$   
 where:  $P_{BL} = (1 - P_{Bf} - P_{Ba})$  = probability the damage will extend into the longitudinal zone bounded by  $X_a$  and  $X_f$ ;  
 $P_{BT} = (1 - P_{Bp} - P_{Bs})$  = probability the damage will extend into transverse zone bounded by  $Y_p$  and  $Y_s$ ; and  
 $P_{BV} = (1 - P_{Bz})$  = probability the damage will extend vertically above the boundary defined by  $z$ ;
- .2  $P_{Ba}$ ,  $P_{Bf}$ ,  $P_{Bp}$  and  $P_{Bs}$  shall be determined by linear interpolation from the table of probabilities for bottom damage provided in 11.7.3, and  $P_{Bz}$  shall be calculated from the formulas provided in 11.7.3, where:  
 $P_{Ba}$  = the probability the damage will lie entirely aft of location  $X_a/L$ ;  
 $P_{Bf}$  = the probability the damage will lie entirely forward of location  $X_f/L$ ;  
 $P_{Bp}$  = probability the damage will lie entirely to port of the tank;  
 $P_{Bs}$  = probability the damage will lie entirely to starboard the tank; and  
 $P_{Bz}$  = probability the damage will lie entirely below the tank.

Compartment boundaries  $X_a$ ,  $X_f$ ,  $Y_p$ ,  $Y_s$  and  $z$  shall be developed as follows:

$X_a$  and  $X_f$  as defined in 11.6.2;

$Y_p$  = the transverse distance from the port-most point on the compartment located at or below the waterline  $d_B$ , to a vertical plane located  $B_B/2$  to starboard of the ship's centreline;

$Y_s$  = the transverse distance from the starboard-most point on the compartment located at or below the waterline  $d_B$ , to a vertical plane located  $B_B/2$  to starboard of the ship's centreline; and

$z$  = the minimum value of  $z$  over the length of the compartment, where, at any given longitudinal location,  $z$  is the vertical distance from the lower point of the bottom shell at that longitudinal location to the lower point of the compartment at that longitudinal location.

### .3 Table of probabilities for bottom damage

$X_a/L$	$P_{Ba}$	$X_f/L$	$P_{Bf}$	$Y_p/B_B$	$P_{Bp}$	$Y_s/B_B$	$P_{Bs}$
0,00	0,000	0,00	0,969	0,00	0,844	0,00	0,000
0,05	0,002	0,05	0,953	0,05	0,794	0,05	0,009
0,10	0,008	0,10	0,936	0,10	0,744	0,10	0,032
0,15	0,017	0,15	0,916	0,15	0,694	0,15	0,063
0,20	0,029	0,20	0,894	0,20	0,644	0,20	0,097
0,25	0,042	0,25	0,870	0,25	0,594	0,25	0,133
0,30	0,058	0,30	0,842	0,30	0,544	0,30	0,171
0,35	0,076	0,35	0,810	0,35	0,494	0,35	0,211
0,40	0,096	0,40	0,775	0,40	0,444	0,40	0,253
0,45	0,119	0,45	0,734	0,45	0,394	0,45	0,297
0,50	0,143	0,50	0,687	0,50	0,344	0,50	0,344
0,55	0,171	0,55	0,630	0,55	0,297	0,55	0,394
0,60	0,203	0,60	0,563	0,60	0,253	0,60	0,444
0,65	0,242	0,65	0,489	0,65	0,211	0,65	0,494
0,70	0,289	0,70	0,413	0,70	0,171	0,70	0,544
0,75	0,344	0,75	0,333	0,75	0,133	0,75	0,594
0,80	0,409	0,80	0,252	0,80	0,097	0,80	0,644
0,85	0,482	0,85	0,170	0,85	0,063	0,85	0,694
0,90	0,565	0,90	0,089	0,90	0,032	0,90	0,744
0,95	0,658	0,95	0,026	0,95	0,009	0,95	0,794
1,00	0,761	1,00	0,000	1,00	0,000	1,00	0,844

$P_{Bz}$  shall be calculated as follows:

$$P_{Bz} = (14.5 - 67 z/D_S) (z/D_S) \quad \text{for } z/D_S \leq 0.1$$

$$P_{Bz} = 0.78 + 1.1 \{(z/D_S - 0.1)\} \quad \text{for } z/D_S > 0.1$$

$P_{Bz}$  is not to be taken greater than 1.

- .8 For the purpose of maintenance and inspection, any oil fuel tanks that do not border the outer shell plating shall be located no closer to the bottom shell plating than the minimum value of  $h$  in paragraph 6 and no closer to the side shell plating than the applicable minimum value of  $w$  in paragraph 7 or 8.

12 In approving the design and construction of ships to be built in accordance with this regulation, Administrations shall have due regard to the general safety aspects, including the need for maintenance and inspection of wing and double bottom tanks or spaces.”

### **3 Consequential amendments to the Supplement of the IOPP Certificate (Forms A and B)**

*The following new paragraph 2A is added to the Supplement of the IOPP Certificate (Forms A and B):*

“2A.1 The ship is required to be constructed according to regulation [12A] and complies with the requirements of:

paragraphs 6 and either 7 or 8 (double hull construction) ☐

paragraph 11 (accidental oil fuel outflow performance). ☐

2A.2 The ship is not required to comply with the requirements of regulation [12A]. ☐”

### **4 Amendments to regulation 21**

*The text of existing paragraph 2.2 of regulation 21 on Prevention of oil pollution from oil tankers carrying heavy grade oil as cargo is replaced by the following:*

“oils, other than crude oils, having either a density at 15°C higher than 900 kg/m<sup>3</sup> or a kinematic viscosity at 50°C higher than 180 mm<sup>2</sup>/s; or”

\*\*\*



## ANNEX

1 The table in annex 1 to the Guidelines for the application of the revised MARPOL Annex I requirements to FPSOs and FSUs is amended as follows:

.1 *Insert an additional row below regulation 12 as follows:*

[12A]	Oil fuel tank protection	Applies [ <b>to new purpose built FPSOs and FSUs only</b> ] excluding the requirements of paragraph 6. However, when undertaking any voyage away from the operating station for whatever purpose, the double bottom oil fuel tanks are to be empty unless they are in compliance with the requirements of paragraph 6.
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.2 *Amend row relating to regulation 37 to read as follows:*

37.1 – 37.3	SOPEP	Applies in respect of SOPEP. However, contingency plan in accordance with requirements of OPRC Art 3(2) may be accepted under UI 48 as meeting this requirement. In such cases a separate SOPEP in accordance with the MARPOL format is not required. This acceptance of the contingency plan does not apply to a disconnectable FPSO/FSU unless that plan remains applicable when the FPSO/FSU is not connected to the riser.
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.3 *Insert an additional row below regulation 37 as follows:*

37.4	Access to stability and residual strength calculation programmes	Applicable
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2 In the record of construction and equipment for FPSOs and FSUs, new paragraphs 3.4 and 3.5 are added as follows:

“3.4 The ship is required to be constructed according to regulation [12A] and complies with the requirements of:

paragraphs 7 or 8 (double side construction) ☐

paragraphs 6 and either 7 or 8 (double hull construction) ☐

paragraph 11 (accidental oil fuel outflow performance). ☐

3.5 The ship is not required to comply with the requirements of regulation [12A]. ☐”

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**ANNEX 3****DRAFT UNIFIED INTERPRETATION ON APPLICATION OF REGULATION [12A]  
TO COLUMN STABILIZED UNITS (MODUS) AS DEFINED IN THE CODE FOR THE  
CONSTRUCTION AND EQUIPMENT OF MOBILE OFFSHORE DRILLING UNITS  
ADOPTED BY RESOLUTION A.649(16), AS AMENDED**

For the purpose of placing the oil fuel tanks, the location limitations of paragraphs 7 and 8 of regulation [12A] apply to those areas subject to damage as follows:

- .1 only those columns, underwater hulls and braces on the periphery of the unit shall be assumed to be damaged and the damage shall be assumed in the exposed portions of the columns, underwater hulls and braces;
- .2 columns and braces shall be assumed to be damaged at any level between 5.0 m above and 3.0 m below the range of draughts in the MODUs operating manual for normal and severe weather operations; and
- .3 underwater hull and footings shall be assumed to be damaged when operating in a transit condition in the same manner as indicated in .1 and .2, having regard to their shape.

\*\*\*

ANNEX

**PROPOSED AMENDMENTS TO THE REVISED MARPOL ANNEX IV**

*The following new chapter 5 and regulation 13 are added after the existing regulation 12:*

**Chapter 5 Port State Control**

**“Regulation 13 – Port State control on operational requirements”<sup>\*</sup>**

1. A ship when in a port or an offshore terminal of another Party is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex, where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by sewage.
2. In the circumstances given in paragraph (1) of this regulation, the Party shall take such steps as will ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.
3. Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.
4. Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.”

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<sup>\*</sup> Refer to procedures for port State control adopted by the Organization by resolution A.787(19) and amended by resolution A.882(21); see IMO sales publication IMO-650E.

## ANNEX

### AMENDMENTS TO THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK (BCH CODE)

The BCH Code is amended as follows:

#### Preamble

1 The following new paragraph is added:

“7 The Code has been revised to reflect the 2007 revision of MARPOL Annex II”

#### CHAPTER I

##### General

#### 1.1 Purpose

2 In the second sentence, the words “as defined in regulation 1(1) of Annex II thereof” are deleted and the references to (Pollution Category) “A, B or C” are replaced by “X, Y or Z”.

#### 1.4 Definitions

3 Paragraph 1.4.16A is replaced by the following:

“1.4.16A *Noxious Liquid Substance* means any substance indicated in the Pollution Category column of chapter 17 or 18 of the International Bulk Chemical Code, or the current MEPC.2/Circular or provisionally assessed under the provisions of regulation 6.3 of the amendments to the Annex of the Protocol of 1978 relative to the International Convention for the Prevention of Pollution from Ships, 1973, as falling into Category X, Y or Z.”

4 In paragraph 1.4.16B the existing text is deleted and the word “Deleted” is inserted.

5 The paragraph number of the definition of “anniversary date” which was adopted as “1.4.16C” by resolution MEPC.41(29) is amended to read “1.4.16D”.

#### 1.7 Effective date

6 In the second sentence of paragraph 1.7.2, the reference to “regulation 1(12)” is replaced by “regulation 1.17”.

#### 1.8 New products

7 In the first sentence of paragraph 1.8, the reference to (Pollution Category) “A, B or C” is replaced by “X, Y or Z”.

## CHAPTER II Cargo Containment

### G – MATERIALS OF CONSTRUCTION

#### 2.17 General

8 The existing text is replaced by the following:

“2.17.1 Structural materials used for tank construction, together with associated piping, pumps, valves, vents and their jointing materials, should be suitable at the temperature and pressure for the cargo to be carried in accordance with recognized standards. Steel is assumed to be the normal material of construction.

2.17.2 Where applicable, the following should be taken into account in selecting the material of construction:

- .1 notch ductility at the operating temperature;
- .2 corrosive effect of the cargo; and
- .3 possibility of hazardous reactions between the cargo and the material of construction.

2.17.3 The shipper of the cargo is responsible for providing compatibility information to the ship operator and/or master. This must be done in a timely manner before transportation of the product. The cargo shall be compatible with all materials of construction such that:

- .1 no damage to the integrity of the materials of construction is incurred; and
- .2 no hazardous, or potentially hazardous reaction is created.

2.17.4 When a product is submitted to IMO for evaluation, and where compatibility of the product with materials referred to in paragraph 2.17 renders special requirements, the GESAMP/EHS Product Data Reporting Form shall provide information on the required materials of construction. These requirements shall be reflected in chapter IV and consequentially be referred to in *column o* of chapter 17 of the IBC Code. The reporting form shall also indicate if no special requirements are necessary. The producer of the product is responsible for providing the correct information.”

#### 2.18 Additional requirements

9 In paragraph 2.18, the existing text is deleted and the word “Deleted” is inserted.

## **CHAPTER III**

### Safety equipment and related considerations

#### E – FIRE PROTECTION

10 After the heading, the following words are inserted:

“(SOLAS regulations referred to in Part E mean, unless expressly provided otherwise, regulations in chapter II-2 of the International Convention for the Safety of Life at Sea, 1974 and its relevant amendments adopted before by resolution MSC.99(73))”.

#### **3.13 Fire safety arrangements**

11 In paragraph 3.13.3 the existing text is deleted and the word “Deleted” is inserted.

12 The following new paragraph 3.13.5 is added:

“3.13.5 The following requirements in SOLAS chapter II-2, as adopted by MSC.99(73), should apply:

- (a) regulations II-2/4.5.10.1.1 and 4.5.10.1.4 and a system for continuous monitoring of the concentration of flammable vapours shall be fitted on ships of 500 tons gross tonnage and over by the date of the first scheduled dry-docking after [the date of entry into force of the amendment], but not later than [3 years after the date of entry into force of the amendment]. Sampling points or detector heads should be located in suitable positions in order that potentially dangerous leakages are readily detected. When the flammable vapour concentration reaches a pre-set level which shall not be higher than 10% of the lower flammable limit, a continuous audible and visual alarm signal shall be automatically effected in the pump-room and cargo control room to alert personnel to the potential hazard. However, existing monitoring systems already fitted having a pre-set level not greater than 30% of the lower flammable limit may be accepted. Notwithstanding the above provisions, the Administration may exempt ships not engaged on international voyages from those requirements;
- (b) regulations 13.3.4.2 to 13.3.4.5 and 13.4.3 should apply to ships of 500 tons gross tonnage and over;
- (c) regulations in Part E of chapter II-2 of SOLAS Convention except regulations 16.3.2.2 and 16.3.2.3 thereof, should apply to ships, regardless of their sizes;
- (d) where deep-fat cooking equipment is newly installed, regulation 10.6.4 should apply; and
- (e) fire-extinguishing systems using Halon 1211, 1301, and 2402 and perfluorocarbons should not be newly installed as prohibited by regulation 10.4.1.3.”.

## F – PERSONAL PROTECTION

- 13 After the heading, the following words are inserted:

“(SOLAS regulations referred to in Part F mean, unless expressly provided otherwise, regulations in chapter II-2 of the International Convention for the Safety of Life at Sea, 1974 and its relevant amendments adopted before by resolution MSC.99(73))”.

### **CHAPTER IV** Special requirements

#### **4.12 Materials of construction**

- 14 In paragraph 4.12, the existing text is deleted and the word “Deleted” is inserted.

#### **4.15 Cargo contamination**

- 15 In paragraph 4.15.1, the existing text is deleted and the word “Deleted” is inserted.

### **CHAPTER V** Operational requirements

#### **5.2 Cargo information**

- 16 In paragraph 5.2.5, the viscosity figure “25 mPa”, which appears twice, is replaced with “50 mPa”.
- 17 In paragraph 5.2.6, the existing text is deleted and the word “Deleted” is inserted.
- 18 In paragraph 5.2.7, the existing text is deleted and the word “Deleted” is inserted.

### **CHAPTER VA** Additional measures for the protection of the marine environment

- 19 The existing text is deleted and the word “Deleted” is inserted.

### **CHAPTER VI** Summary of minimum requirements

- 20 The IBC/BCH cross-references to the requirements under Materials of construction (column *m*) and the following cross-references under special requirements (column *o*) are deleted:



“IBC Code reference	BCH Code reference
15.16.1	4.15.1
16.2.7	5.2.6
16.2.8	5.2.7
16A.2.2	5A.2.2”

## **CHAPTER VIII**

### **Transport of liquid chemical wastes**

21 In paragraph 8.3.2.2 reference to “chapter 19” of the IBC Code is replaced by “chapter 20”.

## Appendix

### Model form of Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk

22 The existing form is replaced by the following:

#### **“MODEL FORM OF CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK**

#### **CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK**

*(Official seal)*

Issued under the provisions of the

CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING  
DANGEROUS CHEMICALS IN BULK  
(resolutions MSC....(...) and MEPC....(...))

under the authority of the Government of

.....  
*(full official designation of country)*

by.....  
*(full designation of the competent person or organization recognized by the Administration)*

#### **Particulars of ship<sup>1</sup>**

Name of ship	.....
Distinctive number or letters	.....
Port of registry	.....
Gross tonnage	.....
Ship Type (Code paragraph 2.2.4)	.....
IMO Number <sup>2</sup>	.....

Date on which keel was laid or on which the ship was at a  
similar stage of construction or (in the case of a converted ship)  
date on which conversion to chemical tanker was commenced .....

The ship also complies fully with the following amendments to the Code:

.....  
.....

<sup>1</sup> Alternatively, the particulars of the ship may be placed horizontally in boxes.

<sup>2</sup> In accordance with IMO ship identification number scheme adopted by the Organization by resolution A.600(15).

The ship is exempted from compliance with the following provisions of the Code:

.....  
.....

THIS IS TO CERTIFY:

- 1 That the ship has been surveyed in accordance with the provisions of section 1.6 of the Code;
- 2 That the survey showed that the construction and equipment of the ship and the condition thereof are in all respects satisfactory and that the ship:
  - .1 complies with the relevant provisions of the Code applicable to ships referred to in 1.7.2;
  - .2 complies with the relevant provisions of the Code applicable to ships referred to in 1.7.3;
- 3 That the ship has been provided with a manual in accordance with Appendix 4 of MARPOL Annex II as called for by regulation 14 of the Annex, and that the arrangements and equipment of the ship prescribed in the Manual are in all respects satisfactory;
- 4 That the ship meets the requirements for the carriage in bulk of the following products, provided that all relevant operational provisions of the Code and MARPOL Annex II are observed:

Product	Conditions of carriage (tank numbers etc.)	Pollution Category
Continued on attachment 1, additional signed and dated sheets <sup>3</sup> Tank numbers referred to in this list are identified on attachment 2, signed and dated tank plan.		

- 5 That, in accordance with 1.7.3/2.2.5<sup>3</sup>, the provisions of the Code are modified in respect of the ship in the following manner:

.....

- 6 That the ship must be loaded:
  - .1 in accordance with the loading conditions provided in the approved loading manual, stamped and dated ..... and signed by a responsible officer of the Administration, or of an organization recognized by the Administration<sup>3</sup>;
  - .2 in accordance with the loading limitations appended to this Certificate<sup>3</sup>.

<sup>3</sup> Delete as appropriate.

Where it is required to load the ship other than in accordance with the above instruction, then the necessary calculations to justify the proposed loading conditions should be communicated to the certifying Administration who may authorize in writing the adoption of the proposed loading condition<sup>4</sup>.

This Certificate is valid until .....<sup>5</sup>  
subject to surveys in accordance with 1.6 of the Code.

Completion date of the survey on which this certificate is based: .....  
(dd/mm/yyyy)

Issued at .....  
(Place of issue of certificate)

.....  
(Date of issue)

.....  
(Signature of authorized official  
issuing the certificate)

(Seal or stamp of the authority, as appropriate)

Notes on completion of Certificate:

- 1 The Certificate can be issued only to ships entitled to fly the flags of States which are a Party to MARPOL 73/78.
- 2 Ship Type: Any entry under this column must relate to all relevant recommendations, e.g., an entry "Type 2" should mean Type 2 in all respects prescribed by the Code. This column would not usually apply in the cases of an existing ship and in such a case should be noted "see paragraph 2.2".
- 3 Products: Products listed in chapter 17 of the Code, or which have been evaluated by the Administration in accordance with 1.8 of the Code, should be listed. In respect of the latter "new" products, any special requirements provisionally prescribed should be noted.
- 4 Products: The list of products the ship is suitable to carry should include the noxious liquid substances of Category Z which are not covered by the Code and should be identified as "chapter 18 Category Z".
- 5 *deleted*

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<sup>4</sup> Instead of being incorporated in the Certificate, this text may be appended to the Certificate if signed and stamped.

<sup>5</sup> Insert the date of expiry as specified by the Administration in accordance with 1.6.6.1 of the Code. The day and the month of this day correspond to the anniversary date as defined in 1.4.16D of the Code, unless amended in accordance with 1.6.6.8 of the Code.

- 6 Conditions of carriage: If a Certificate is issued to a ship which is modified in accordance with the provision of regulation 1(12) of MARPOL Annex II the Certificate should indicate in the top of the table of products and conditions of carriage the following statement: “This ship is certificated to carry only pollution hazard chemicals”.

## ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that at a survey required by 1.6.2 of the Code the ship was found to comply with the relevant provisions of the Code.

Annual survey: Signed .....  
(Signature of duly authorized official)  
Place .....  
Date (dd/mm/yyyy) .....  
(Seal or stamp of the Authority, as appropriate)

Annual/Intermediate<sup>3</sup> survey: Signed .....  
(Signature of duly authorized official)  
Place .....  
Date (dd/mm/yyyy) .....  
(Seal or stamp of the Authority, as appropriate)

Annual/Intermediate<sup>3</sup> survey: Signed .....  
(Signature of duly authorized official)  
Place .....  
Date (dd/mm/yyyy) .....  
(Seal or stamp of the Authority, as appropriate)

Annual survey: Signed .....  
(Signature of duly authorized official)  
Place .....  
Date (dd/mm/yyyy) .....  
(Seal or stamp of the Authority, as appropriate)

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<sup>3</sup> Delete as appropriate.

**ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH  
PARAGRAPH 1.6.6.8.3**

THIS IS TO CERTIFY that, at an annual/intermediate<sup>3</sup> survey in accordance with paragraph 1.6.6.8.3 of the Code, the ship was found to comply with the relevant provisions of the Convention:

Signed .....  
(Signature of duly authorized official)

Place .....

Date (dd/mm/yyyy) .....

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID  
FOR LESS THAN 5 YEARS WHERE PARAGRAPH 1.6.6.3 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with paragraph 1.6.6.3 of the Code, be accepted as valid until .....

Signed .....  
(Signature of duly authorized official)

Place .....

Date (dd/mm/yyyy) .....

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN  
COMPLETED AND PARAGRAPH 1.6.6.4 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with paragraph 1.6.6.4 of the Code, be accepted as valid until .....

Annual survey: Signed .....  
(Signature of duly authorized official)

Place .....

Date (dd/mm/yyyy) .....

(Seal or stamp of the Authority, as appropriate)

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<sup>3</sup> Delete as appropriate.

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE  
UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD  
OF GRACE WHERE PARAGRAPH 1.6.6.5 OR 1.6.6.6 APPLIES**

This Certificate shall, in accordance with paragraph 1.6.6.5/1.6.6.63 of the Code, be accepted as valid until .....

Signed .....  
(Signature of duly authorized official)

Place .....

Date (dd/mm/yyyy) .....

(Seal or stamp of the Authority, as appropriate)

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE WHERE  
PARAGRAPH 1.6.6.8 APPLIES**

In accordance with paragraph 1.6.6.8 of the Code, the new anniversary date is .....

Signed .....  
(Signature of duly authorized official)

Place .....

Date (dd/mm/yyyy) .....

(Seal or stamp of the Authority, as appropriate)

In accordance with paragraph 1.6.6.8, the new anniversary date is .....

Signed .....  
(Signature of duly authorized official)

Place .....

Date (dd/mm/yyyy) .....

(Seal or stamp of the Authority, as appropriate)

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<sup>3</sup> Delete as appropriate.



## ATTACHMENT 1

TO THE

# CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK

Continued list of products to those specified in section 3, and their conditions of carriage.

[illegible]

Date \_\_\_\_\_

(as for Certificate)

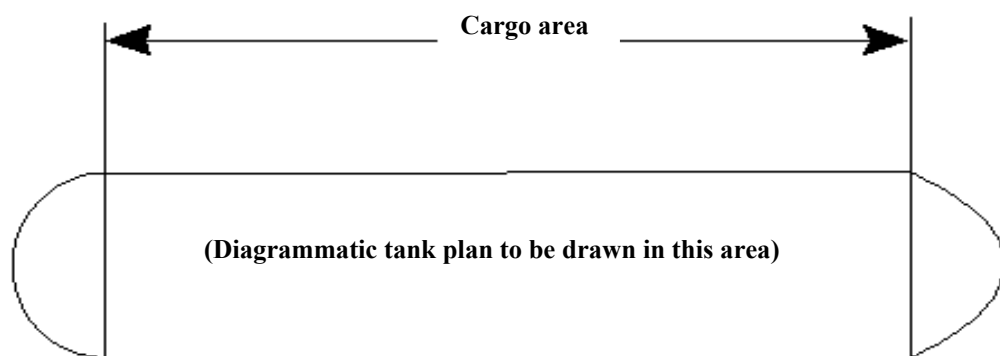
(Signature of official issuing the Certificate  
and/or seal of issuing authority)

**ATTACHMENT 2  
TO THE  
CERTIFICATE OF FITNESS FOR THE CARRIAGE OF DANGEROUS  
CHEMICALS IN BULK**

TANK PLAN (specimen)

Name of ship: .....

Distinctive number or letters: .....



Date .....  
(as for Certificate)

.....  
(Signature of official issuing the Certificate  
and/or seal of issuing authority)"

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