STATUTORY INSTRUMENTS

S.I. No. 788 of 2007

SEA POLLUTION (PREVENTION OF OIL POLLUTION) REGULATIONS 2007

(Prn. A7/2181)

S.I. No. 788 of 2007

SEA POLLUTION (PREVENTION OF OIL POLLUTION) REGULATIONS 2007

ARRANGEMENT OF REGULATIONS

Chapter 3

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S.I. No. 788 of 2007

SEA POLLUTION (PREVENTION OF OIL POLLUTION) REGULATIONS 2007

I, NOEL DEMPSEY, Minister for Transport, in exercise of the powers conferred on me by sections 10, 11, 12, 14, 15 and 17 of the Sea Pollution Act 1991 (No. 27 of 1991) and the Maritime Transport, Safety and Security (Transfer of Departmental Administration and Ministerial Functions) Order 2005 (S.I. No. 842 of 2005), and for the purpose of giving full effect to Regulation (EC) No. 417 of 2002 of the European Parliament and of the Council of 18 February 2002[1], and giving effect to Annex I of the MARPOL Convention, hereby make the following regulations:

PART 1

General

Citation

1. (1) These Regulations may be cited as the Sea Pollution (Prevention of Oil Pollution) Regulations 2007.

(2) These Regulations come into operation on the day after they are made.

Interpretation

2. (1) In these Regulations:

"Act" means the Sea Pollution Act 1991 (No. 27 of 1991);

"amidships" is at the middle of the length (L);

"anniversary date" means the day and the month of each year which will correspond to the date of expiry of the International Oil Pollution Prevention Certificate;

"B" means breadth as defined by this Regulation;

"breadth", subject to Regulation 13, 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;

"centre tank" means any tank inboard of a longitudinal bulkhead;

"chemical tanker" means a ship constructed or adapted primarily to carry a cargo of noxious liquid substances in bulk;

[1]O.J. No. L64, 7 March 2002

Notice of the making of this Statutory Instrument was published in "Iris Oifigiúil" of 7th December, 2007.

"clean ballast", subject to paragraph (2), means the ballast in a tank which since oil was last carried in it, has been cleaned in a manner so that effluent from it, if it were discharged from a ship which is stationary into clean calm water on a clear day, would not produce visible traces of oil on the surface of the water or on adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines;

"combination carrier" means a ship designed to carry either oil or solid cargoes in bulk;

"constructed" means a ship the keel of which is laid or which is at a similar stage of construction;

"crude oil" means any liquid hydrocarbon mixture occurring naturally in the earth whether or not treated to render it suitable for transportation and includes—

(*a*) crude oil from which certain distillate fractions may have been removed, and

(*b*) crude oil to which certain distillate fractions may have been added;

"crude oil tanker" means an oil tanker engaged in the trade of carrying crude oil;

"deadweight" means the difference in metric tonnes between the displacement of a ship in water of a specific gravity of 1.025 at the load waterline corresponding to the assigned summer freeboard and the lightweight of the ship;

"DW" means deadweight as defined by this Regulation;

"en route" means that the ship is under way at sea on a course, or courses, which will, so far as practicable for navigational purposes, cause any discharge to be spread over as great an area of the sea as is reasonably practicable;

"forward and after perpendiculars" shall be read in accordance with Regulation 5(4);

"gas carrier" means a cargo ship constructed or adapted and used for the carriage in bulk of any liquefied gas;

"instantaneous rate of discharge of oil content" means the rate of discharge of oil in litres per hour at any instant divided by the speed of the ship in knots at the same instant;

"IOPP Certificate" means an International Oil Pollution Prevention Certificate;

"International Bulk Chemical Code" means the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in bulk adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC 19(22), as amended by resolution MEPC 40(29) on 16 March, 1990 and as may be amended by the Organization;

"L" means length as defined by this Regulation;

"length", subject to Regulations 5 and 13, means 96 per cent of the total length on a waterline at 85 per cent of the least moulded depth measured from the top of the keel, or, if it is greater, the length from the foreside of the stem to the axis of the rudder stock on that waterline;

"lightweight" means the displacement of a ship in metric tonnes without cargo, fuel, lubricating oil, ballast water, fresh water and feed water in tanks, consumable stores, and passengers and crew and their effects;

"major conversion" means, subject to Regulation 3(7), a conversion of a ship—

(*a*) which substantially alters the dimensions or carrying capacity of the ship,

(*b*) which changes the type of the ship,

(*c*) the intent of which, in the opinion of the Minister, is, substantially, to prolong its life, or

(*d*) which otherwise so alters the ship that it would become subject to the relevant provisions of the MARPOL Convention not previously applicable to it;

"Marine Notice" means a Notice described as such, issued by the Minister and which may be amended or replaced from time to time;

"MARPOL Convention" means the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocols of 1978 and 1997;

"Minister" means the Minister for Transport;

"nearest land", in the context of "from the nearest land", means from the baseline from which the territorial sea of the territory in question is established in accordance with the Convention on the Territorial Sea and the Contiguous Zone 1958 except that, for the purposes of the MARPOL Convention "from the nearest land" off the north-eastern coast of Australia shall mean from a line drawn from a point on the coast of Australia in—

latitude 11°00' S, longitude 142°08' E to a point in latitude 10°35' S, longitude 141°55' E,
thence to a point latitude 10°00' S, longitude 142°00' E,
thence to a point latitude 9°10' S, longitude 143°52' E,
thence to a point latitude 9°00' S, longitude 144°30' E,
thence to a point latitude 10°41' S, longitude 145°00' E,
thence to a point latitude 13°00' S, longitude 145°00' E,
thence to a point latitude 15°00' S, longitude 146°00' E,
thence to a point latitude 17°30' S, longitude 147°00' E,
thence to a point latitude 21°00' S, longitude 152°55' E,

thence to a point latitude 24°30' S, longitude 154°00' E,
thence to a point on the coast of Australia in latitude 24°42' S, longitude 153°15' E;

"oil" means petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products (other than those petrochemicals which are subject to the provisions of Annex II of the MARPOL Convention) and, without limiting the generality of the foregoing, includes the substances listed in Schedule 1;

"oil fuel" means any oil used as fuel in connection with the propulsion and auxiliary machinery of the ship in which such oil is carried;

"oil record book" means a book used to record the operations specified in Regulations 18 and 36 in the form specified in Schedule 3;

"oil tanker" means a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces and includes combination carriers and any "chemical tanker" or gas carrier when it is carrying a cargo or part cargo of oil in bulk;

"oil tanker delivered on or before 1 June 1982" means an oil tanker—

(*a*) for which the building contract is placed on or before 1 June 1979,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or before 1 January 1980,

(*c*) the delivery of which is on or before 1 June 1982, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed on or before 1 June 1979,

(ii) in the absence of a contract, the construction work of which is begun on or before 1 January 1980, or

(iii) which is completed on or before 1 June 1982;

"oil tanker delivered after 1 June 1982" means an oil tanker—

(*a*) for which the building contract is placed after 1 June 1979,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 1 January 1980,

(*c*) the delivery of which is after 1 June 1982, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed after 1 June 1979,

(ii) in the absence of a contract, the construction work of which is begun after 1 January 1980, or

(iii) which is completed after 1 June 1982;

"oil tanker delivered before 6 July 1996" means an oil tanker—

(*a*) for which the building contract is placed before 6 July 1993,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction before 6 January 1994,

(*c*) the delivery of which is before 6 July 1996, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed before 6 July 1993,

(ii) in the absence of a contract, the construction work of which is begun before 6 January 1994, or

(iii) which is completed before 6 July 1996;

"oil tanker delivered on or after 6 July 1996" means an oil tanker—

(*a*) for which the building contract is placed on or after 6 July 1993,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 6 January 1994,

(*c*) the delivery of which is on or after 6 July 1996, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed on or after 6 July 1993,

(ii) in the absence of a contract, the construction work of which is begun on or after 6 January 1994, or

(iii) which is completed on or after 6 July 1996;

"oil tanker delivered on or after 1 February 2002" means an oil tanker—

(*a*) for which the building contract is placed on or after 1 February 1999,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 August 1999,

(*c*) the delivery of which is on or after 1 February 2002, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed on or after 1 February 1999,

(ii) in the absence of a contract, the construction work of which is begun on or after 1 August 1999, or

(iii) which is completed on or after 1 February 2002;

"oil tanker delivered on or after 1 January 2010" means an oil tanker—

(*a*) for which the building contract is placed on or after 1 January 2007,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2007,

(*c*) the delivery of which is on or after 1 January 2010, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed on or after 1 January 2007,

(ii) in the absence of a contract, the construction work of which is begun on or after 1 July 2007, or

(iii) which is completed on or after 1 January 2010;

"oily mixture" means a mixture with any oil content;

"Organization" means the International Maritime Organization;

"parts per million" means parts of oil per million parts of water by volume;

"Party" means a state which has ratified the MARPOL Convention;

"permeability" of a space means the ratio of the volume within that space which is assumed to be occupied by water to the total volume of that space;

"product carrier" means an oil tanker engaged in the trade of carrying oil other than crude oil;

"qualified person" means a surveyor of ships or a recognised organisation;

"recognised organisation" means an organisation recognised by the Commission of the European Communities under Article 4 of Council Directive 94/57/EC[2], as amended, and by the Minister under European Communities (Ship Inspection and Survey Organisations) Regulation, 2003 (S.I. No. 301 of 2003);

"segregated ballast" means the ballast water introduced into a tank which is completely separated from the cargo oil and oil fuel system and which is permanently allocated to the carriage of ballast or to the carriage of ballast or cargoes other than oil or noxious liquid substances;

"ship delivered on or before 31 December 1979" means a ship—

(*a*) for which the building contract is placed on or before 31 December 1975,

[2]O.J. No. L319, 12 December 1994, p. 20

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or before 30 June 1976,

(*c*) the delivery of which is on or before 31 December 1979, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed on or before 31 December 1975,

(ii) in the absence of a contract, the construction work of which is begun on or before 30 June 1976, or

(iii) which is completed on or before 31 December 1979;

"ship delivered after 31 December 1979" means a ship—

(*a*) for which the building contract is placed after 31 December 1975,

(*b*) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 30 June 1976,

(*c*) the delivery of which is after 31 December 1979, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed after 31 December 1975,

(ii) in the absence of a contract, the construction work of which is begun after 30 June 1976, or

(iii) which is completed after 31 December 1979;

"ship delivered on or after 1 August 2010" means a ship—

(*a*) for which the building contract is placed on or after 1 August 2007,

(*b*) 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,

(*c*) the delivery of which is on or after 1 August 2010, or

(*d*) which has undergone a major conversion—

(i) for which the contract is placed after 1 August 2007,

(ii) in the absence of a contract, the construction work of which is begun after 1 February 2008, or

(iii) which is completed after 1 August 2010;

"slop tank" means a tank specifically designated for the collection of tank drainings, tank washings and other oily mixtures;

"special area" means a sea area where for recognised 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 are defined as follows:

(*a*) "Mediterranean Sea area" means the Mediterranean Sea proper including the gulfs and seas therein with the boundary between the Mediterranean and the Black Sea constituted by the 41°N parallel and bounded to the west by the Straits of Gibraltar at the meridian of 5°36' W;

(*b*) "Baltic Sea area" means the Baltic Sea proper with the Gulf of Bothnia, the Gulf of Finland and the entrance to the Baltic Sea bounded by the parallel of the Skaw in the Skagerrak at 57°44.8'N;

(*c*) "Black Sea area" means the Black Sea proper with the boundary between the Mediterranean and the Black Sea constituted by the parallel 41° N;

(*d*) "Red Sea area" means the Red Sea proper including the Gulfs of Suez and Aqaba bounded at the south by the rhumb line between Ras si Ane (12°28.5' N, 43°19.6' E) and Husn Murad (12°40.4' N, 43°30.2' E);

(*e*) "Gulfs area" means the sea area located north-west of the rhumb line between Ras al Hadd (22°30' N, 59°48' E) and Ras Al Fasteh (25°04' N, 61°25' E);

(*f*) "Gulf of Aden area" means that part of the Gulf of Aden between the Red Sea and the Arabian Sea bounded to the west by the rhumb line between Ras si Ane (12°28.5' N, 43°19.6' E) and Husn Murad (12°40.4' N, 43°30.2' E) and to the east by the rhumb line between Ras Asir (11°50' N, 51°16.9' E) and Ras Fartak (15°35' N, 52°13.8' E);

(*g*) "Antarctic area" means the sea area south of latitude 60°S;

(*h*) "North-West European waters" means the area bounded by lines joining at the following points:

(i) 48°27' N on the French coast;

(ii) 48°27' N; 6°25'W;

(iii) 49°52' N; 7°44' W;

(iv) 50°30' N; 12° W;

(v) 56°30' N; 12° W;

(vi) 62° N; 3° W;

(vii) 62° N on the Norwegian coast;

(viii) 57°44.8' N on the Danish and Swedish coasts;

and includes the North Sea and its approaches, the Irish Sea and its approaches, the Celtic Sea, the English Channel and its approaches and part of the North-East Atlantic immediately to the west of Ireland;

(i) "Oman area of the Arabian Sea" means the sea area enclosed by the following coordinates:

(i) 22°30' N; 59°48' E;

(ii) 23°47.27' N; 60°35.73' E;

(iii) 22°40.62' N; 62°25.29' E;

(iv) 21°47.40' N; 63°22.22' E;

(v) 20°30.37' N; 62°52.41' E;

(vi) 19°45.90' N; 62°25.97' E;

(vii) 18°49.92' N; 62°02.94' E;

(viii) 17°44.36' N; 61°05.53' E;

(ix) 16°43.71' N; 60°25.62' E;

(x) 16°03.90' N; 59°32.24' E;

(xi) 15°15.20' N; 58°58.52' E;

(xii) 14°36.93' N; 58°10.23' E;

(xiii) 14°18.93' N; 57°27.03' E;

(xiv) 14°11.53' N; 56°53.75' E;

(xv) 13°53.80' N; 56°19.24' E;

(xvi) 13°45.86' N; 55°54.53' E;

(xvii) 14°27.38' N; 54°51.42' E;

(xviii) 14°40.10' N; 54°27.35'E;

(xix) 14°46.21' N; 54°08.56' E;

(xx) 15°20.74' N; 53°38.33' E;

(xxi) 15°48.69' N; 53°32.07' E;

(xxii) 16°23.02' N; 53°14.82' E;

(xxiii) 16°39.06' N; 53°06.52' E.

"surveyor" means a surveyor of ships or other competent person appointed under section 20 of the Act for the purposes of section 17 of the Act;

"tank" means an enclosed space which is formed by the permanent structure of a ship and which is designed for the carriage of liquid in bulk;

"volumes" and "areas" in a ship shall be calculated in all cases to moulded lines;

"wing tank" means any tank adjacent to the side shell plating.

(2) If ballast is discharged through an approved oil discharge monitoring and control system, evidence based on such a system to the effect that the oil content of the effluent did not exceed 15 parts per million shall be determinative that the ballast was clean, notwithstanding the presence of visible traces.

(3) Any reference in these Regulations to standards and guidelines developed by the Organization, shall include a reference to any document amending those standards and guidelines which is considered by the Minister to be relevant from time to time and is specified in a Marine Notice.

(4) A reference in a form set out in Schedule 2 or 3 to a regulation is to a regulation of the MARPOL Convention.

Application

3. (1) Unless expressly provided otherwise, these Regulations apply to all ships.

(2) In ships, other than oil tankers, fitted with cargo spaces which are constructed and utilised to carry oil in bulk of an aggregate capacity of 200 cubic metres or more, the requirements of Regulations 17, 26(4), 29, 30, 31, 32, 34 and 36 for oil tankers shall also apply to the construction and operation of these spaces, except that where such aggregate capacity is less than 1,000 cubic metres the requirements of Regulation 34(6) may apply in lieu of Regulation 29, 31 and 32.

(3) Where a cargo subject to the provisions of Annex II of the MARPOL Convention is carried in a cargo space of an oil tanker, the appropriate requirements of Annex II of the MARPOL Convention shall also apply.

(4) The requirements of Regulations 29, 31 and 32 shall not apply to oil tankers carrying asphalt or other products subject to the provisions of these Regulations, which through their physical properties inhibit effective product/water separation and monitoring, for which the control of discharge under Regulation 34 shall be effected by the retention of residues on board with discharge of all contaminated washings to reception facilities.

(5) Subject to paragraph (6) of this Regulation, paragraphs (6), (7) and (8) of Regulation 19 do not apply to an oil tanker delivered on or before 1 June 1982 that is solely engaged in specific trades between—

(*a*) ports or terminals within the State or a Party, or

(*b*) ports or terminals of Parties, where—

(i) the voyage is entirely within a Special Area, or

(ii) the voyage is entirely within other limits designated by the Organization.

(6) Paragraph (5) applies only when the ports or terminals where cargo is loaded on such voyages are provided with reception facilities adequate for the reception and treatment of all the ballast and tank washing water from oil tankers using them and all the following conditions are complied with:

(*a*) subject to the exceptions provided for in section 11 of the Act, all ballast water, including clean ballast water, and tank washing residues are retained on board and transferred to the reception facilities and the appropriate entry in the Oil Record Book Part II referred to in Regulation 36 is endorsed by the competent Port State authority;

(*b*) agreement has been reached between the State and the Governments of the Port States to which subparagraph (*a*) or (*b*) of paragraph (5) relates, concerning the use of an oil tanker delivered on or before 1 June 1982 for a specific trade;

(*c*) the adequacy of the reception facilities (in accordance with any Regulations relating to reception facilities) at the ports or terminals referred to in paragraph (5), have been approved by the State and the Governments of the Parties within which such ports or terminals are situated;

(*d*) the IOPP Certificate is endorsed to the effect that the oil tanker is solely engaged in such specific trade.

(7) Notwithstanding the definition of "major conversion"—

(*a*) conversion of an oil tanker of 20,000 tonnes deadweight and above delivered on or before 1 June 1982 to meet the requirements of Regulation 19 shall not be deemed to constitute a major conversion for the purposes of these Regulations,

(*b*) conversion of an oil tanker delivered before 6 July 1996 to meet the requirements of Regulation 20 or 21 shall not be deemed to constitute a major conversion for the purpose of these Regulations.

Exemptions and waivers

4. (1) Any ship, including a hydrofoil, air-cushion vehicle, near-surface craft and submarine craft, whose constructional features are such as to render the application of any of the provisions of Parts 3 and 4 relating to construction and equipment unreasonable or impracticable, may be exempted by the Minister from such provisions, but only if the construction and equipment of that ship

provides equivalent protection against pollution by oil, having regard to the service for which it is intended.

(2) Particulars of any exemption granted by the Minister under paragraph (1) shall be indicated in the Certificate referred to in Regulation 7.

(3) The Minister may waive the requirements of Regulations 29, 31 and 32, for any oil tanker which engages exclusively on voyages both of 72 hours or less in duration and within 50 miles from the nearest land, but only if the oil tanker is engaged exclusively in trades between ports or terminals within the State. Any such waiver shall be subject to the requirement that the oil tanker shall retain on board all oily mixtures for subsequent discharge to reception facilities and to the determination by the Minister that facilities available to receive such oily mixtures are adequate.

(4) The Minister may waive compliance with the requirements of Regulations 31 and 32 for oil tankers other than those referred to in paragraph (3) in cases where—

(*a*) the tanker is an oil tanker delivered on or before 1 June 1982 of 40,000 tonnes deadweight or above, as referred to in Regulation 3(5), engaged in specific trades, and the conditions specified in Regulation 3(6) are complied with, or

(*b*) the tanker is engaged exclusively in one or more of the following categories of voyages:

(i) voyages within special areas;

(ii) voyages within 50 miles from the nearest land outside special areas where the tanker is engaged in—

(I) trades between ports or terminals of the State, or

(II) restricted voyages as determined by the Minister and of 72 hours or less in duration;

but only if the following conditions are complied with in every relevant case:

(A) all oily mixtures are retained on board for subsequent discharge to reception facilities;

(B) for voyages specified in subparagraph (II), the Minister has determined that adequate reception facilities are available to receive such oily mixtures in those oil loading ports or terminals the tanker calls at;

(C) the IOPP Certificate, when required, is endorsed to the effect that the ship is exclusively engaged in one or more

or the categories of voyages specified in subparagraphs (i) and (ii)(II); and

(D) the quantity, time, and port of the discharge are recorded in the Oil Record Book.

Equivalents and measurements

5. (1) A fitting, material, appliance or apparatus may be fitted in a ship as an alternative to that required by these Regulations if a qualified person is satisfied that such fitting, material, appliance or apparatus is at least as effective as that required by these Regulations, but shall not permit the substitution of operational methods to control the discharge of oil as being equivalent to those design and construction features which are prescribed by these Regulations.

(2) For the purposes of these Regulations, the length of ships shall be measured in metres.

(3) For the purposes these Regulations, in ships designed with a rake of keel, the waterline on which length is measured shall be parallel to the designed waterline.

(4) For the purposes of these Regulations, forward and after perpendiculars shall be taken at the forward and after ends of the length (L). The forward perpendicular shall coincide with the foreside of the stem on the waterline on which the length is measured.

PART 2

Surveys and certification

Surveys

6. (1) Every oil tanker registered in the State of 150 gross tonnage and above, and every other ship registered in the State of 400 gross tonnage and above shall be subject to the following surveys:

(*a*) an initial survey made—

(i) before the ship is put into service, or

(ii) before the IOPP Certificate required under Regulation 7 is issued for the first time, which shall include a complete survey of its structure, equipment, systems, fittings, arrangements and material in so far as the ship is covered by these Regulations;

and this survey shall be such as to ensure that the structure, equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of these Regulations;

(*b*) a renewal survey made at intervals specified by the Minister, but not exceeding 5 years, except where paragraph (2)(ii), (5), (6) or (7) of Regulation 10 is applicable; this survey shall be such as to ensure that

the structure, equipment, systems, fittings, arrangements and material fully comply with applicable requirements of these Regulations;

(*c*) an intermediate survey made—

(i) within 3 months before or after the second anniversary date, or

(ii) within 3 months before or after the third anniversary date,

of the IOPP Certificate which shall take the place of one of the annual surveys specified in subparagraph (*d*); this survey shall be such as to ensure that the equipment and associated pump and piping systems, including oil discharge monitoring and control systems, crude oil washing systems, oily-water separating equipment and oil filtering systems, fully comply with the applicable requirements of these Regulations and are in good working order and be endorsed by the surveyor on the IOPP Certificate issued under Regulation 7 or 8;

(*d*) an annual survey made within 3 months before or after each anniversary date of the IOPP Certificate, including a general inspection of the structure, equipment, systems, fittings, arrangements and material referred to in subparagraph (*a*) to ensure that they have been maintained in accordance with paragraphs (4) and (5) and that they remain satisfactory for the service for which the ship is intended; each such survey shall be endorsed by the surveyor on the IOPP Certificate issued under Regulation 7 or 8;

(*e*) an additional survey either general or partial, according to the circumstances, shall be carried out after a repair resulting from investigations prescribed in paragraph (6), or whenever any important repairs or renewals are made; such a survey shall be made so as to ensure that the necessary repairs or renewals have been effectively made, that the material and workmanship of such repairs or renewals are in all respects satisfactory and that the ship complies in all respects with the requirements of these Regulations.

(2) Ships that are not subject to paragraph (1) shall comply with such measures as may be determined by the Minister in order to ensure that the applicable provisions of these Regulations are complied with.

(3) (*a*) Surveys of ships as regards the enforcement of the provisions of these Regulations shall be carried out by a qualified person.

(*b*) The Minister in nominating a qualified person to conduct surveys for the purpose of paragraph (3)(*a*) shall, as a minimum, empower any qualified person to—

(i) require repairs to a ship, and

(ii) carry out surveys, if requested by the appropriate authorities of a port State.

(*c*) Where the qualified person is a recognised organisation, any function under these Regulations (including the carrying out of a survey) may be performed only in respect of a ship flying the flag of the State.

(*d*) (i) Where a qualified person determines that the condition of the ship or its equipment does not correspond substantially with the particulars of the Certificate or is such that the ship is not fit to proceed to sea without presenting an unreasonable threat of harm to the marine environment, he or she shall immediately ensure that corrective action is taken and in due course notify the Minister.

(ii) If such corrective action is not taken, the Minister shall be notified immediately and the Certificate shall be withdrawn by the Minister.

(iii) If the ship is in a port of another Party, the appropriate authorities of that Party shall also be notified immediately.

(4) The condition of the ship and its equipment shall be maintained to conform with the provisions of these Regulations so as to ensure that the ship in all respects will remain fit to proceed to sea without presenting an unreasonable threat of harm to the marine environment.

(5) After any survey of the ship under paragraph (1) has been completed, no change shall be made in the structure, equipment, systems, fittings, arrangements or material covered by the survey, without the sanction of the Minister, except the direct replacement of such equipment and fittings.

(6) Whenever an accident occurs to a ship or a defect is discovered which substantially affects the integrity of the ship or the efficiency or completeness of its equipment covered by these Regulations, the master or owner of the ship shall report at the earliest opportunity to the Minister and qualified person responsible for issuing the relevant Certificate, who shall cause investigations to be initiated to determine whether a survey under this Regulation is necessary. If the ship is in a port of another Party the master or owner shall also report immediately to the appropriate authorities of the port State, and the Minister and qualified person concerned shall ascertain that such report has been made.

(7) The Minister shall, upon receipt of an application for survey and on payment of such fee (if any) as may be prescribed by him or her under section 17 of the Act, cause the ship to be surveyed by a surveyor of ships.

Issue or endorsement of IOPP Certificate

7. (1) On receipt of a declaration of survey carried out in accordance with Regulation 6 and on payment of such fee (if any) as may be prescribed, a person authorised by the Minister shall issue an IOPP Certificate to any oil tanker of 150 gross tonnage and above and any other ships of 400 gross tonnage and above which are engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties.

(2) Such certificate may alternatively be issued or endorsed, as appropriate, by a recognised organisation authorised by the Minister for this purpose.

(3) The owner of a ship specified in paragraph (1) shall ensure that the ship does not proceed to sea unless the IOPP Certificate is in force in relation to it.

Issue or endorsement of IOPP Certificate by another Government

8. (1) A ship which is entitled to fly the flag of the State may, at the request of the Minister, be surveyed in accordance with the corresponding provisions provided for or laid down by or on behalf of the Government of another Party, and on compliance with the corresponding provisions, be issued with an IOPP Certificate, or where appropriate, have the IOPP Certificate on the ship endorsed.

(2) A ship which is entitled to fly the flag of another Party may be surveyed by a surveyor of ships, at the request of the Government of that Party, and, if satisfied that the provisions of these Regulations are complied with, shall cause an IOPP Certificate to be issued to the ship and, where appropriate, endorse or authorise the endorsement of that Certificate on the ship in accordance with these Regulations.

Form of IOPP Certificate

9. The IOPP Certificate shall be in the form set out in Appendix II to Annex I of the MARPOL Convention, the text of which is, for convenience of reference, set out in Schedule 2.

Duration and validity of IOPP Certificate

10. (1) An IOPP Certificate shall remain in force for such period, not exceeding 5 years, as a qualified person may determine and specify in the Certificate.

(2) (*a*) Notwithstanding paragraph (1), when the renewal survey is completed within 3 months before the expiry date of the existing IOPP Certificate, the new IOPP Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding 5 years from the date of expiry of the existing IOPP Certificate.

(*b*) When the renewal survey is completed after the expiry date of the existing IOPP Certificate, the new IOPP Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding 5 years from the date of expiry of the existing IOPP Certificate.

(*c*) When the renewal survey is completed more than 3 months before the expiry date of the existing IOPP Certificate, the new IOPP Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding 5 years from the date of completion of the renewal survey.

(3) If an IOPP Certificate is issued for a period of less than 5 years, a qualified person may extend the validity of the Certificate beyond the expiry date to the

maximum period specified in paragraph (1), provided that the surveys referred to in subparagraphs (*d*) and (*e*) of Regulation 6(1) are carried out as appropriate.

(4) If a renewal survey has been completed and a new IOPP Certificate cannot be issued or placed on board the ship before the expiry date of the existing IOPP Certificate, a qualified person may endorse that Certificate and such a Certificate shall be accepted as valid for a further period which shall not exceed 5 months from the expiry date.

(5) If a ship at the time when an IOPP Certificate expires is not in a port in which it is to be surveyed, the Minister may extend the period of validity of the Certificate but such extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. An IOPP Certificate shall not be extended for a period longer than 3 months, and a ship to which an extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new IOPP Certificate. When the renewal survey is completed, the new IOPP Certificate shall be valid to a date not exceeding 5 years from the date of expiry of the existing IOPP Certificate before the extension was granted.

(6) An IOPP Certificate issued to a ship engaged on short voyages which has not been extended under the foregoing provisions of this Regulation may be extended by the Minister for a period of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new Certificate shall be valid to a date not exceeding 5 years from the date of expiry of the existing Certificate before the extension was granted.

(7) In such special circumstances as the Minister may determine, a new IOPP Certificate need not be dated from the date of expiry of the existing IOPP Certificate as required by paragraph (2)(*b*), (5) or (6). In these special circumstances, the new IOPP Certificate shall be valid to a date not exceeding 5 years from the date of completion of the renewal survey.

(8) If an annual or intermediate survey is completed before the period specified in Regulation 6, then:

(*a*) the anniversary date shown on the IOPP Certificate shall be amended by endorsement to a date which shall not be more than 3 months later than the date on which the survey was completed;

(*b*) the subsequent annual or intermediate survey required by Regulation 6(1) shall be completed at the intervals prescribed by that Regulation using the new anniversary date;

(*c*) the expiry date may remain unchanged provided one or more annual or intermediate surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by Regulation 6(1) are not exceeded.

(9) An IOPP Certificate issued under Regulation 7 or 8 shall cease to be valid in any of the following cases:

(*a*) if the relevant surveys are not completed within the periods specified under Regulation 6(1);

(*b*) if the Certificate is not endorsed in accordance with subparagraphs (*d*) or (*e*) of Regulation 6(1);

(*c*) if the ship transfers to the flag of another state.

Port State Control on operational requirements

11. (1) A ship that is registered in a Party may, when it is in a port within the jurisdiction of the State, be inspected by an officer of the Minister duly authorised by him or her to carry out such inspections if the officer has clear grounds for believing that the master or crew are not familiar with shipboard procedures under these Regulations relating to the prevention of pollution by oil.

(2) If, consequent on an inspection of a ship by an officer pursuant to his or her powers under paragraph (1), the officer confirms that the master or crew are not familiar with the procedures referred to in that paragraph, the Minister shall take such steps (which he or she is hereby empowered to take) as will ensure that the ship shall not sail from the port until such time as the master or crew or, as the case may be, both the master and crew have become familiar with those procedures.

(3) So much of the procedures specified in Article 5 of the MARPOL Convention as are appropriate shall apply, with any necessary modifications, for the purposes of this Regulation.

(4) Nothing in this Regulation shall operate to derogate from the powers and duties of the Minister or any other person under the Act or any Regulations made thereunder.

PART 3

Requirements for machinery spaces of all ships

Chapter 1

Construction

Tanks for oil residues (sludge)

12. (1) Every ship of 400 gross tonnage and above shall be provided with a tank or tanks of adequate capacity, having regard to the type of machinery and length of voyage, to receive the oily residue (sludges) which cannot be dealt with otherwise in accordance with the requirements of these Regulations such as those resulting from the purification of fuel and lubricating oils and oil leakages in the machinery spaces.

(2) Piping to and from sludge tanks shall have no direct connection overboard, other than the standard discharge connection referred to in Regulation 13.

(3) In ships delivered after 31 December 1979, such tanks shall be designed and constructed so as to facilitate their cleaning and the discharge of residues to reception facilities. Ships delivered on or before 31 December 1979 shall comply with this requirement as far as is reasonable and practicable.

Oil fuel tank protection

13. (1) This regulation shall apply to all ships with an aggregate oil fuel capacity of 600 m^3 and above which are delivered on or after 1 August 2010, as defined in Regulation 2(1).

(2) The application of this Regulation in determining the location of tanks used to carry oil fuel is, where applicable, subject to compliance with Regulation 20.

(3) In this Regulation—

"breadth" and "B" mean 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;

"breadth" and "B_B" mean the greatest moulded breadth of the ship, in metres, at or below the waterline (d_B);

"breadth" and "B_S" mean the greatest moulded breadth of the ship, in metres, at or below the deepest load line draught (d_S);

"C" is the ship's total volume of oil fuel, including that of the small oil fuel tanks, in m^3, at 98 per cent tank filling;

"depth" and "D_S" mean the moulded depth, in metres, measured at mid-length to the upper deck at side;

"length" and "L" mean 96 per cent of the total length on a waterline at 85 per cent 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;

"light ship draught" is the moulded draught amidships corresponding to the lightweight;

"load line draught" and "d_s" mean 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;

"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;

"oil fuel capacity" means the volume of a tank in m^3, at 98 per cent filling;

"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;

"partial load line draught" and "d_P" mean the light ship draught, measured in metres, plus 60 per cent of the difference between the light ship draught and the load line draught d_S;

"small oil fuel tank" is an oil fuel tank with a maximum individual capacity not greater than $30m^3$;

"upper deck" means the highest deck to which the watertight transverse bulkheads except aft peak bulkheads extend;

"waterline" and "d_B" mean the vertical distance, measured in metres, from the moulded baseline at mid-length to the waterline corresponding to 30 per cent of the depth D_S.

(4) This Regulation applies to all oil fuel tanks except small oil fuel tanks, but only if the aggregate capacity of such excluded tanks is not greater than $600m^3$.

(5) Individual oil fuel tanks shall not have a capacity of over $2{,}500m^3$.

(6) For ships, other than self-elevating drilling units, having an aggregate oil fuel capacity of $600m^3$ 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:

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

$$h = 2.0m,$$

whichever is the lesser. The minimum value of h = 0.76m

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, which is set out in Schedule 4.

(7) For ships having an aggregate oil fuel capacity of $600m^3$ or more but less than $5{,}000m^3$, 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 (set out in Schedule 4), is measured at any cross-section at right angles to the side shell, as specified below:

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

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

(8) For ships having an aggregate oil fuel capacity of 5,000m^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 (set out in Schedule 4), is measured at any cross-section at right angles to the side shell, as specified below:

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

$w = 2.0m$,

whichever is the lesser. The minimum value of $w = 1.0m$

(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 paragraph (6) and either paragraph (7) or (8), ships shall comply with the accidental oil fuel outflow performance standard specified below:

(*a*) 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:

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

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

where O_M = mean oil outflow parameter;

C = total oil fuel volume.

(*b*) The following general assumption shall apply when calculating the mean oil outflow parameter:

(i) the ship shall be assumed loaded to the partial load line draught d_p without trim or heel;

(ii) all oil fuel tanks shall be assumed loaded to 98 per cent of their volumetric capacity;

(iii) the nominal density of the oil fuel (ρ_n) shall generally be taken as 1,000 kg/m^3. If the density of the oil fuel is specifically restricted to a lesser value, the lesser value may be applied; and

(iv) for the purpose of these outflow calculations, the permeability of each oil fuel tank shall be taken as 0.99, unless proven otherwise.

(*c*) The following assumptions shall be used when combining the oil outflow parameters:

(i) 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^3

O_{MB} = mean outflow for bottom damage, in m^3

C = total oil fuel volume;

(ii) for bottom damage, independent calculations for mean outflow shall be done for 0m and 2.5m 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 0m tide condition, and

$O_{MB(2.5)}$ = mean outflow for minus 2.5m tide condition, in m^3.

(*d*) The mean outflow for side damage O_{MS} shall be calculated as follows:

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

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)(*f*);

$O_{S(i)}$ = the outflow, in m^3, from side damage to oil fuel tank i, which is assumed equal to the total volume in oil fuel tank i at 98 per cent filling.

(*e*) The mean outflow for bottom damage shall be calculated for each tidal condition as follows:

(i) $$O_{MB(0)} = \sum_{i}^{n} P_{B(i)} \; O_{B(i)} \; C_{DB(i)} \; [m^3]$$

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)(*g*);

$O_{B(i)}$ = the outflow from oil fuel tank i, in m^3, calculated in accordance with paragraph (11)(*e*)(iii); and

$C_{DB(i)}$ = factor to account for oil capture as defined in paragraph (11)(*e*)(iv).

(ii) $$O_{MB(2.5)} = \sum_{i}^{n} P_{B(i)} \; O_{B(i)} \; C_{DB(i)} \; [m^3]$$

where:

i, n, $P_{B(i)}$, and $C_{DB(i)}$ = as defined in subparagraph (i) above

$O_{B(i)}$ = the outflow from oil fuel tank i, in m^3, after tidal change.

(iii) 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:

(I) 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;

(II) 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 metres;

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 metres;

ρ_S = density of seawater, to be taken as 1,025 kg/m^3; and

ρ_n = nominal density of the oil fuel, as defined in paragraph (11)(*b*)(iii);

(III) 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 (see Figure 3, which is set out in Schedule 4):

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

where:

H_W = 1.0 m, when $Y_B = 0$

$H_W = B_B/50$ but not greater than 0.4m, when Y_B is greater than $B_B/5$ or 11.5m, 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, which is set out in Schedule 4;

for Y_B values outboard $B_B/5$ or 11.5m, 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;

(IV) 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.

(*f*) The probability P_S of breaching a compartment from side damage shall be calculated as follows:

(i) $P_S = P_{SL}. P_{SV}. P_{ST}$

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; and

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

(ii) 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 paragraph (11)(*f*)(iii), and P_{Sy} shall be calculated from the formulas provided in paragraph (11)(*f*)(iii)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} = the probability the damage will lie entirely below the tank;

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

P_{Sy} = the probability the damage will lie entirely outboard of 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 the aft terminal of L to the aft most point on the compartment being considered, in metres;

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

Z_l = the vertical distance from the moulded baseline to the lowest point on the compartment being considered, in metres. 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 metres. 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 metres;

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

(iii) Table of probabilities for side damage

X_a/L	P_{Sa}
0.00	0.000
0.05	0.023
0.10	0.068
0.15	0.117
0.20	0.167
0.25	0.217
0.30	0.267
0.35	0.317
0.40	0.367
0.45	0.417
0.50	0.467
0.55	0.517
0.60	0.567
0.65	0.617
0.70	0.667
0.75	0.717
0.80	0.767
0.85	0.817
0.90	0.867
0.95	0.917
1.00	0.967

X_f/L	P_{Sf}
0.00	0.967
0.05	0.917
0.10	0.867
0.15	0.817
0.20	0.767
0.25	0.717
0.30	0.667
0.35	0.617
0.40	0.567
0.45	0.517
0.50	0.467
0.55	0.417
0.60	0.367
0.65	0.317
0.70	0.267
0.75	0.217
0.80	0.167
0.85	0.117
0.90	0.068
0.95	0.023
1.00	0.000

Z_l/D_S	P_{Sl}
0.00	0.000
0.05	0.000
0.10	0.001
0.15	0.003
0.20	0.007
0.25	0.013
0.30	0.021
0.35	0.034
0.40	0.055
0.45	0.085
0.50	0.123
0.55	0.172
0.60	0.226
0.65	0.285
0.70	0.347
0.75	0.413
0.80	0.482
0.85	0.553
0.90	0.626
0.95	0.700
1.00	0.775

Z_u/D_S	P_{Su}
0.00	0.968
0.05	0.952
0.10	0.931
0.15	0.905
0.20	0.873
0.25	0.836
0.30	0.789
0.35	0.733
0.40	0.670
0.45	0.599
0.50	0.525
0.55	0.452
0.60	0.383
0.65	0.317
0.70	0.255
0.75	0.197
0.80	0.143
0.85	0.092
0.90	0.046
0.95	0.013
1.00	0.000

P_{Sy} shall be calculated as follows:

$P_{Sy} = (24.96 - 199.6\ y/\ B_S)(y/B_S)$ for $y/B_S \leqslant 0.05$

$P_{Sy} = 0.749 + \{5 - 44.4\ (y/B_S - 0.05)\}\ (y/B_S - 0.05)$ for $0.05 < y/B_S < 0.1$

$P_{Sy} = 0.888 + 0.56\ (y/B_S - 0.1)$ for $y/B_S \geqslant 0.1$

P_{Sy} shall not be taken greater than 1.

(*g*) The probability P_B of breaching a compartment from bottom damage shall be calculated as follows:

(i) $P_B = P_{BL}.\ P_{BT}.\ P_{BV}$

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 the 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;

(ii) 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 paragraph (11)(*g*)(iii), and P_{Bz} shall be calculated from the formulas provided in paragraph (11)(*g*)(iii)

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} = the probability the damage will lie entirely to port of the tank;

P_{Bs} = the probability the damage will lie entirely to starboard of the tank; and

P_{Bz} = the 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 are as defined in paragraph (11)(*f*)(ii);

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;

(iii) Table of probabilities for bottom damage

X_a/L	P_{Ba}
0.00	0.000
0.05	0.002
0.10	0.008
0.15	0.017
0.20	0.029
0.25	0.042
0.30	0.058
0.35	0.076
0.40	0.096
0.45	0.119
0.50	0.143
0.55	0.171
0.60	0.203
0.65	0.242
0.70	0.289
0.75	0.344
0.80	0.409
0.85	0.482
0.90	0.565
0.95	0.658
1.00	0.761

X_f/L	P_{Bf}
0.00	0.969
0.05	0.953
0.10	0.936
0.15	0.916
0.20	0.894
0.25	0.870
0.30	0.842
0.35	0.810
0.40	0.775
0.45	0.734
0.50	0.687
0.55	0.630
0.60	0.563
0.65	0.489
0.70	0.413
0.75	0.333
0.80	0.252
0.85	0.170
0.90	0.089
0.95	0.026
1.00	0.000

Y_p/B_B	P_{Bp}
0.00	0.844
0.05	0.794
0.10	0.744
0.15	0.694
0.20	0.644
0.25	0.594
0.30	0.544
0.35	0.494
0.40	0.444
0.45	0.394
0.50	0.344
0.55	0.297
0.60	0.253
0.65	0.211
0.70	0.171
0.75	0.133
0.80	0.097
0.85	0.063
0.90	0.032
0.95	0.009
1.00	0.000

Y_s/B_B	P_{Bs}
0.00	0.000
0.05	0.009
0.10	0.032
0.15	0.063
0.20	0.097
0.25	0.133
0.30	0.171
0.35	0.211
0.40	0.253
0.45	0.297
0.50	0.344
0.55	0.394
0.60	0.444
0.65	0.494
0.70	0.544
0.75	0.594
0.80	0.644
0.85	0.694
0.90	0.744
0.95	0.794
1.00	0.844

P_{Bz} shall be calculated as follows:

$$P_{Bz} = (14.5 — 67\ z/D_S)(z/D_S) \qquad \text{for } z/D_S \leqslant 0.1$$

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

P_{Bz} shall not be taken greater than 1.

(*h*) 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, a qualified person shall have due regard to the general safety aspects, including the need for maintenance and inspection of wing and double bottom tanks or spaces.

Standard discharge connection

14. To enable pipes of reception facilities to be connected with the ship's discharge pipeline for residues from machinery bilges and from sludge tanks, both lines shall be fitted with a standard discharge connection in accordance with the following table:

STANDARD DIMENSIONS OF FLANGES FOR DISCHARGE CONNECTIONS

Description	Dimension
Outside diameter	215mm
Inner diameter	According to pipe outside diameter
Bolt circle diameter	183mm
Slots in flange	6 holes 22mm in diameter equidistantly placed on a bolt circle of the above diameter, slotted to the flange periphery. The slot width to be 22mm
Flange thickness	20mm
Bolts and nuts: Quantity, diameter	6, each of 20mm in diameter and of suitable length

The flange is designed to accept pipes up to a maximum internal diameter of 125mm and shall be of steel or other equivalent material having a flat face. This flange, together with a gasket of oil-proof material, shall be suitable for a service pressure of 6 kPa.

Chapter 2

Equipment

Oil filtering equipment

15. (1) Except as specified in paragraph (3), any ship of 400 gross tonnage and above but less than 10,000 gross tonnage shall be fitted with oil filtering equipment complying with paragraph (6). Any such ship which may discharge

into the sea ballast water retained in fuel oil tanks in accordance with Regulation 17(2) shall comply with paragraph (2).

(2) Except as specified in paragraph (3), any ship of 10,000 gross tonnage and above, shall be fitted with oil filtering equipment complying with paragraph (7).

(3) Ships, such as hotel ships, storage vessels, and similar ships, which are stationary except for non-cargo-carrying relocation voyages need not be provided with oil filtering equipment. Such ships shall be provided with a holding tank having a volume adequate, to the satisfaction of the Minister, for the total retention on board of the oily bilge water. All oily bilge water shall be retained on board for subsequent discharge to reception facilities.

(4) Ships of less than 400 gross tonnage shall be equipped, as far as practicable, to retain on board oil or oily mixtures or discharge them in accordance with the requirements of Regulation 16(6).

(5) The Minister may waive the requirements of paragraphs (1) and (2) for:

(*a*) any ship engaged exclusively on voyages within special areas, or

(*b*) any ship certified under the International Code of Safety for High-Speed Craft (or otherwise within the scope of this Code with regard to size and design) engaged on a scheduled service with a turn-around time not exceeding 24 hours and covering also non-passenger/cargo-carrying relocation voyages for these ships,

(*c*) with regard to the provision of subparagraphs (*a*) and (*b*), that all of the following conditions are complied with:

(i) the ship is fitted with a holding tank having a volume adequate, to the satisfaction of the Minister, for the total retention on board of the oily bilge water;

(ii) all oily bilge water is retained on board for subsequent discharge to reception facilities;

(iii) the Minister has determined that adequate reception facilities are available to receive such oily bilge water in a sufficient number of ports or terminals the ship calls at;

(iv) the IOPP Certificate, when required, is endorsed to the effect that the ship is exclusively engaged on the voyages within special areas; and

(v) the quantity, time, and port of the discharge are recorded in the Oil Record Book Part I.

(6) Oil filtering equipment referred to in paragraph (1) shall be of a design approved by the Minister and shall be such as will ensure that any oily mixture discharged into the sea after passing through the system has an oil content not

exceeding 15 parts per million. In considering the design of such equipment, the Minister shall have regard to the specification recommended by the Organization.

(7) Oil filtering equipment referred to in paragraph (2) is of a design approved by the Minister and is such as will ensure that any oily mixture discharged into the sea after passing through the system or systems has an oil content not exceeding 15 parts per million and that it is provided with alarm arrangements to indicate when this level cannot be maintained and that the system is also provided with arrangements such as will ensure that any discharge of oily mixtures is automatically stopped when the oil content of the effluent exceeds 15 parts per million. In considering the design of such equipment and arrangements, the Minister shall have regard to the specification recommended by the Organization.

Chapter 3

Control of operational discharge of oil

Control of discharge of oil (Part 3)

16. (1) Subject to the provisions of section 11 of the Act and paragraphs (2), (3) and (6), any discharge into the sea of oil or oily mixtures from ships to which these Regulations apply is hereby prohibited.

(2) Any discharge into the sea outside special areas, of oil or oily mixtures from a ship of 400 gross tonnage and above shall be prohibited except when all the following conditions are satisfied:

(*a*) the ship is proceeding en route;

(*b*) the oily mixture is processed through an oil filtering equipment meeting the requirements of Regulation 15;

(*c*) the oil content of the effluent without dilution does not exceed 15 parts per million;

(*d*) the oily mixture does not originate from cargo pump room bilges on oil tankers; and

(*e*) the oily mixture, in case of oil tankers, is not mixed with oil cargo residues.

(3) Any discharge into the sea in special areas, of oil or oily mixtures from ships of 400 gross tonnage and above shall be prohibited except when all of the following conditions are satisfied:

(*a*) the ship is proceeding en route;

(*b*) the oily mixture is processed through an oil filtering equipment meeting the requirements of Regulation 15(7);

(*c*) the oil content of the effluent without dilution does not exceed 15 parts per million;

(*d*) the oily mixture does not originate from cargo pump room bilges on oil tankers; and

(*e*) the oily mixture, in case of oil tankers, is not mixed with oil cargo residues.

(4) In respect of the special area that is the Antarctic area, any discharge into the sea of oil or oily mixtures from any ship shall be prohibited.

(5) Nothing in this Regulation shall prohibit a ship on a voyage only part of which is in a special area from discharging outside a special area in accordance with paragraph (2).

(6) In the case of a ship of less than 400 gross tonnage, in all areas except the Antarctic area, oil and all oily mixtures shall either be retained on board for subsequent discharge to reception facilities or discharged into the sea in accordance with the following provisions:

(*a*) the ship is proceeding en route;

(*b*) the ship has in operation equipment of a design approved by the Minister that ensures that the oil content of the effluent without dilution does not exceed 15 parts per million;

(*c*) the oily mixture does not originate from cargo pump room bilges on oil tankers; and

(*d*) the oily mixture, in case of oil tankers, is not mixed with oil cargo residues.

(7) The following requirements apply generally:

(*a*) a discharge into the sea shall not contain chemicals or other substances in quantities or concentrations which are hazardous to the marine environment or chemicals or other substances introduced for the purpose of circumventing the conditions of discharge specified in this Regulation;

(*b*) the oil residues which cannot be discharged into the sea in compliance with this Regulation shall be retained on board or discharged to reception facilities.

Segregation of oil and water ballast and carriage of oil in forepeak tanks

17. (1) Except as provided in paragraph (2), in ships delivered after 31 December 1979, of 4,000 gross tonnage and above other than oil tankers, and in oil tankers delivered after 31 December 1979, of 150 gross tonnage and above, ballast water is not carried in any oil fuel tank.

(2) Where the need to carry large quantities of oil fuel render it necessary to carry ballast water which is not a clean ballast in any oil fuel tank, such ballast water is discharged to reception facilities or into the sea in compliance with Regulation 16 using the equipment specified in Regulation 15(2) and an entry shall be made in the Oil Record Book to this effect.

(3) In a ship of 400 gross tonnage and above, for which the building contract is placed after 1 January, 1982 or, in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 1 July, 1982, oil is not carried in a forepeak tank or a tank forward of the collision bulkhead.

(4) All ships to which paragraphs (1) and (3) do not apply shall comply with those paragraphs as far as is reasonable and practicable to do so.

Oil Record Book Part I — Machinery space operations

18. (1) Every oil tanker of 150 gross tonnage and above and every ship of 400 gross tonnage and above other than an oil tanker shall be provided with a book to be known as the Oil Record Book Part I. The Oil Record Book Part 1, whether as a part of the ship's official log book or otherwise, shall be in the form specified in Schedule 3.

(2) The Oil Record Book Part 1 shall be completed on each occasion, on a tank-to-tank basis if appropriate, whenever any of the following operations take place in the ship:

(*a*) ballasting or cleaning of oil fuel tanks;

(*b*) discharge of dirty ballast or cleaning water from oil fuel tanks;

(*c*) collection and disposal of oily residues (sludge and other oil residues);

(*d*) discharge overboard or disposal otherwise of bilge water which has accumulated in machinery spaces;

(*e*) bunkering of fuel or bulk lubricating oil.

(3) In the event of such discharge of oil or oily mixture as is referred to in section 11 of the Act or in the event of accidental or other exceptional discharge of oil not excepted by that section, a statement shall be made in the Oil Record Book Part I of the circumstances of, and the reasons for, the discharge.

(4) Each operation specified in paragraph (2) shall be fully recorded without delay in the Oil Record Book Part I, so that all the entries in the book appropriate to that operation are completed. Each completed operation shall be signed by the officer or officers in charge of the operations concerned and each completed page shall be signed by the master of the ship.

(5) Any failure of the oil filtering equipment shall be recorded in the Oil Record Book Part I.

(6) The Oil Record Book Part I shall be kept in such a place as to be readily available for inspection at all reasonable times and, except in the case of unmanned ships under tow, shall be kept on board the ship. It shall be preserved for a period of 3 years after the last entry has been made.

(7) An inspector may inspect the Oil Record Book Part I on board any ship to which these Regulations apply while the ship is in a port or in an offshore terminal in the State and may make a copy of any entry in that book and may require the master of the ship to certify that the copy is a true copy of such entry. The inspection of an Oil Record Book Part I and the taking of a certified copy by the inspector under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

(8) The master of a ship to which this Regulation applies shall ensure that paragraphs (2) to (6) are complied with in relation to the ship.

PART 4

Requirements for the cargo area of oil tankers

Chapter 1

Construction

Segregated ballast tanks

19. (1) Every crude oil tanker of 20,000 tonnes deadweight and above and every product carrier of 30,000 tonnes deadweight and above delivered after 1 June 1982, shall be provided with segregated ballast tanks and shall comply with paragraphs (2), (3) and (4), or paragraph (5) as appropriate.

(2) The capacity of the segregated ballast tanks shall be so determined that the ship may operate safely on ballast voyages without recourse to the use of cargo tanks for water ballast except as provided for in paragraph (3) or (4). In all cases, however, the capacity of segregated ballast tanks shall be at least such that, in any ballast condition at any part of the voyage, including the conditions consisting of lightweight plus segregated ballast only, the ship's draughts and trim can meet each of the following requirements:

(*a*) the moulded draught amidships (d_m) in metres (without taking into account any ship's deformation) shall not be less than:

$$d_m = 2.0 + 0.02L;$$

(*b*) the draughts at the forward and after perpendiculars shall correspond to those determined by the draught amidships (d_m) as specified in subparagraph (*a*), in association with the trim by the stern of not greater than 0.015L;

(*c*) in any case the draught at the after perpendicular shall not be less than that which is necessary to obtain full immersion of the propeller or propellers, as the case may be.

(3) Ballast water shall not be carried in cargo tanks, except—

(*a*) on those rare voyages when weather conditions are so severe that, in the opinion of the master, it is necessary to carry additional ballast water in cargo tanks for the safety of the ship;

(*b*) in exceptional cases where the particular character of the operation of an oil tanker renders it necessary to carry ballast water in excess of the quantity required under paragraph (2), but only if such operation of the oil tanker falls under the category of exceptional cases as established by the Organization.

Such additional ballast water shall be processed and discharged in compliance with Regulation 34 and an entry shall be made in the Oil Record Book Part II referred to in Regulation 36.

(4) In the case of crude oil tankers, the additional ballast permitted in paragraph (3) shall be carried in cargo tanks only if such tanks have been crude oil washed in accordance with Regulation 35 before departure from an oil unloading port or terminal.

(5) Notwithstanding the provisions of paragraph (2), the segregated ballast conditions for oil tankers less than 150 metres in length shall be to the satisfaction of the Minister.

(6) Subject to the provisions of paragraph (7), every crude oil tanker of 40,000 tonnes deadweight and above delivered on or before 1 June 1982, shall be provided with segregated ballast tanks and shall comply with the requirements of paragraphs (2) and (3).

(7) Crude oil tankers referred to in paragraph (6) may, in lieu of being provided with segregated ballast tanks, operate with a cargo tank cleaning procedure using crude oil washing in accordance with Regulations 33 and 35 unless the crude oil tanker is intended to carry crude oil which is not suitable for crude oil washing.

(8) Every product carrier of 40,000 tonnes deadweight and above delivered on or before 1 June 1982, shall be provided with segregated ballast tanks and shall comply with the requirements of paragraphs (2) and (3), or, alternatively, operate with dedicated clean ballast tanks in accordance with the following provisions:

(*a*) the product carrier has adequate tank capacity, dedicated solely to the carriage of clean ballast to meet the requirements of paragraphs (2) and (3);

(*b*) the arrangements and operational procedures for dedicated clean ballast tanks shall comply with the requirements established by the Minister, and such requirements shall contain at least all the provisions of

the revised Specification for Oil Tankers with Dedicated Clean Ballast Tanks adopted by the Organization by resolution A.495(XII);

(*c*) the product carrier shall be equipped with an oil content meter, approved by the Minister on the basis of specifications recommended by the Organization, to enable supervision of the oil content in ballast water being discharged;

(*d*) every product carrier operating with dedicated clean ballast tanks shall be provided, to the satisfaction of the Minister, with a Dedicated Clean Ballast Tank Operation Manual detailing the system and specifying operational procedures, as set out in IMO Resolution A.495(XII), and shall contain all the information set out in the Specifications referred to in subparagraph (*b*); if an alteration affecting the dedicated clean ballast tanks system is made, the Operation Manual shall be revised accordingly and the revision submitted to the Minister for approval.

(9) Any oil tanker which is not required to be provided with segregated ballast tanks in accordance with paragraph (1), (6) or (8) may, however, be qualified as a segregated ballast tanker, provided that it complies with the requirements of paragraphs (2) and (3), or paragraph (5), as appropriate.

(10) (*a*) Where an oil tanker delivered on or before 1 June 1982, is so constructed or operates in such a manner that it complies at all times with the draught and trim requirements set out in paragraph (2) without recourse to the use of ballast water, it shall be deemed to comply with the segregated ballast tank requirements referred to in paragraph (6) but only if the following conditions are complied with:

(i) operational procedures and ballast arrangements have been approved by the Minister;

(ii) agreement is reached between the State and the Governments of the port Parties concerned when the draught and trim requirements are achieved through an operational procedure;

(iii) the IOPP Certificate is endorsed to the effect that the oil tanker is operating with special ballast arrangements.

(*b*) The master of an oil tanker to which subparagraph (*a*) relates shall ensure that ballast water is not carried in oil tanks except on those rare voyages when weather conditions are so severe that, in the opinion of the master, it is necessary to carry additional ballast water in cargo tanks for the safety of the ship. Such additional ballast water shall be processed and discharged in compliance with Regulation 34 and in accordance with the requirements of Regulations 29, 31 and 32 and entry shall be made in the Oil Record Book Part II referred to in Regulation 36.

(11) Oil tankers of 70,000 tonnes deadweight and above delivered after 31 December 1979, shall be provided with segregated ballast tanks and shall comply with paragraphs (2), (3) and (4), or paragraph (5), as appropriate.

(12) Every crude oil tanker of 20,000 tonnes deadweight and above and every product carrier of 30,000 tonnes deadweight and above delivered after 1 June 1982, except those tankers that meet the requirements of Regulation 20, the segregated ballast tanks required to provide the capacity to comply with the requirements of paragraph (2), which are located within the cargo tank length, shall be arranged in accordance with the requirements of paragraphs (13), (14) and (15) to provide a measure of protection against oil outflow in the event of grounding or collision.

(13) Segregated ballast tanks and spaces other than oil tanks within the cargo tank length (L_t) shall be so arranged as to comply with the following requirement:

$$\Sigma PA_C + \Sigma\, PA_S \geqslant J\,[L_t(B + 2D)]$$

where :

PA_C = the side shell area in square metres for each segregated ballast tank or space other than an oil tank based on projected moulded dimensions,

PA_S= the bottom shell area in square metres for each such tank or space based on projected moulded dimensions,

L_t = length in metres between the forward and after extremities of the cargo tanks,

B = maximum breadth of the ship in metres as defined in Regulation 2(1),

D = moulded depth in metres measured vertically from the top of the keel to the top of the freeboard deck beam at side amidships. In ships having rounded gunwales, the moulded depth shall be measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwale were of angular design,

J = 0.45 for oil tankers of 20,000 tonnes deadweight, 0.30 for oil tankers of 200,000 tonnes deadweight and above, subject to paragraph (14).

For intermediate values of deadweight the value of "J" shall be determined by linear interpolation.

For the purposes of this Regulation, the symbols in this paragraph shall have the meaning assigned to them in this paragraph.

(14) For tankers of 200,000 tonnes deadweight and above the value of "J" may be reduced as follows:

$$\text{J reduced} = [\text{J} - (\text{a} - \frac{\text{O}_\text{C} + \text{O}_\text{S}}{4\text{O}_\text{A}})] \qquad \text{or 0.2 whichever is greater}$$

where:

a = 0.25 for oil tankers of 200,000 tonnes deadweight,

a = 0.40 for oil tankers of 300,000 tonnes deadweight,

a = 0.50 for oil tankers of 420,000 tonnes deadweight and above.

For intermediate values of deadweight the value of "a" shall be determined by linear interpolation.

O_C = as defined in Regulation 25(1)(*a*),

O_S = as defined in Regulation 25(1)(*b*),

O_A = the allowable oil outflow as required by Regulation 26 (*b*).

(15) In the determination of " PA_C" and " PA_S " for segregated ballast tanks and spaces other than oil tanks the following shall apply:

(*a*) the minimum width of each wing tank or space either of which extends for the full depth of the ship's side or from the deck to the top of the double bottom shall be not less than 2 metres; the width shall be measured inboard from the ship's side at right angles to the centre line; where a lesser width is provided the wing tank or space shall not be taken into account when calculating the protecting area "PA_C"; and

(*b*) the minimum vertical depth of each double bottom tank or space shall be B/15 or 2 metres, whichever is the lesser; where a lesser depth is provided the bottom tank or space shall not be taken into account when calculating the protecting area "PA_S ".

The minimum width and depth of wing tanks and double bottom tanks shall be measured clear of the bilge area and, in the case of minimum width, shall be measured clear of any rounded gunwale area.

Double hull and double bottom requirements for oil tankers delivered on or after 6 July 1996

20. (1) This Regulation shall apply to oil tankers of 600 tonnes deadweight and above delivered on or after 6 July 1996.

(2) Every oil tanker of 5,000 tonnes deadweight and above shall—

(*a*) in lieu of paragraphs (12) to (15) of Regulation 19, as applicable, comply with the requirements of paragraph (3) unless it is subject to the provisions of paragraphs (4) and (5),

(*b*) comply, if applicable, with the requirements of Regulation 28(6).

(3) The entire cargo tank length shall be protected by ballast tanks or spaces other than cargo and fuel oil tanks as follows:

(*a*) wing tanks or spaces:

wing tanks or spaces shall extend either for the full depth of the ship's side or from the top of the double bottom to the uppermost deck, disregarding a rounded gunwale where fitted. They shall be arranged such that the cargo tanks are located inboard of the moulded line of the side shell plating, nowhere less than the distance w which, as shown in Figure 2, which is set out in Schedule 4, is measured at any cross-section at right angles to the side shell, as specified below:

$$w = 0.5 + \frac{DW}{20{,}000}\,(m) \text{ or}$$

w = 2.0m, whichever is the lesser;

with a minimum value of w = 1.0m;

(*b*) double bottom tanks or spaces:

at any cross-section the depth of each double bottom tank or space shall be such that the distance h between the bottom of the cargo tanks and the moulded line of the bottom shell plating measured at right angles to the bottom shell plating as shown in Figure 2, which is set out in Schedule 4, is not less than specified below:

h = B/15(m) or,

h = 2.0m, whichever is the lesser;

with a minimum value of h = 1.0m;

(*c*) turn of the bilge area or at locations without a clearly defined turn of the bilge:

when the distances h and w are different, the distance w shall have preference at levels exceeding 1.5h above the baseline as shown in Figure 2, which is set out in Schedule 4;

(*d*) the aggregate capacity of ballast tanks:

on crude oil tankers of 20,000 tonnes deadweight and above and product carriers of 30,000 tonnes deadweight and above, the aggregate capacity of wing tanks, double bottom tanks, forepeak tanks and after peak tanks shall not be less than the capacity of segregated ballast tanks necessary to meet the requirements of

Regulation 19; wing tanks or spaces and double bottom tanks used to meet the requirements of that Regulation shall be located as uniformly as practicable along the cargo tank length; additional segregated ballast capacity provided for reducing longitudinal hull girder bending stress, trim, etc., may be located anywhere within the ship;

(*e*) suction wells in cargo tanks:

suction wells in cargo tanks may protrude into the double bottom below the boundary line defined by the distance h, but only if such wells are as small as practicable and the distance between the well bottom and bottom shell plating is not less than 0.5h;

(*f*) ballast and cargo piping:

ballast piping and other piping such as sounding and vent piping to ballast tanks shall not pass through cargo tanks; cargo piping and similar piping to cargo tanks shall not pass through ballast tanks; exemptions to this requirement may be granted for short lengths of piping, provided that they are completely welded or equivalent.

(4) The following applies for double bottom tanks or spaces:

(*a*) double bottom tanks or spaces as required by paragraph (3)(*b*) may be dispensed with, provided that the design of the tanker is such that the cargo and vapour pressure exerted on the bottom shell plating forming a single boundary between the cargo and the sea does not exceed the external hydrostatic water pressure, as expressed by the following formula:

$$f \times h_C \times p_C \times g + p \leqslant d_n \times p_s \times g$$

where:

h_C = height of cargo in contact with the bottom shell plating in metres,

p_C = maximum cargo density in kg/m^3,

d_n = minimum operating draught under any expected loading condition in meters,

p_S = density of seawater in kg/m^3,

p = maximum set pressure above atmospheric pressure (gauge pressure) of pressure/vacuum valve provided for the cargo tank in Pa provided for the cargo tank in bars,

f = safety factor = 1.1,

g = standard acceleration of gravity (9.81 m/s^2);

(*b*) any horizontal partition necessary to fulfil the requirements of subparagraph (*a*) shall be located at a height of not less than B/6 or 6 m, whichever is the lesser, but not more than 0.6D, above the baseline where D is the moulded depth amidships;

(*c*) the location of wing tanks or spaces shall be as defined in paragraph (3)(*a*), except that, below a level 1.5 h above the baseline where h is as defined in paragraph (3)(*b*), the cargo tank boundary line may be vertical down to the bottom plating, as shown in Figure 4, which is set out in Schedule 4.

(5) Other methods of design and construction of oil tankers may also be accepted as alternatives to the requirements prescribed in paragraph (3), provided that such methods ensure at least the same level of protection against oil pollution in the event of collision or stranding and are approved in principle by the Organization.

(6) Every oil tanker of less than 5,000 tonnes deadweight shall comply with paragraphs (3) and (4), or shall—

(*a*) at least be fitted with double bottom tanks or spaces having such a depth that the distance h specified in paragraph (3)(*b*) complies with the following:

h = B/15 (m),

with a minimum value of h = 0.76m;

in the turn of the bilge area and at locations without a clearly defined turn of the bilge, the cargo tank boundary line shall run parallel to the line of the midship flat bottom as shown in Figure 1, which is set out in Schedule 4, and

(*b*) be provided with cargo tanks so arranged that the capacity of each cargo tank does not exceed 700 m^3 unless wing tanks or spaces are arranged in accordance with paragraph (3)(*a*) complying with the following:

$$w = 0.4 + \frac{24\,DW}{20{,}000}\ (m)$$

with a minimum value of w = 0.76 m.

(7) Oil shall not be carried in any space extending forward of a collision bulkhead located in accordance with Regulation II —1/11 of the International Convention for the Safety of Life at Sea, 1974, as amended. An oil tanker that is not required to have a collision bulkhead in accordance with that Regulation

shall not carry oil in any space extending forward of the transverse plane perpendicular to the centreline that is located as if it were a collision bulkhead located in accordance with that Regulation.

(8) In approving the design and construction of oil tankers to be built in accordance with the provisions of this Regulation, a qualified person shall have due regard to the general safety aspects including the need for the maintenance and inspections of wing and double bottom tanks or spaces.

Double hull and double bottom requirements for oil tankers delivered before 6 July 1996

21. Subject to any exemption under Article 8 of Regulation (EC) No. 417/2002 of the European Parliament and of the Council, as amended, on the accelerated phasing-in of double hull or equivalent design requirements for single hull oil tankers[3], every oil tanker concerned shall comply with Articles 4, 5 and 7 of that Regulation.

Pump-room bottom protection

22. (1) This Regulation applies to oil tankers of 5,000 tonnes deadweight and above constructed on or after 1 January 2007.

(2) The pump-room shall be provided with a double bottom such that at any cross-section the depth of each double bottom tank or space shall be such that the distance h between the bottom of the pump-room and the ship's base line measured at right angles to the ship's base line is not less than specified below:

h = B/15(m) or

h = 2 m,

whichever is the lesser, and where the minimum value of h = 1 m.

(3) In case of pump rooms whose bottom plate is located above the base line by at least the minimum height required in paragraph (2)(such as gondola stern designs), a double bottom construction in way of the pump-room is not necessary.

(4) Ballast pumps shall be provided with suitable arrangements to ensure efficient suction from double bottom tanks.

(5) Notwithstanding the provisions of paragraphs (2) and (3), where the flooding of the pump-room would not render the ballast or cargo pumping system inoperative, a double bottom need not be fitted.

Accidental oil outflow performance

23. (1) This Regulation applies to oil tankers delivered on or after 1 January 2010.

(2) In this Regulation—

[3]O.J. No. L64, 7 March 2002, p 2

"breadth (B_B)" means the greatest moulded breadth of the ship, in metres, at or below the waterline d_B;

"breadth (B_S)" means the greatest moulded breadth of the ship, in metres, at or below the deepest load line d_S;

"depth (D_S)" means the moulded depth, in metres, measured at mid-length to the upper deck at side;

"load line draught (d_S)" means the vertical distance, in metres, from the moulded baseline at mid-length to the waterline corresponding to the summer freeboard to be assigned to the ship; calculations pertaining to this Regulation to be based on draught d_S, notwithstanding assigned draughts that may exceed d_S, such as the tropical loadline;

"waterline (d_B)" means the vertical distance, in metres, from the moulded baseline at mid-length to the waterline corresponding to 30 per cent of the depth D_S.

(3) To provide adequate protection against oil pollution in the event of collision or stranding the following shall be complied with:

(*a*) for oil tankers of 5,000 tonnes deadweight (DWT) and above, the mean oil outflow parameter shall be as follows:

$O_M \leqslant 0.015$	for $C \leqslant 200{,}000m^3$
$O_M \leqslant 0.012 + (0.003/200{,}000)(400{,}000\text{-}C)$	for $200{,}000m^3 < C < 400{,}000m^3$
$O_M \leqslant 0.012$	for $C = 400{,}000m^3$

for combination carriers between 5,000 tonnes deadweight (DWT) and $200{,}000m^3$ capacity, the mean oil outflow parameter may be applied, provided calculations are submitted to the satisfaction of a qualified person, demonstrating that after accounting for its increased structural strength, the combination carrier has at least equivalent oil outflow performance to a standard double hull tanker of the same size having a $O_M \leqslant = 0.015$

$O_M \leqslant 0.021$	for $C \leqslant 100{,}000m^3$
$O_M \leqslant 0.015 + (0.006/100{,}000)(200{,}000\text{-}C)$	for $100{,}000m^3 < C \leqslant 200{,}000m^3$

where:

O_M = mean oil outflow parameter

C = total volume of cargo oil, in m^3, at 98 per cent tank filling

(*b*) for oil tankers of less than 5,000 tonnes deadweight (DWT):

the length of each cargo tank shall not exceed 10 m or one of the following values, whichever is the greater:

(i) where no longitudinal bulkhead is provided inside the cargo tanks:

$$\frac{(0.5\ \frac{b_i}{B} + 0.1)\ L}{}$$ but not to exceed 0.2L

(ii) where a centreline longitudinal bulkhead is provided inside the cargo tanks:

$$\frac{(0.25\ \frac{b_i}{B} + 0.15)\ L}{}$$

(iii) where 2 or more longitudinal bulkheads are provided inside the cargo tanks:

(I) for wing cargo tanks: 0.2L

(II) for centre cargo tanks:

(A) if $\frac{b_i}{B} \geq 0.2L$:0.2L

(B) if $\frac{b_i}{B} < 0.2L$

— where no centreline longitudinal bulkhead is provided:

$$\frac{(0.5\ \frac{b_i}{B} + 0.1)\ L}{}$$

— where a centreline longitudinal bulkhead is provided:

$$\frac{(0.25\ \frac{b_i}{B} + 0.15)\ L}{}$$

where b_i is the minimum distance from the ship's side to the outer longitudinal bulkhead of the tank in question measured inboard at right angles to the centreline at the level corresponding to the assigned summer freeboard.

(4) The following general assumptions shall apply when calculating the mean oil outflow parameter:

(*a*) the cargo block length extends between the forward and aft extremities of all tanks arranged for the carriage of cargo oil, including slop tanks;

(*b*) where this Regulation refers to cargo tanks, it shall be understood to include all cargo tanks, slop tanks and fuel tanks located within the cargo block length;

(*c*) the ship shall be assumed loaded to the load line draught d_S without trim or heel;

(*d*) all cargo oil tanks shall be assumed loaded to 98 per cent of their volumetric capacity and the nominal density of the cargo oil (ρ_n) shall be calculated as follows:

$$\rho_n = 1000 \text{ (DWT)/C (kg/m}^3\text{)};$$

(*e*) for the purposes of these outflow calculations, the permeability of each space within the cargo block, including cargo tanks, ballast tanks and other non-oil spaces shall be taken as 0.99, unless proven otherwise;

(*f*) suction wells may be neglected in the determination of tank location provided that such wells are as small as practicable and the distance between the well bottom and bottom shell plating is not less than 0.5h, where h is the height as defined in Regulation 20(3)(*b*).

(5) The following assumptions shall be used when combining the oil outflow parameters:

(*a*) the mean oil outflow shall be calculated independently for side damage and for bottom damage and then combined into the 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^3;

O_{MB} = mean outflow for bottom damage, in m^3;

(*b*) for bottom damage, independent calculations for mean outflow shall be done for 0 m and minus 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;

$O_{MB(2.5)}$ = mean outflow for minus 2.5 m tide condition, in m^3.

(6) The mean outflow for side damage O_{MS} shall be calculated as follows:

$$O_{MS} = C_3 \sum_{i}^{n} P_{S(i)} \; O_{S(i)} \; (m^3)$$

where:

i = represents each cargo tank under consideration;

n = total number of cargo tanks;

$P_{S(i)}$ = the probability of penetrating cargo tank i from side damage, calculated in accordance with paragraph (8)(*a*);

$O_{S(i)}$ = the outflow, in m^3, from side damage to cargo tank i, which is assumed equal to the total volume in cargo tank i at 98 per cent filling, unless it is proven through the application of the Guidelines referred to in Regulation 20(5) that any significant cargo volume will be retained;

C_3 = 0.77 for ships having two longitudinal bulkheads inside the cargo tanks, provided these bulkheads are continuous over the cargo block and $P_{S(i)}$ is developed in accordance with this Regulation. C_3 equals 1.0 for all other ships or when $P_{S(i)}$ is developed in accordance with paragraph (10).

(7) The mean outflow for bottom damage shall be calculated for each tidal condition as follows:

(*a*) $$O_{MB(0)} = \sum_{i}^{n} P_{B(i)} \; O_{B(i)} \; C_{DB(i)} \; (m^3)$$

where:

i = represents each cargo tank under consideration;

n = the total number of cargo tanks;

$P_{B(i)}$ = the probability of penetrating cargo tank i from bottom damage, calculated in accordance with, paragraph (9)(*a*);

$O_{B(i)}$ = the outflow from cargo tank i, in m^3, calculated in accordance with paragraph (7)(*c*) of this Regulation;

$C_{DB(i)}$ = factor to account for oil capture as defined in paragraph (7)(*d*);

(*b*) $$O_{MB(2.5)} = \sum_{i}^{n} P_{B(i)} \; O_{B(i)} \; C_{DB(i)} \; (m^3)$$

where:

i, n, $P_{B(i)}$ and $C_{DB(i)}$ = as defined in subparagraph (*a*);

$O_{B(i)}$ = the outflow from cargo tank i, in m^3, after tidal change;

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

(i) the ship shall be assumed stranded with zero trim and heel, with the stranded draught prior to tidal change equal to the load line draught d_S;

(ii) the cargo level after damage shall be calculated as follows:

$$h_c = \{ (d_S + t_c — Z_l)(\rho_S) — (1000\ p) / g \} / \rho_n$$

where:

h_c = the height of the cargo oil above Z_l, in metres;

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 cargo tank above baseline, in m;

ρ_S = density of seawater, to be taken as 1,025 kg/m^3;

p = if an inert gas system is fitted, the normal overpressure, in kPa, to be taken as not less than 5 kPa; if an inert gas system is not fitted, the overpressure may be taken as 0;

g = the acceleration of gravity, to be taken as 9.81 m/s^2;

ρ_n = nominal density of cargo oil, calculated in accordance with paragraph (4)(*d*);

(iii) for cargo tanks bounded by the bottom shell, unless proven otherwise, oil outflow OB(i) shall be taken not less than 1 per cent of the total volume of cargo oil loaded in cargo tank i, to account for initial exchange losses and dynamic effects due to current and waves;

(*d*) in the case of bottom damage, a portion from the outflow from a cargo 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 cargo tanks bounded from below by non-oil compartments;

$C_{DB(i)}$ = 1.0 for cargo tanks bounded by the bottom shell.

(8) The probability PS of breaching a compartment from side damage shall be calculated as follows:

(*a*) $P_S = P_{SL}\ P_{SV}\ P_{ST}$

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;

(*b*) P_{Sa}, P_{Sf}, P_{Sl}, P_{Su} and P_{Sy} shall be determined by linear interpolation from the table of probabilities for side damage provided in paragraph (8)(*c*), 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} = the probability the damage will lie entirely below the tank;

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

P_{Sy} = the probability the damage will lie entirely outboard of 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 the aft terminal of L to the aftmost point on the compartment being considered, in metres;

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

Z_l = the vertical distance from the moulded baseline to the lowest point on the compartment being considered, in metres;

Z_u = the vertical distance from the moulded baseline to the highest point on the compartment being considered, in metres; Z_u is not to be taken greater than D_S;

y = the minimum horizontal distance measured at right angles to the centreline between the compartment under consideration and the side shell in metres;

(*c*) Table of probabilities for side damage

X_a/L	P_{Sa}
0.00	0.000
0.05	0.023
0.10	0.068
0.15	0.117
0.20	0.167
0.25	0.217
0.30	0.267
0.35	0.317
0.40	0.367
0.45	0.417
0.50	0.467
0.55	0.517
0.60	0.567
0.65	0.617
0.70	0.667
0.75	0.717
0.80	0.767
0.85	0.817
0.90	0.867
0.95	0.917
1.00	0.967

X_f/L	P_{Sf}
0.00	0.967
0.05	0.917
0.10	0.867
0.15	0.817
0.20	0.767
0.25	0.717
0.30	0.667
0.35	0.617
0.40	0.567
0.45	0.517
0.50	0.467
0.55	0.417
0.60	0.367
0.65	0.317
0.70	0.267
0.75	0.217
0.80	0.167
0.85	0.117
0.90	0.068
0.95	0.023
1.00	0.000

Z_l/D_S	P_{Sl}
0.00	0.000
0.05	0.000
0.10	0.001
0.15	0.003
0.20	0.007
0.25	0.013
0.30	0.021
0.35	0.034
0.40	0.055
0.45	0.085
0.50	0.123
0.55	0.172
0.60	0.226
0.65	0.285
0.70	0.347
0.75	0.413
0.80	0.482
0.85	0.553
0.90	0.626
0.95	0.700
1.00	0.775

Z_u/D_S	P_{Su}
0.00	0.968
0.05	0.952
0.10	0.931
0.15	0.905
0.20	0.873
0.25	0.836
0.30	0.789
0.35	0.733
0.40	0.670
0.45	0.599
0.50	0.525
0.55	0.452
0.60	0.383
0.65	0.317
0.70	0.255
0.75	0.197
0.80	0.143
0.85	0.092
0.90	0.046
0.95	0.013
1.00	0.000

P_{Sy} shall be calculated as follows:

$P_{Sy} = (24.96 - 199.6\ y/\ B_S)(y/B_S)$ for $y/B_S \leqslant 0.05$

$P_{Sy} = 0.749 + \{5 - 44.4\ (y/B_S - 0.05)\}\ (y/B_S - 0.05)$ for $0.05 < y/B_S < 0.1$

$P_{Sy} = 0.888 + 0.56\ (y/B_S - 0.1)$ for $y/B_S \geqslant 0.1$

P_{Sy} shall not be taken greater than 1.

(9) The probability P_B of breaching a compartment from bottom damage shall be calculated as follows:

(*a*) $P_B = P_{BL}\ P_{BT}\ P_{BV}$

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 the transverse zone bounded by Y_p and Y_s;

$P_{BV} = 1 - P_{Bz}$ = probability the damage will extend vertically above the boundary defined by z;

(*b*) P_{Ba}, P_{Bf}, P_{Bp}, P_{Bs} and P_{Bfz} shall be determined by linear interpolation from the table of probabilities for bottom damage provided in paragraph (9)(*c*), 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} = the probability the damage will lie entirely to port of the tank;

P_{Bs} = the probability the damage will lie entirely to starboard of the tank;

P_{Bz} = the 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 are as defined in paragraph (8)(*b*);

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, in metres;

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, in metres;

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, in metres;

(*c*) Table of probabilities for bottom damage

X_a/L	P_{Ba}
0.00	0.000
0.05	0.002
0.10	0.008
0.15	0.017
0.20	0.029
0.25	0.042
0.30	0.058
0.35	0.076
0.40	0.096
0.45	0.119
0.50	0.143
0.55	0.171
0.60	0.203
0.65	0.242
0.70	0.289
0.75	0.344
0.80	0.409
0.85	0.482
0.90	0.565
0.95	0.658
1.00	0.761

X_f/L	P_{Bf}
0.00	0.969
0.05	0.953
0.10	0.936
0.15	0.916
0.20	0.894
0.25	0.870
0.30	0.842
0.35	0.810
0.40	0.775
0.45	0.734
0.50	0.687
0.55	0.630
0.60	0.563
0.65	0.489
0.70	0.413
0.75	0.333
0.80	0.252
0.85	0.170
0.90	0.089
0.95	0.026
1.00	0.000

Y_p/B_B	P_{Bp}
0.00	0.844
0.05	0.794
0.10	0.744
0.15	0.694
0.20	0.644
0.25	0.594
0.30	0.544
0.35	0.494
0.40	0.444
0.45	0.394
0.50	0.344
0.55	0.297
0.60	0.253
0.65	0.211
0.70	0.171
0.75	0.133
0.80	0.097
0.85	0.063
0.90	0.032
0.95	0.009
1.00	0.000

Y_s/B_B	P_{Bs}
0.00	0.000
0.05	0.009
0.10	0.032
0.15	0.063
0.20	0.097
0.25	0.133
0.30	0.171
0.35	0.211
0.40	0.253
0.45	0.297
0.50	0.344
0.55	0.394
0.60	0.444
0.65	0.494
0.70	0.544
0.75	0.594
0.80	0.644
0.85	0.694
0.90	0.744
0.95	0.794
1.00	0.844

P_{Bz} shall be calculated as follows:

$P_{Bz} = (14.5 - 67\ z/D_S)(z/D_S)$ for $z/D_S \leqslant 0.1$,

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

P_{Bz} shall not be taken greater than 1.

(10) This Regulation uses a simplified probabilistic approach where a summation is carried out over the contributions to the mean outflow from each cargo tank. For certain designs such as those characterized by the occurrence of steps/recesses in bulkheads/decks and for sloping bulkheads and/or a pronounced hull curvature, more rigorous calculations may be appropriate. In such cases one of the following calculation procedures may be applied:

(*a*) the probabilities referred to in paragraphs (8) and (9) may be calculated with more precision through application of hypothetical sub-compartments;

(*b*) the probabilities referred to in paragraphs (8) and (9) may be calculated through direct application of the probability density functions contained in the Guidelines referred to in Regulation 20 (5);

(*c*) the oil outflow performance may be evaluated in accordance with the method described in the Guidelines referred to in Regulation 20(5).

(11) The following provisions regarding piping arrangements shall apply:

(*a*) lines of piping that run through cargo tanks in a position less than $0.30B_S$ from the ship's side or less than $0.30D_S$ from the ship's bottom shall be fitted with valves or similar closing devices at the point at which they open into any cargo tank; these valves shall be kept closed at sea at any time when the tanks contain cargo oil, except that they may be opened only for cargo transfer needed for essential cargo operations;

(*b*) credit for reducing oil outflow through the use of an emergency rapid cargo transfer system or other system arranged to mitigate oil outflow in the event of an accident may be taken into account only after the effectiveness and safety aspects of the system are approved by the Organization; submittal for approval shall be made in accordance with the provisions of the Guidelines referred to in Regulation 20(5).

Damage assumptions

24. (1) For the purpose of calculating hypothetical oil outflow from oil tankers, 3 dimensions of the extent of damage of a parallelepiped on the side and bottom of the ship are assumed as follows. In the case of bottom damages 2 conditions are set forth to be applied individually to the stated portions of the oil tanker:

(*a*) side damage

(i) longitudinal extent (l_c):	$\frac{1}{3}\ L^{2/3}$ or 14.5 metres, whichever is less
(ii) transverse extent (t_c)(inboard from the ship's side at right angles to the centreline at the level corresponding to the assigned summer freeboard):	$\frac{B}{5}$ or 11.5 metres, whichever is less
(iii) vertical extent (V_c):	from the base line upwards without limit,

(*b*) bottom damage

	For 0.3L from the forward perpendicular of the ship	Any other part of the ship
(i) longitudinal extent (l_s):		$\frac{L}{10}$ or 5 metres, whichever is less
(ii) transverse extent (t_s):	$\frac{B}{6}$ or 10 meters, whichever is less, but not less than 5 metres	5 metres
(iii) vertical extent from the base line (V_s):	$\frac{B}{15}$ or 6 metres, whichever is less.	

(2) Wherever the symbols given in this Regulation appear in this Part, they have the meaning as defined in this Regulation.

Hypothetical outflow of oil

25. (1) The hypothetical outflow of oil in the case of side damage (O_c) and bottom damage (O_s) shall be calculated by the following formulae with respect to compartments breached by damage to all conceivable locations along the length of the ship to the extent as defined in Regulation 24:

(*a*) for side damages:

$$O_c = \Sigma Wi + \Sigma K_i C_i$$

(*b*) for bottom damages:

$$O_s = 1/3\ (\Sigma Z_i W_i + \Sigma Z_i C_i)$$

where:

W_i = volume of a wing tank in cubic metres assumed to be breached by the damage as specified in Regulation 24; W_i for a segregated ballast tank may be taken equal to zero,

C_i = volume of a centre tank in cubic metres assumed to be breached by the damage as specified in Regulation 24; C_i for a segregated ballast tank may be taken equal to zero,

$K_i = 1 - b_i / t_c$ when b_i is equal to or greater than t_c, K_i shall be taken equal to zero,

Z_i = 1 - h_i / v_s when h_i is equal to or greater than v_s, Z_i shall be taken equal to zero,

b_i = width of wing tank in metres under consideration measured inboard from the ship's side at right angles to the centreline at the level corresponding to the assigned summer freeboard,

h_i = minimum depth of the double bottom in metres under consideration; where no double bottom is fitted h_i shall be taken equal to zero.

Wherever symbols given in this paragraph appear in this Part, they have the meaning as defined in this Regulation.

(2) If a void space or segregated ballast tank of a length less than l_c as defined in Regulation 24 is located between wing oil tanks, O_c in formula (I) in paragraph (1)(*a*) may be calculated on the basis of volume W_i being the actual volume of one such tank (where they are of equal capacity) or the smaller of the 2 tanks (if they differ in capacity) adjacent to such space, multiplied by S_i as defined in this paragraph and taking for all other wing tanks involved in such a collision the value of the actual full volume:

$$S_i = 1 - l_i / l_c$$

where l_i = length in metres of void space or segregated ballast tank under consideration.

(3) (*a*) Credit shall only be given in respect of double bottom tanks which are either empty or carrying clean water when cargo is carried in the tanks above.

(*b*) Where the double bottom does not extend for the full length and width of the tank involved, the double bottom is considered non-existent and the volume of the tanks above the area of the bottom damage shall be included for the purposes of the formula in paragraph (1)(*b*) even if the tank is not considered breached because of the installation of such a partial double bottom.

(*c*) Suction wells may be neglected in the determination of the value h_i provided such wells are not excessive in area and extend below the tank for a minimum distance and in no case more than half the height of the double bottom. If the depth of such a well exceeds half the height of the double bottom, h_i shall be taken equal to the double bottom height minus the well height.

Piping serving such wells if installed within the double bottom shall be fitted with valves or other closing arrangements located at the point of connection to the tank served to prevent oil outflow in the event of damage to the piping. Such piping shall be installed as high

from the bottom shell as possible. These valves shall be kept closed at sea at any time when the tank contains oil cargo, except that they may be opened only for cargo transfer needed for the purpose of trimming of the ship.

(4) In the case where bottom damage simultaneously involves four centre tanks, the value of O_s may be calculated according to the formula:

$$O_s = 1/4\ (\Sigma_i\ W_i + \Sigma Z_i\ C_i)$$

(5) A qualified person may credit as reducing oil outflow in case of bottom damage, an installed cargo transfer system having an emergency high suction in each cargo oil tank, capable of transferring from a breached tank or tanks to segregated ballast tanks or to available cargo tankage if it can be assured that such tanks will have sufficient ullage. Credit for such a system would be governed by ability to transfer in two hours of operation oil equal to one half of the largest of the breached tanks involved and by availability of equivalent receiving capacity in ballast or cargo tanks. The credit shall be confined to permitting calculation of O_s according to the formula set out in paragraph (4). The pipes for such suctions shall be installed at least at a height not less than the vertical extent of the bottom damage v_s.

(6) This Regulation does not apply to oil tankers delivered on or after 1 January 2010.

Limitation of size and arrangement of cargo tanks

26. (1) Except as provided in paragraph (7), each of the following shall comply with this Regulation:

(*a*) every oil tanker of 150 gross tonnage and above delivered after 31 December 1979, and

(*b*) every oil tanker of 150 gross tonnage and above delivered on or before 31 December 1979, which falls into either of the following categories:

(i) a tanker, the delivery of which is after 1 January 1977, or

(ii) a tanker to which both the following conditions apply:

(I) delivery is not later than 1 January 1977; and

(II) the building contract is placed after 1 January 1974, or in cases where no building contract has previously been placed, the keel is laid or the tanker is at a similar stage of construction after 30 June 1974.

(2) Cargo tanks of oil tankers are of such size and arrangements that the hypothetical outflow O_c or O_s calculated in accordance with Regulation 25 anywhere in the length of the ship does not exceed 30,000 cubic metres or 400 $\sqrt[3]{DW}DW$, whichever is the greater, but subject to a maximum of 40,000 cubic metres.

(3) The volume of any one wing cargo oil tank of an oil tanker does not exceed 75 per cent of the limits of the hypothetical oil outflow referred to in paragraph (2). The volume of any one centre cargo oil tank does not exceed 50,000 cubic metres. However, in segregated ballast oil tankers as defined in Regulation 19, the permitted volume of a wing cargo oil tank situated between two segregated ballast tanks, each exceeding l_c in length, may be increased to the maximum limit of hypothetical oil outflow provided that the width of the wing tanks exceeds t_c.

(4) The length of each cargo tank does not exceed 10 metres or one of the following values, whichever is the greater:

(*a*) where no longitudinal bulkhead is provided inside the cargo tanks:

$$\frac{(0.5\ \frac{b_i}{B} + 0.1)\ L}{}$$ but not to exceed 0.2L

but not to exceed 0.2L

(*b*) where a centreline longitudinal bulkhead is provided inside the cargo tanks:

$$\frac{(0.25\ \frac{b_i}{B} + 0.15)\ L}{}$$

(*c*) where 2 or more longitudinal bulkheads are provided inside the cargo tanks:

(i) for wing cargo tanks: 0.2L

(ii) for centre cargo tanks:

(I) if $\frac{b_i}{B}$ is equal to or greater than one-fifth: 0.2L

(II) if $\frac{b_i}{B}$ is less than one-fifth:

—where no centreline longitudinal bulkhead is provided:

$$\frac{(0.5\ \frac{b_i}{B} + 0.1)\ L}{}$$

—where a centreline longitudinal bulkhead is provided:

$$\frac{(0.25\ \frac{b_i}{B} + 0.15)\ L}{}$$

where b_i is the minimum distance from the ship's side to the outer longitudinal bulkhead of the tank in question measured inboard at right angles to the centreline at the level corresponding to the assigned summer freeboard.

(5) In order not to exceed the volume limits established by paragraphs (2), (3) and (4) and irrespective of the accepted type of cargo transfer system

installed, when such system interconnects 2 or more cargo tanks, valves or other similar closing devices are provided for separating the tanks from each other and that those valves or devices are kept closed when the tanker is at sea.

(6) Lines of piping which run through cargo tanks in a position less than t_c from the ship's side or less than v_c from the ship's bottom are fitted with valves or similar closing devices at the point at which they open into any cargo tank and that those valves are kept closed at sea at any time when the tanks contain cargo oil, except that they may be opened only for cargo transfer needed for the purpose of trimming of the ship.

(7) This Regulation does not apply to oil tankers delivered on or after 1 January 2010.

Intact stability

27. (1) Every oil tanker of 5,000 tonnes deadweight and above delivered on or after 1 February 2002, shall comply with the intact stability criteria specified in subparagraphs (*a*) and (*b*) as appropriate, for any operating draught under the worst possible conditions of cargo and ballast loading, consistent with good operational practice, including intermediate stages of liquid transfer operations; under all conditions the ballast tanks shall be assumed slack.

(*a*) In port, the initial metacentric height GM_o, corrected for free surface measured at 0^o heel, shall be not less than 0.15m;

(*b*) At sea:

(i) the area under the righting lever curve (GZ curve) shall be not less than 0.055 m.rad up to $\theta = 30^o$ angle of heel and not less than 0.09 m.rad up to $\theta = 40°$ or other angle of flooding θ_f if this angle is less than 40°; additionally, the area under the righting lever curve (GZ curve) between the angles of heel of 30° and 40° or between 30° and θ_f, if this angle is less than 40°, shall be not less than 0.03 m.rad;

(ii) the righting lever GZ shall be at least 0.20m at an angle of heel equal to or greater than 30°;

(iii) the maximum righting arm shall occur at an angle of heel preferably exceeding 30° but not less than 25°; and

(iv) the initial metacentric height GM_0, corrected for free surface measured at 0° heel, shall be not less than 0.15m.

In this subparagraph, 'θ_f' is the angle of heel at which the openings in the hull, superstructures or deck-houses, which cannot be closed weather tight, immerse. In applying this criterion, small openings through which progressive flooding cannot take place need not be considered as open.

(2) The requirements of paragraph (1) shall be met through design measures. For combination carriers simple supplementary operational procedures may be allowed.

(3) Simple supplementary operational procedures for liquid transfer operations referred to in paragraph (2) shall mean written procedures made available to the master which—

(*a*) are approved by a qualified person,

(*b*) indicate those cargo and ballast tanks which may, under any specific condition of liquid transfer and possible range of cargo densities, be slack and still allow the stability criteria to be met; the slack tanks may vary during the liquid transfer operations and be of any combination provided they satisfy the criteria,

(*c*) will be readily understandable to the officer-in-charge of liquid transfer operations,

(*d*) provide for planned sequences of cargo/ ballast transfer operations,

(*e*) allow comparisons of attained and required stability using stability performance criteria in graphical or tabular form,

(*f*) require no extensive mathematical calculations by the officer-in-charge,

(*g*) provide for corrective actions to be taken by the officer-in-charge in case of departure from recommended values and in case of emergency situations, and

(*h*) are prominently displayed in the approved trim and stability booklet and at the station that controls cargo transfer or ballast transfer or both cargo and ballast transfer operations and in any computer software by which stability calculations are performed.

Subdivision and damage stability

28. (1) Every oil tanker delivered after 31 December 1979, shall comply with the subdivision and damage stability criteria as specified in paragraph (3), after the assumed side or bottom damage as specified in paragraph (2), for any operating draught reflecting actual partial or full load conditions consistent with trim and strength of the ship as well as specific gravities of the cargo and that such damage is applied to all conceivable locations along the length of the ship as follows:

(*a*) in tankers of more than 225 metres in length, anywhere in the ship's length;

(*b*) in tankers of more than 150 metres, but not exceeding 225 metres in length, anywhere in the ship's length except involving either after or forward bulkhead bounding the machinery space located aft; the

machinery space shall be treated as a single floodable compartment; and

(*c*) in tankers not exceeding 150 metres in length, anywhere in the ship's length between adjacent transverse bulkheads with the exception of the machinery space, but in tankers of 100 metres or less in length where all requirements of paragraph (3) cannot be fulfilled without materially impairing the operational qualities of the ship, the Minister may exempt the ship from compliance with the requirements concerned.

Ballast conditions where the tanker is not carrying oil in cargo tanks excluding any oil residues, shall not be considered.

(2) The following provisions regarding the extent and the character of the assumed damage shall apply:

(*a*) side damage

(i) longitudinal extent:	$\frac{1}{3}$ ($L^{2/3}$) or 14.5 metres, whichever is less
(ii) transverse extent (inboard from the ship's side at right angles to the centreline at the level of the summer load line):	$\frac{B}{5}$ or 11.5 metres, whichever is less
(iii) vertical extent:	From the moulded line of the bottom shell plating at centreline, upwards without limit;

(*b*) bottom damage

	For 0.3L from forward perpendicular of the ship	Any other part of the ship
(i) longitudinal extent:	$\frac{1}{3}$ ($L^{2/3}$) or 14.5 metres, whichever is less	$\frac{1}{3}$ ($L^{2/3}$) or 5 metres, whichever is less

(ii) transverse extent:	$\frac{B}{6}$ or 10 metres, whichever is less	$\frac{B}{6}$ or 5 metres, whichever is less
(iii) vertical extent:	$\frac{B}{15}$ or 6 metres, whichever is less, measured from the moulded line of the bottom shell plating at centreline;	$\frac{B}{15}$ or 6 metres, whichever is less, measured from the moulded line of the bottom shell plating at centreline;

(*c*) if any damage of a lesser extent than the maximum extent of damage specified in subparagraphs (*a*) and (*b*) would result in a more severe condition, such damage shall be considered;

(*d*) where the damage involving transverse bulkheads is envisaged as specified in paragraphs (1)(*a*) and (*b*), transverse watertight bulkheads shall be spaced at least at a distance equal to the longitudinal extent of assumed damage specified in paragraph (2)(*a*) in order to be considered effective; where transverse bulkheads are spaced at a lesser distance, one or more of these bulkheads within such extent of damage shall be assumed as non-existent for the purpose of determining flooded compartments;

(*e*) where the damage between adjacent transverse watertight bulkheads is envisaged as specified in paragraph (1)(*c*), no main transverse bulkhead or a transverse bulkhead bounding side tanks or double bottom tanks shall be assumed damaged, unless—

(i) the spacing of the adjacent bulkheads is less than the longitudinal extent of assumed damage specified in paragraph (2)(*a*), or

(ii) there is a step or a recess in a transverse bulkhead of more than 3.05 metres in length, located within the extent of penetration of assumed damage; the step formed by the after peak bulkhead and after peak tank top shall not be regarded as a step for the purpose of this Regulation;

(*f*) if pipes, ducts or tunnels are situated within the assumed extent of damage, arrangements shall be made so that progressive flooding cannot thereby extend to compartments other than those assumed to be floodable for each case of damage.

(3) Oil tankers shall be regarded as complying with the damage stability criteria if all of the following requirements are met:

(*a*) the final waterline, taking into account sinkage, heel and trim, shall be below the lower edge of any opening through which progressive flooding may take place; such openings shall include air-pipes and those which are closed by means of weathertight doors or hatch covers and may exclude those openings closed by means of watertight manhole covers and flush scuttles, small watertight cargo tank hatch covers which maintain the high integrity of the deck, remotely operated watertight sliding doors, and side scuttles of the non-opening type;

(*b*) in the final stage of flooding, the angle of heel due to unsymmetrical flooding shall not exceed 25 degrees, provided that this angle may be increased up to 30 degrees if no deck edge immersion occurs;

(*c*) the stability in the final stage of flooding shall be investigated and may be regarded as sufficient if the righting lever curve has at least a range of 20 degrees beyond the position of equilibrium in association with a maximum residual righting lever of at least 0.1 metre within the 20 degrees range; the area under the curve within this range shall not be less than 0.0175 metre radians. Unprotected openings shall not be immersed within this range unless the space concerned is assumed to be flooded; within this range, the immersion of any of the openings listed in subparagraph (*a*) and other openings capable of being closed watertight may be permitted;

(*d*) a qualified person shall be satisfied that the stability is sufficient during intermediate stages of flooding;

(*e*) equalisation arrangements requiring mechanical aids such as valves or cross-levelling pipes, if fitted, shall not be considered for the purpose of reducing an angle of heel or attaining the minimum range of residual stability to meet the requirements of subparagraphs (*a*), (*b*) and (*c*) and sufficient residual stability shall be maintained during all stages where equalisation is used; spaces which are linked by ducts of a large cross-sectional area may be considered to be common.

(4) The requirements of paragraph (1) shall be confirmed by calculations which take into consideration the design characteristics of the ship, the arrangements, configurations and contents of the damaged compartments; and the distribution, specific gravities and the free surface effect of liquids. The calculations shall be based on the following:

(*a*) account shall be taken of any empty or partially filled tank, the specific gravity of cargoes carried, as well as any outflow of liquids from damaged compartments;

(*b*) the permeabilities assumed for spaces flooded as a result of damage shall be as follows:

Spaces	Permeabilities
appropriated to stores	0.60
occupied by accommodation	0.95
occupied by machinery	0.85
voids	0.95
intended for consumable liquids	0 to 0.95*
intended for other liquids	0 to 0.95*

*the permeability of partially filled compartments shall be consistent with the amount of liquid carried in the compartment; whenever damage penetrates a tank containing liquids, it shall be assumed that the contents are completely lost from that compartment and replaced by salt water up to the level of the final plane of equilibrium;

(*c*) the buoyancy of any superstructure directly above the side damage shall be disregarded; the unflooded parts of superstructures beyond the extent of damage, however, may be taken into consideration provided that they are separated from the damaged space by watertight bulkheads and the requirements of paragraph (3)(*a*) in respect of these intact spaces are complied with; hinged watertight doors may be acceptable in watertight bulkheads in the superstructure;

(*d*) the free surface effect shall be calculated at an angle of heel of 5 degrees for each individual compartment; a qualified person may require or allow the free surface corrections to be calculated at an angle of heel greater than 5 degrees for partially filled tanks; and

(*e*) in calculating the effect of free surfaces of consumable liquids it shall be assumed that, for each type of liquid at least one transverse pair or a single centreline tank has a free surface and the tank or combination of tanks to be taken into account shall be those where the effect of free surfaces is the greatest.

(5) The master of every oil tanker to which this Regulation applies, and the person in charge of a non-self-propelled oil tanker to which these Regulations apply shall be supplied in an approved form with—

(*a*) information relative to loading and distribution of cargo necessary to ensure compliance with the provisions of this Regulation, and

(*b*) data on the ability of the ship to comply with damage stability criteria as determined by this Regulation, including the effect of relaxations that may have been allowed under paragraph (1)(*c*).

(6) For oil tankers of 20,000 tonnes deadweight and above delivered on or after 6 July 1996, the damage assumptions prescribed in paragraph (2)(*b*) shall be supplemented by the following assumed bottom raking damage:

(*a*) longitudinal extent:

(i) ships of 75,000 tonnes deadweight and above:
0.6L measured from the forward perpendicular;

(ii) ships of less than 75,000 tonnes deadweight:
0.4L measured from the forward perpendicular;

(*b*) transverse extent: B/3 anywhere in the bottom;

(*c*) vertical extent: breach of the outer hull.

Slop tanks

29. (1) Subject to Regulation 4(3), oil tankers of 150 tons gross tonnage and above shall be provided with slop tank arrangements in accordance with the requirements of subparagraphs (*a*), (*b*) and (*c*) of paragraph (2). In oil tankers delivered on or before 31 December 1979, any cargo tank may be designated as a slop tank.

(2) (*a*) Adequate means shall be provided for cleaning the cargo tanks and transferring the dirty ballast residue and tank washings from the cargo tanks into a slop tank of a type approved by a qualified person.

(*b*) In this system arrangements shall be provided to transfer the oily waste into a slop tank or combination of slop tanks in such a way that any effluent discharge into the sea will be such as to comply with Regulation 34.

(*c*) The arrangements of the slop tank or combination of slop tanks shall have a capacity necessary to retain the slop generated by tank washings, oil residues and dirty ballast residues. The total capacity of the slop tank or tanks shall not be less than 3 per cent of the oil carrying capacity of the ship, except that a qualified person may accept—

(i) 2 per cent for such oil tankers where the tank washing arrangements are such that once the slop tank or tanks are charged with washing water, this water is sufficient for tank washing and, where applicable, for providing the driving fluid for eductors, without the introduction of additional water into the system,

(ii) 2 per cent where segregated ballast tanks or dedicated clean ballast tanks are provided in accordance with Regulation 18 or where a cargo tank cleaning system using crude oil washing is fitted in accordance with Regulation 4; such capacity may be further reduced to 1.5 per cent for such oil tankers where the tank washing arrangements are such that once the slop tank or tanks are charged with washing water, this water is sufficient for tank washing and, where applicable, for providing the driving fluid for eductors, without the introduction of additional water into the system, and

(iii) 1 per cent for combination carriers where oil cargo is only carried in tanks with smooth walls; such capacity may be further reduced to 0.8 per cent where the tank washing arrangements are such that once the slop tank or tanks are charged with washing water, this water is sufficient for tank washing and, where applicable, for providing the driving fluid for eductors, without the introduction of additional water into the system.

(*d*) Slop tanks shall be so designed particularly in respect of the position of inlets, outlets, baffles or weirs where fitted, so as to avoid excessive turbulence and entrainment of oil or emulsion with the water.

(3) Oil tankers of 70,000 tonnes deadweight and above delivered after 31 December 1979, shall be provided with at least 2 slop tanks.

Pumping, piping and discharge arrangement

30. (1) In every oil tanker, a discharge manifold for connection to reception facilities for the discharge of dirty ballast water or oil contaminated water shall be located on the open deck on both sides of the ship.

(2) In every oil tanker of 150 gross tonnage and above, pipelines for the discharge to the sea of ballast water or oil contaminated water from cargo tank areas which may be permitted under Regulation 34 shall be led to the open deck or to the ship's side above the waterline in the deepest ballast condition. Different piping arrangements to permit operation in the manner permitted in paragraph (6) may be accepted.

(3) In oil tankers of 150 gross tonnage and above delivered after 31 December 1979, means shall be provided for stopping the discharge into the sea of ballast water or oil contaminated water from cargo tank areas, other than those discharges below the waterline permitted under paragraph (6), from a position on the upper deck or above located so that

(*a*) the manifold in use referred to in paragraph (1), and

(*b*) the discharge to the sea from the pipelines referred to in paragraph (2),

may be visually observed. Means for stopping the discharge need not be provided at the observation position if a positive communication system such as a telephone or radio system is provided between the observation position and the discharge control position.

(4) Every oil tanker delivered after 1 June 1982, that is required to be provided with segregated ballast tanks or fitted with a crude oil washing system, shall comply with the following requirements:

(*a*) it shall be equipped with oil piping so designed and installed that oil retention in the lines is minimised;

(*b*) means shall be provided to drain all cargo pumps and all oil lines at the completion of cargo discharge, where necessary by connection to a stripping device;

(*c*) the line and pump draining shall be capable of being discharged both ashore and to a cargo tank or a slop tank;

(*d*) for discharge ashore, a special small diameter line shall be provided and shall be connected outboard of the ship's manifold valves.

(5) Every oil tanker delivered on or before 1 June 1982, that is required to be provided with segregated ballast tanks, or to be fitted with a crude oil washing system, or to operate with dedicated clean ballast tanks, shall comply with the provisions of paragraph (4)(*b*).

(6) On every oil tanker the discharge of ballast water or oil contaminated water from cargo tank areas shall take place above the waterline, except as follows:

(*a*) segregated ballast and clean ballast may be discharged below the waterline—

(i) in ports or at offshore terminals,

(ii) at sea by gravity, or

(iii) at sea by pumps if the ballast water exchange is performed under the provisions of regulation D-1.1 of the International Convention for the Control and Management of Ships' Ballast Water and Sediments;

but only if the surface of the ballast water has been examined immediately before the discharge to ensure that no contamination with oil has taken place;

(*b*) oil tankers delivered on or before 31 December 1979, which, without modification, are not capable of discharging segregated ballast above the waterline may discharge segregated ballast below the waterline at sea; but only if the surface of the ballast water has been examined immediately before the discharge to ensure that no contamination with oil has taken place;

(*c*) oil tankers delivered on or before 1 June 1982, operating with dedicated clean ballast tanks, which without modification are not capable of discharging ballast water from dedicated clean ballast tanks above the waterline, may discharge this ballast below the waterline provided that the discharge of the ballast water is supervised in accordance with Regulation 18(8)(*c*);

(*d*) on every oil tanker at sea, dirty ballast water or oil contaminated water from tanks in the cargo area, other than slop tanks, may be

discharged by gravity below the waterline, provided that sufficient time has elapsed in order to allow for a separation of oil and water to have taken place and the ballast water has been examined immediately before the discharge with an oil and water interface detector referred to in Regulation 32 in order to ensure that the height of the interface is such that the discharge does not involve any increased risk of harm to the marine environment;

(*e*) on oil tankers delivered on or before 31 December 1979, that are at sea, dirty ballast water or oil contaminated water from cargo tank areas may be discharged below the waterline, subsequent to or in lieu of the discharge by the method referred to in subparagraph (*d*), but only if—

(i) a part of the flow of such water is led through permanent piping to a readily accessible location on the upper deck or above where it may be visually observed during the discharge operation, and

(ii) such part flow arrangements comply with the requirements established by a qualified person, which shall contain at least all the provisions of the Specifications for the Design, Installation and Operation of a Part Flow System for Control of Overboard Discharges adopted by the Organization;

(7) (*a*) Every oil tanker of 150 gross tonnage and above delivered on or after 1 January 2010, which has installed a sea chest that is permanently connected to the cargo pipeline system, shall be equipped with both a sea chest valve and an inboard isolation valve.

(*b*) In addition to these valves, the sea chest shall be capable of isolation from the cargo piping system whilst the tanker is loading, transporting, or discharging cargo by use of a positive means that is to the satisfaction of the Minister.

(*c*) Such a positive means is a facility that is installed in the pipeline system in order to prevent, under all circumstances, the section of pipeline between the sea chest valve and the inboard valve being filled with cargo.

Chapter 2

Equipment

Oil discharge monitoring and control system

31. (1) Subject to paragraphs (3) and (4) of Regulation 4, oil tankers of 150 gross tonnage and above shall be equipped with an oil discharge monitoring and control system approved by the Minister.

(2) (*a*) Every oil tanker shall be fitted with an oil discharge monitoring and control system, the design and installation of which is in compliance

with the specification recommended by the Organization and has been approved by the Minister.

(*b*) The system shall be fitted with a recording device to provide a continuous record of the discharge in litres per nautical mile and total quantity discharged, or the oil content and rate of discharge. This record shall be identifiable as to time and date and shall be kept for at least three years.

(*c*) The oil discharge monitor and control system shall come into operation when there is any discharge of effluent into the sea and shall be such as will ensure that any discharge of oily mixture is automatically stopped when the instantaneous rate of discharge of oil exceeds that permitted by Regulation 34.

(*d*) Any failure of this monitoring and control system shall stop the discharge and be noted in the Oil Record Book.

(*e*) In the event of failure of the oil discharge monitoring and control system, a manually operated alternative method may be used, but the defective unit shall be made operable as soon as possible.

(*f*) Subject to allowance by the port State authority a tanker with a defective oil discharge monitoring and control system may undertake one ballast voyage before proceeding to a repair port.

(3) The oil discharge monitoring and control system shall be designed and installed in compliance with the Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers developed by the Organization and approved by the Minister.

(4) Instructions as to the operation of the system shall be in accordance with an operational manual approved by the Minister. They shall cover manual as well as automatic operations and shall be intended to ensure that at no time shall oil be discharged except in compliance with the conditions specified in Regulation 34.

Oil and water interface detector

32. (1) Subject to paragraphs (3) and (4) of Regulation 4, oil tankers of 150 gross tonnage and above shall be provided with effective oil and water interface detectors approved by a qualified person for a rapid and accurate determination of the oil and water interface in slop tanks and shall be available for use in other tanks where the separation of oil and water is effected and from which it is intended to discharge effluent direct to the sea.

(2) For the purposes of this Regulation, regard shall be had to the Specifications for Oil/Water Interface Detectors adopted by the Organization by resolution MEPC.5(XIII).

Crude oil washing requirements

33. (1) Every crude oil tanker of 20,000 tons deadweight and above delivered after 1 June 1982, shall be fitted with a cargo tank cleaning system using crude oil washing. This system shall have fully complied with the requirements of this Regulation within one year after the tanker was first engaged in the trade of carrying crude oil or by the end of the third voyage carrying crude oil suitable for crude oil washing, whichever occurs later.

(2) Crude oil washing installation and associated equipment and arrangements shall comply with the Specifications for the Design, Operation and Control of Crude Oil Washing Systems adopted by the International Conference on Tanker Safety and Pollution Prevention, 1978, in resolution 15 and as may be revised by the Organization. When a ship is not required, in accordance with paragraph (1), to be, but is equipped with crude oil washing equipment, it shall comply with the safety aspects of the above mentioned Specifications.

(3) Every crude oil washing system required to be provided in accordance with Regulation 19(7) shall comply with the requirements of this Regulation.

Chapter 3

Control of operational discharge of oil in cargo area of oil tankers

Control of discharge of oil (Part 4)

34. (1) Subject to the provisions of section 11 of the Act and paragraph (2), any discharge into the sea outside special areas of oil or oily mixtures from the cargo area of an oil tanker is prohibited except when all the following conditions are satisfied:

(*a*) the tanker is not within a special area;

(*b*) the tanker is more than 50 nautical miles from the nearest land;

(*c*) the tanker is proceeding en route;

(*d*) the instantaneous rate of discharge of oil content does not exceed 30 litres per nautical mile;

(*e*) the total quantity of oil discharged into the sea does not exceed—

(i) for tankers delivered on or before 31 December 1979, 1/15,000 of the total quantity of the particular cargo of which the residue formed a part, and

(ii) for tankers delivered after 31 December 1979, 1/30,000 of the total quantity of the particular cargo of which the residue formed a part;

(*f*) the tanker has in operation an oil discharge monitoring and control system and a slop tank arrangement as required by Regulations 29 and 31.

(2) Paragraph (1) does not apply to the discharge of clean or segregated ballast.

(3) Subject to paragraph (4), any discharge into the sea in special areas of oil or oily mixture from the cargo area of an oil tanker is prohibited.

(4) Paragraph (3) does not apply to the discharge of clean or segregated ballast.

(5) Nothing in this Regulation prohibits a ship on a voyage, only part of which voyage is in a special area, from discharging outside the special area in accordance with paragraph (1).

(6) The requirements of Regulations 29, 31 and 32 shall not apply to oil tankers of less than 150 tons gross tonnage, for which the control of discharge of oil under this Regulation is effected by the retention of oil on board with subsequent discharge of all contaminated washings to reception facilities. The total quantity of oil and water used for washing and returned to a storage tank shall be discharged to reception facilities unless adequate arrangements are made to ensure that any effluent which is allowed to be discharged into the sea is effectively monitored to ensure that the provisions of this Regulation are complied with.

(7) A discharge into the sea to which this Chapter relates shall not contain chemicals or other substances in quantities or concentrations which are hazardous to the marine environment or chemicals or other substances introduced for the purpose of circumventing the conditions of discharge specified in this Regulation.

(8) The residues of oil or oily mixture which cannot be discharged into the sea in compliance with paragraphs (1) and (3) shall be retained on board or discharged to reception facilities.

Crude oil washing operations

35. (1) Every oil tanker operating with crude oil washing systems shall be provided with an Operations and Equipment Manual detailing the system and equipment and specifying operational procedures. Such a Manual shall be to the satisfaction of the Minister and shall contain all the information set out in the specifications referred to in Regulation 32(2). If an alteration affecting the crude oil washing system is made, the Operations and Equipment Manual shall be revised accordingly.

(2) With respect to the ballasting of cargo tanks, sufficient cargo tanks shall be crude oil washed prior to each ballast voyage in order that, taking into account the tanker's trading pattern and expected weather conditions, ballast water is put only into cargo tanks which have been crude oil washed.

(3) Unless an oil tanker carries crude oil which is not suitable for crude oil washing, the oil tanker shall operate the crude oil washing system in accordance with the Operations and Equipment Manual.

Oil Record Book Part II — Cargo/ballast operations

36. (1) Every oil tanker of 150 gross tonnage and above shall be provided with a book to be known as the Oil Record Book Part II. The Oil Record Book Part II, whether as a part of the ship's official log book or otherwise, shall be in the form specified in Schedule 3.

(2) The Oil Record Book Part II shall be completed on each occasion, on a tank-to-tank basis if appropriate, whenever any of the following operations take place in the ship:

(*a*) loading of oil cargo;

(*b*) internal transfer of oil cargo during voyage;

(*c*) unloading of oil cargo;

(*d*) ballasting of cargo tanks and dedicated clean ballast tanks;

(*e*) cleaning of cargo tanks including crude oil washing;

(*f*) discharge of ballast except from segregated ballast tanks;

(*g*) discharge of water from slop tanks;

(*h*) closing of all applicable valves or similar devices after slop tank discharge operations;

(*i*) closing of valves necessary for isolation of dedicated clean ballast tanks from cargo and stripping lines after slop tank discharge operations;

(*j*) disposal of residues.

(3) For oil tankers referred to in Regulation 34 (6), the total quantity of oil and water used for washing and returned to a storage tank shall be recorded in the Oil Record Book Part II.

(4) In the event of such discharge of oil or oily mixture as is referred to in section 11 of the Act or in the event of accidental or other exceptional discharge of oil not excepted by that Regulation, a statement shall be made in the Oil Record Book Part II of the circumstances of, and the reasons for, the discharge.

(5) Each operation described in paragraph (2) shall be fully recorded without delay in the Oil Record Book Part II so that all entries in the book appropriate to that operation are completed. Each completed operation shall be signed by the officer or officers in charge of the operations concerned and each completed page shall be signed by the master of ship.

(6) Any failure of the oil discharge monitoring and control system shall be noted in the Oil Record Book Part II.

(7) The Oil Record Book shall be kept in such a place as to be readily available for inspection at all reasonable times and, except in the case of unmanned ships under tow, shall be kept on board the ship. It shall be preserved for a period of 3 years after the last entry has been made.

(8) An inspector may inspect the Oil Record Book Part II on board any ship to which these Regulations apply while the ship is in a port or offshore terminal in the State and may make a copy of any entry in that book and may require the master of the ship to certify that the copy is a true copy of such entry. Any copy so made which has been certified by the master of the ship as a true copy of an entry in the ship's Oil Record Book Part II shall be made admissible in any judicial proceedings as evidence of the facts stated in the entry. The inspection of an Oil Record Book Part II and the taking of a certified copy by an inspector under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

(9) For oil tankers of less than 150 gross tonnage operating in accordance with Regulation 34(6), the Oil Record Book Part II should be completed as appropriate to the extent of its operations and to the satisfaction of the Minister.

PART 5

Prevention of pollution arising from an oil pollution incident

Shipboard oil pollution emergency plan

37. (1) Every oil tanker of 150 tons gross tonnage and above and every ship other than an oil tanker of 400 tons gross tonnage and above shall carry on board a shipboard oil pollution emergency plan approved by a qualified person.

(2) Such a plan shall be in accordance with the Guidelines for the development of shipboard oil pollution emergency plans adopted by the Organization by resolution MEPC.54(32) as amended by resolution MEPC.86(44), and written in the English language. The plan shall consist at least of—

(*a*) the procedure to be followed by the master or other persons having charge of the ship to report an oil pollution incident based on the guidelines developed by the Organization by resolution A.851(20),

(*b*) the list of authorities or persons to be contacted in the event of an oil pollution incident,

(*c*) a detailed description of the action to be taken immediately by persons on board to reduce or control the discharge of oil following the incident, and

(*d*) the procedures and point of contact on the ship for co-ordinating shipboard action with national and local authorities in combating the pollution.

(3) Where a shipboard marine pollution emergency plan for noxious liquid substances required under Regulation 15 of the Sea Pollution (Control of Pollution by Noxious Liquid Substances in Bulk) Regulations (S.I. 46 of 1994) and the shipboard oil pollution emergency plan required under these Regulations also applies to the ship, both required plans may be combined, and, if they are combined, shall be called the "Shipboard marine pollution emergency plan".

(4) All oil tankers of 5,000 tons deadweight or more shall have prompt access to computerised, shore-based damage stability and residual structural strength calculation programs.

PART 6

Reception facilities

Reception facilities

38. (1) A harbour authority or person having control of a harbour shall provide at oil loading terminals, repair ports, and in other ports in which ships have oily residues to discharge, facilities for the reception of such residues and oily mixtures as remain from oil tankers and other ships adequate to meet the needs of the ships using them without causing undue delay to ships. In addition, all ports within a special area shall be provided with facilities adequate for the reception and treatment of all the dirty ballast and tank washing water from oil tankers.

(2) The following rules apply to the Antarctic area:

(*a*) ports, where ships depart *en route* to or arrive from the Antarctic area, shall as soon as practicable, provide adequate facilities for the reception of all sludge, dirty ballast, tank washing water, and other oily residues and mixtures from all ships, without causing undue delay, and according to the needs of the ships using them;

(*b*) before entering the Antarctic area, all ships under the Irish flag shall be fitted with a tank or tanks of sufficient capacity on board for the retention of all sludge, dirty ballast, tank washing water and other oily residues and mixtures while operating in the area; arrangements should be in place to discharge such oily residues at a reception facility after leaving the area.

PART 7

Special requirements for fixed or floating platforms

Special requirements for drilling rigs and other platforms

39. (1) This Regulation applies to fixed or floating platforms including drilling rigs, floating production, storage and offloading facilities (FPSOs) used for the offshore production and storage of oil, and floating storage units (FSUs) used for the offshore storage of produced oil.

(2) Fixed or floating platforms, when engaged in the exploration, exploitation and associated offshore processing of sea-bed mineral resources, and other platforms shall comply with the requirements of these Regulations applicable to ships of 400 tons gross tonnage and above other than oil tankers, except that—

(*a*) they shall be equipped as far as practicable with the installations required in Regulations 12 and 14,

(*b*) a record of all operations involving oil or oily mixture discharges originating from platform drainage, shall be kept by the master in a form approved by the Minister,

and

(*c*) subject to the provisions of section 11 of the Act, the discharge into the sea of oil or oily mixture originating from platform drainage, is prohibited except when the oil content of the discharge without dilution does not exceed 15 parts per million.

(3) In verifying compliance with these Regulations in relation to platforms configured as FPSOs or FSUs, in addition to the requirements of paragraph (2), a qualified person will take account of the Guidelines developed by the Organization.

PART 8

Revocations

Revocations

40. The following are revoked:

(*a*) Sea Pollution (Prevention of Oil Pollution) Regulations 1994 (S.I. No. 44 of 1994);

(*b*) Sea Pollution (Prevention of Oil Pollution) (Amendment) Regulations 1997 (S. I. No. 514 of 1997);

(*c*) Sea Pollution (Prevention of Oil Pollution) (Amendment) Regulations 2002 (S. I. No. 642 of 2002);

(*d*) Sea Pollution (Prevention of Oil Pollution) (Amendment) Regulations 2003 (S. I. No. 191 of 2003).

Regulation 2.

SCHEDULE 1

List of Oils

Asphalt solutions
Blending Stocks
Roofers Flux
Straight Run Residue

Oils
Clarified
Crude Oil
Mixtures containing crude oil
Diesel Oil
Fuel Oil
Fuel Oil
Fuel Oil
Residual Fuel Oil
Road Oil
Transformer Oil
Aromatic Oil (excluding vegetable oil)
Lubricating Oils and Blending Stocks
Mineral Oil
Motor Oil
Penetrating Oil
Spindle Oil
Turbine Oil

Distillates
Straight Run
Flashed Feed Stocks

Gas Oil
Cracked

Gasoline Blending Stocks
Alkylates — fuel
Reformates
Polymer — fuel

Gasolines
Casinghead (natural)
Automotive
Aviation
Straight Run
No. 4 Fuel Oil No. 1 (Kerosene)
No. 5 Fuel Oil No. 1-D
No. 6 Fuel Oil No. 2
Fuel Oil No. 2-D

Jet Fuels
JP-1 (Kerosene)
JP-3
JP-4
JP-5 (Kerosene, Heavy)
Turbo Fuel
Kerosene
Mineral Spirit

Naphtha
Solvent
Petroleum
Heartcut Distillage Oil

SCHEDULE 2

Regulation 9.

Form of Certificate

INTERNATIONAL OIL POLLUTION PREVENTION CERTIFICATE

(Note: This Certificate shall be supplemented by a Record of Construction and Equipment)

Issued under the provisions of the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto, and as amended by resolution MEPC.39(29), (hereinafter referred to as the "Convention") under the authority of the Government of Ireland by the Minister for Transport.

Particulars of ship[1]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

Gross tonnage .....

Deadweight of ship (metric tons)[2].....

IMO Number[3].....

Type of ship[4]:

Oil tanker

Ship other than an oil tanker with cargo tanks coming under regulation 2.2 of Annex I of the Convention.

Ship other than any of the above.

THIS IS TO CERTIFY:

1. That the ship has been surveyed in accordance with regulation 6 of Annex I of the Convention.

2. That the survey shows that the structure, equipment, systems, fittings, arrangements and material of the ship and the condition thereof are in all respects satisfactory and that the ship complies with the applicable requirements of Annex I of the Convention.

[1]Alternatively, the particulars of the ship may be placed horizontally in boxes.
[2]For oil tankers.
[3]Refer to the IMO Ship Identification Number Scheme adopted by the Organization by resolution A.600(15).
[4]Delete as appropriate.

This Certificate is valid until (dd/mm/yyyy)[5]

..... subject to surveys in accordance with regulation 6 of Annex I of the Convention.

Completion date of the survey on which this certificate is based

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

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

(dd/mm/yyyy) ....
(Date of Issue) (Signature of duly authorised official issuing the Certificate)

(Seal or stamp of the authority, as appropriate)

[5]Insert date of expiry as specified in accordance with regulation 10.1 of Annex I of the Convention. The day and month of this date correspond to the anniversary date as defined in regulation 1.27 of Annex I of the Convention, unless amended in accordance with regulation 10.8 of Annex I of the Convention.

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that, at a survey required by regulation 6 of Annex I of the Convention, the ship was found to comply with the relevant provisions of the Convention:

Annual survey:

Signed .....

(Signature of duly authorised official)

Place .....

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

(Seal or stamp of the authority, as appropriate)

Annual/ Intermediate* survey:

Signed .....

(Signature of duly authorised official)

Place .....

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

(Seal or stamp of the authority, as appropriate)

Annual/ Intermediate* survey:

Signed .....

(Signature of duly authorised official)

Place .....

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

(Seal or stamp of the authority, as appropriate)

Annual survey:

Signed .....

(Signature of duly authorised official)

Place .....

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

(Seal or stamp of the authority, as appropriate)

*Delete as appropriate.

ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH REGULATION 10.8.3

THIS IS TO CERTIFY that, at an annual/intermediate* survey in accordance with regulation 10.8.3 of Annex I of the Convention, the ship was found to comply with the relevant provisions of the Convention.

Signed.....
(Signature of duly authorised 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 REGULATION 10.3 APPLIES

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 10.3 of Annex I of the Convention, be accepted as valid until (dd/mm/yyyy) .....

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

Place.....

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

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND REGULATION 10.4 APPLIES

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation 10.4 of Annex I of the Convention, be accepted as valid until (dd/mm/yyyy) .....

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

Place.....

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

(Seal or stamp of the authority, as appropriate)

*Delete as appropriate

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION 10.5 OR 10.6 APPLIES

This Certificate shall, in accordance with regulation 10.5 or 10.6* of Annex I of the Convention, be accepted as valid until (dd/mm/yyyy) .....

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

Place.....

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

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE WHERE REGULATION 10.8 APPLIES

In accordance with regulation 10.8 of Annex I of the Convention, the new anniversary date is (dd/mm/yyyy) .....

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

Place.....

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

(Seal or stamp of the authority, as appropriate)

In accordance with regulation 10.8 of Annex I of the Convention, the new anniversary date is (dd/mm/yyyy) .....

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

Place.....

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

(Seal or stamp of the authority, as appropriate)

*Delete as appropriate

Form A

Supplement to the International Oil Pollution Prevention Certificate (IOPP Certificate)

RECORD OF CONSTRUCTION AND EQUIPMENT FOR SHIPS OTHER THAN OIL TANKERS

in respect of the provisions of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as the "Convention").

Notes:

1. This form is to be used for the third types of ships as categorised in the IOPP Certificate, i.e. "ships other than any of the above". For oil tankers and ships other than oil tankers with cargo tanks coming under regulation 2.2 of Annex I of the Convention, Form B shall be used.

2. This Record shall be permanently attached to the IOPP Certificate. The IOPP Certificate shall be available on board the ship at all times.

3. If the language of the original Record is neither English nor French nor Spanish, the text shall include a translation into one of these languages.

4. Entries in boxes shall be made by inserting either a cross (x) for the answers "yes" and "applicable" or a dash (—) for the answers "no" and "not applicable" as appropriate.

5. Regulations mentioned in this Record refer to regulations of Annex I of the Convention and resolutions refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship .....

1.2 Distinctive number or letters .....

1.3 Port of registry .....

1.4 Gross tonnage .....

1.5 Date of build .....

1.5.1 Date of building contract .....

1.5.2 Date on which keel was laid or ship was at a similar stage of construction .....

1.5.3 Date of delivery .....

1.6 Major conversion (if applicable) .....

1.6.1 Date of conversion contract .....

1.6.2 Date on which conversion was commenced .....

1.6.3 Date of completion of conversion .....

1.7 The ship has been accepted by the Administration as a "ship delivered on or before 31 December 1979" under regulation 1.28.1 due to unforeseen delay in delivery ❒

2 Equipment for the control of oil discharge from machinery space bilges and oil fuel tanks (regulations 16 and 14)

2.1 Carriage of ballast water in oil fuel tanks:

2.1.1 The ship may under normal conditions carry ballast water in oil fuel tanks. ❒

2.2 Type of oil filtering equipment fitted:

2.2.1 Oil filtering (15 ppm) equipment (regulation 14.6) ❒

2.2.2 Oil filtering (15 ppm) equipment with alarm and automatic stopping device (regulation 14.7) ❒

2.3 Approval standards[1]

2.3.1 The separating/filtering equipment:

.1 has been approved in accordance with resolution A.393(X); ❒

.2 has been approved in accordance with resolution MEPC.60(33); ❒

.3 has been approved in accordance with resolution MEPC.107(49); ❒

.4 has been approved in accordance with resolution A.233(VII); ❒

.5 has been approved in accordance with national standards not based upon resolution A.393(X) or A.233(VII); ❒

.6 has not been approved. ❒

2.3.2 The process unit has been approved in accordance with resolution A.444(XI). ❒

2.3.3 The oil content meter:

.1 has been approved in accordance with resolution A.393(X); ❒

.2 has been approved in accordance with resolution MEPC.60(33). ❒

[1]Refer to the Recommendation on international performance and test specifications of oily-water separating equipment and oil content meters adopted by the Organization on 14 November 1977 by resolution A.393(X), which superseded resolution A.233(VII). Further reference is made to the Guidelines and specifications for pollution prevention equipment for machinery space bilges adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.60(33), which, effective on 6 July 1993, superseded resolutions A.393(X) and A.444(XI) (see IMO sales publication IMO-646E); and to the revised Guidelines and specifications for pollution prevention equipment for machinery spaces of ships adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.107(49) which, effective on 1 January 2005, superseded resolutions MEPC.60(33), A.393(X) and A.444(XI).

.3 has been approved in accordance with resolution MEPC.107(49). ❒

2.4 Maximum throughput of the system is ..... m^3/h.

2.5 Waiver of regulation 14:

2.5.1 The requirements of regulation 14.1 or 14.2 are waived in respect of the ship in accordance with regulation 14.5.

2.5.1.1 The ship is engaged exclusively on voyages within special area(s): ❒

2.5.1.2 The ship is certified under the International Code of Safety for High-Speed Craft and engaged on a scheduled service with a turn-around time not exceeding 24 hours ❒

2.5.2 The ship is fitted with holding tank(s) for the total retention on board of all oily bilge water as follows: ❒

Tank identification	Tank location		Volume (m^3)
	Frames (from)-(to)	Lateral position	
		Total volume ..... (m^3)	

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 ❒

3. Means for retention and disposal of oil residues (sludge) (regulation 12) and bilge water holding tank(s)[2]

3.1 The ship is provided with oil residue (sludge) tanks as follows:

Tank identification	Tank location		Volume (m^3)
	Frames (from)-(to)	Lateral position	
		Total volume ..... (m^3)	

3.2 Means for the disposal of residues in addition to the provision of sludge tanks:

[2]Bilge water holding tank(s) are not required by the Convention, entries in the table under paragraph 3.3 are voluntary.

3.2.1 Incinerator for oil residues, capacity..... l/h ❒

3.2.2 Auxiliary boiler suitable for burning oil residues ❒

3.2.3 Tank for mixing oil residues with fuel oil, capacity..... m^3 ❒

3.2.4 Other acceptable means: ..... ❒

3.3 The ship is provided with holding tank(s) for the retention on board of oily bilge water as follows:

Tank identification	Tank location		Volume (m^3)
	Frames (from)-(to)	Lateral position	
		Total volume ..... (m^3)	

4 Standard discharge connection (regulation 13)

4.1 The ship is provided with a pipeline for the discharge of residues from machinery bilges and sludges to reception facilities, fitted with a standard discharge connection in accordance with regulation 13 ❒

5 Shipboard oil pollution emergency plan (regulation 37)

5.1 The ship is provided with a shipboard oil pollution emergency plan in compliance with regulation 37 ❒

5.2 The ship is provided with a shipboard marine pollution emergency plan in compliance with regulation 37.3 ❒

6 Exemption

6.1 Exemptions have been granted by the Administration from the requirements of Chapter 3 of Annex I of the Convention in accordance with regulation 3.1 on those items listed under paragraph(s) .....
.....
of this Record ❒

7 Equivalents (regulation 5)

7.1 Equivalents have been approved by the Administration for certain requirements of Annex I on those items listed under paragraph(s) .....
.....
of this Record ❒

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at .....
(place of issue of the Record)

..... 20 .....
(Signature of duly authorised official issuing the Record)

(Official Stamp)

Form B

Supplement to the International Oil Pollution Prevention Certificate (IOPP Certificate)

RECORD OF CONSTRUCTION AND EQUIPMENT FOR OIL TANKERS

in respect of the provisions of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as the "Convention").

Notes:

1. This form is to be used for the first two types of ships as categorised in the IOPP Certificate, i.e. "oil tankers" and "ships other than oil tankers with cargo tanks coming under regulation 2.2 of Annex I of the Convention". For the third type of ships as categorised in the IOPP Certificate, Form A shall be used.

2. This Record shall be permanently attached to the IOPP Certificate. The IOPP Certificate shall be available on board the ship at all times.

3. If the language of the original Record is neither English nor French nor Spanish, the text shall include a translation into one of these languages.

4. Entries in boxes shall be made by inserting either a cross (x) for the answers "yes" and "applicable" or a dash (—) for the answers "no" and "not applicable" as appropriate.

5. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex I of the Convention and resolutions refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship .....

1.2 Distinctive number or letters .....

1.3 Port of registry .....

1.4 Gross tonnage .....

1.5 Carrying capacity of ship ..... (m^3)

1.6 Deadweight of ship ..... (tonnes) (regulation 1.23)

1.7 Length of ship ..... (m) (regulation 1.19)

1.8 Date of build:

1.8.1 Date of building contract .....

1.8.2 Date on which keel was laid or ship was at a similar stage of construction .....

1.8.3 Date of delivery .....

1.9 Major conversion (if applicable):

1.9.1 Date of conversion contract .....

1.9.2 Date on which conversion was commenced .....

1.9.3 Date of completion of conversion .....

1.10 Unforeseen delay in delivery:

1.10.1 The ship has been accepted by the Administration as a "ship delivered on or before 31 December 1979" under regulation 1.28.1 due to unforeseen delay in delivery ❒

1.10.2 The ship has been accepted by the Administration as an "oil tanker delivered on or before 1 June 1982" under regulation 1.28.3 due to unforeseen delay in delivery ❒

1.10.3 The ship is not required to comply with the provisions of regulation 26 due to unforeseen delay in delivery ❒

1.11 Type of ship:

1.11.1 Crude oil tanker ❒

1.11.2. Product carrier ❒

1.11.3 Product carrier not carrying fuel oil or heavy diesel oil as referred to inregulation 20.2, or lubricating oil ❒

1.11.4 Crude oil/product carrier ❒

1.11.5 Combination carrier ❒

1.11.6 Ship, other than an oil tanker, with cargo tanks coming under regulation 2.2 of Annex I of the Convention ❒

1.11.7 Oil tanker dedicated to the carriage of products referred to in regulation 2.4 ❒

1.11.8 The ship, being designated as a "crude oil tanker" operating with COW, is also designated as a "product carrier" operating with CBT, for which a separate IOPP Certificate has also been issued ❒

1.11.9 The ship, being designated as a "product carrier" operating with CBT, is also designated as a "crude oil tanker" operating with COW, for which a separate IOPP Certificate has also been issued ❒

2 Equipment for the control of oil discharge from machinery space bilges and oil fuel tanks (regulations 16 and 14)

2.1 Carriage of ballast water in oil fuel tanks:

2.1.1 The ship may under normal conditions carry ballast water in oil fuel tanks ❒

2.2 Type of oil filtering equipment fitted:

2.2.1 Oil filtering (15 ppm) equipment (regulation 14.6) ❒

2.2.2 Oil filtering (15 ppm) equipment with alarm and automatic stopping device (regulation 14.7) ❒

2.3 Approval Standards[1]

2.3.1 The separating/filtering equipment:

.1 has been approved in accordance with resolution A.393(X); ❒

.2 has been approved in accordance with resolution MEPC.60(33); ❒

.3 has been approved in accordance with resolution MEPC.107(49); ❒

.4 has been approved in accordance with resolution A.233(VII); ❒

.5 has been approved in accordance with national standards not based upon resolution A.393(X) or A.233(VII); ❒

.6 has not been approved. ❒

2.3.2 The process unit has been approved in accordance with resolution A.444(XI).

2.3.3 The oil content meter:

.1 has been approved in accordance with resolution A. 393(X); ❒

.2 has been approved in accordance with resolution MEPC.60(33); ❒

.3 has been approved in accordance with resolution MEPC.107(49). ❒

2.4 Maximum throughput of the system is ..... m^3/h.

2.5 Waiver of regulation 14:

2.5.1 The requirements of regulation 14.1 or 14.2 are waived in respect of the ship in accordance with regulation 14.5. ❒

[1]Refer to the Recommendation on international performance and test specifications of oily-water separating equipment and oil content meters adopted by the Organization on 14 November 1977 by resolution A.393(X), which superseded resolution A.233(VII); Further reference is made to the Guidelines and specifications for pollution prevention equipment for machinery space bilges adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.60(33), which, effective on 6 July 1993, superseded resolutions A.393(X) and A.444(XI)(see IMO sales publication IMO-646E); and to the revised Guidelines and specifications for pollution prevention equipment for machinery spaces of ships adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.107(49) which, effective on 1 January 2005, superseded resolutions MEPC.60(33), A.393(X) and A.444(XI).

The ship is engaged exclusively on voyages within special area(s): ..... ❒

2.5.2 The ship is fitted with holding tank(s) for the total retention on board of all oily bilge water as follows:

Tank identification	Tank location		Volume (m^3)
	Frames (from)-(to)	Lateral position	
		Total volume ..... (m^3)	

2.5.3 In lieu of the holding tank(s) the ship is provided with arrangements to transfer bilge water to the slop tank ❒

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 ❒

3. Means for retention and disposal of oil residues (sludge) (regulation 12) and bilge water holding tank(*s*)[2]

3.1 The ship is provided with oil residue (sludge) tanks as follows:

Tank identification	Tank location		Volume (m^3)
	Frames (from)-(to)	Lateral position	
		Total volume ..... (m^3)	

3.2 Means for the disposal of residues in addition to the provision of sludge tanks:

3.2.1 Incinerator for oil residues, capacity .....l/h ❒

3.2.2 Auxiliary boiler suitable for burning oil residues ❒

3.2.3 Tank for mixing oil residues with fuel oil, capacity ..... m^3 ❒

3.2.4 Other acceptable means: ..... ❒

3.3 The ship is fitted with holding tank(s) for the retention on board of oily

[2]Bilge water holding tank(s) are not required by the Convention, entries in the table under paragraph 3.3 are voluntary.

bilge water as follows:

Tank identification	Tank location		Volume (m^3)
	Frames (from)-(to)	Lateral position	
		Total volume ..... (m^3)	

4 Standard discharge connection (regulation 13)

4.1 The ship is provided with a pipeline for the discharge of residues from machinery bilges and sludges to reception facilities, fitted with a standard discharge connection in compliance with regulation 13 ❒

5 Construction (regulations 18, 19, 20, 23, 26, 27 and 28)

5.1 In accordance with the requirements of regulation 18, the ship is:

5.1.1 Required to be provided with SBT, PL and COW ❒

5.1.2 Required to be provided with SBT and PL ❒

5.1.3 Required to be provided with SBT ❒

5.1.4 Required to be provided with SBT or COW ❒

5.1.5 Required to be provided with SBT or CBT ❒

5.1.6 Not required to comply with the requirements of regulation 18 ❒

5.2 Segregated ballast tanks (SBT):

5.2.1 The ship is provided with SBT in compliance with regulation 18 ❒

5.2.2 The ship is provided with SBT, in compliance with regulation 18, which are arranged in protective locations (PL) in compliance with regulations 18.12 to 18.15 ❒

5.2.3 SBT are distributed as follows:

Tank	Volume (m^3)	Tank	Volume (m^3)
		Total volume..... (m^3)	

5.3 Dedicated clean ballast tanks (CBT):

5.3.1 The ship is provided with CBT in compliance with regulation 18.8, and may operate as a product carrier ❒

5.3.2 CBT are distributed as follows:

Tank	Volume (m^3)	Tank	Volume (m^3)
		Total volume..... (m^3)	

5.3.3 The ship has been supplied with a valid Dedicated Clean Ballast Tank Operation Manual, which is dated ..... ❒

5.3.4 The ship has common piping and pumping arrangements for ballasting the CBT and handling cargo oil ❒

5.3.5 The ship has separate independent piping and pumping arrangements for ballasting the CBT ❒

5.4 Crude oil washing (COW):

5.4.1 The ship is equipped with a COW system in compliance with regulation 33 ❒

5.4.2 The ship is equipped with a COW system in compliance with regulation 33 except that the effectiveness of the system has not been confirmed in accordance with regulation 33.1 and paragraph 4.2.10 of the Revised COW Specifications (resolution A.446 (XI) as amended by resolutions A.497(XII) and A.897(21)) ❒

5.4.3 The ship has been supplied with a valid Crude Oil Washing Operations and Equipment Manual, which is dated ..... ❒

5.4.4 The ship is not required to be but is equipped with COW in compliance with the safety aspects of the Revised COW Specifications (resolution A.446 (XI) as amended by resolutions A.446 (XI) as amended by resolutions A.497(XII) and A.897(21)) ❒

5.5 Exemption from regulation 18:

5.5.1 The ship is solely engaged in trade between .....
.....
in accordance with regulation 2.5 and is, therefore, exempted from the requirements of regulation 18. ❒

5.5.2 The ship is operating with special ballast arrangements in accordance with regulation 18.10 and is therefore exempted from the requirements of regulation 18 ❒

5.6 Limitation of size and arrangements of cargo tanks (regulation 26):

5.6.1 The ship is required to be constructed according to, and complies with, the requirements of regulation 26 ❒

5.6.2 The ship is required to be constructed according to, and complies with, the requirements of regulation 26.4 (see regulation 2.2) ❒

5.7 Subdivision and stability (regulation 28):

5.7.1 The ship is required to be constructed according to, and complies with, the requirements of regulation 28 ❒

5.7.2 Information and data required under regulation 28.5 have been supplied to the ship in an approved form ❒

5.7.3 The ship is required to be constructed according to, and complies with the requirements of, regulation 27 ❒

5.7.4 Information and data required under regulation 27 for combination carriers have been supplied to the ship in a written procedure approved by the Administration ❒

5.8 Double hull construction:

5.8.1 The ship is required to be constructed according to regulation 19 and complies with the requirements of:

.1 paragraph (3) (double-hull construction) ❒

.2 paragraph (4) (mid-height deck tankers with double side construction) ❒

.3 paragraph (5) (alternative method approved by the Marine Environment Protection Committee) ❒

5.8.2 The ship is required to be constructed according to and complies with the requirements of regulation 19.6 (double bottom requirements) ❒

5.8.3 The ship is not required to comply with the requirements of regulation 19 ❒

5.8.4 The ship is subject to regulation 20 and:

.1 is required to comply with paragraphs 2 to 5, 7 and 8 of regulation 19 and regulation 28 in respect of paragraph 28.6 not later than ..... ❒

.2 is allowed to continue operation in accordance with regulation 20.5 until ..... ❒

.3 is allowed to continue operation in accordance with regulation 20.7 until ..... ❒

5.8.5 The ship is not subject to regulation 20

5.8.6 The ship is subject to regulation 21 and:

.1 is required to comply with regulation 21.4 not later than ..... ❒

.2 is allowed to continue operation in accordance with regulation 21.5 until ..... ❒

.3 is allowed to continue operation in accordance with regulation 21.6.1 until ..... ❒

.4 is allowed to continue operation in accordance with regulation 21.6.2 until ..... ❒

.5 is exempted from the provisions of regulation 21 in accordance with regulation 21.7.2. ❒

5.8.7 The ship is not subject to regulation 21

5.8.8 The ship is subject to regulation 22 and:

.1 complies with the requirements of regulation 22.2 ..... ❒

.2 complies with the requirements of regulation 22.3 ..... ❒

.3 complies with the requirements of regulation 22.5 ..... ❒

5.8.9 The ship is not subject to regulation 22 ..... ❒

5.9 Accidental oil outflow performance

5.9.1 The ship complies with the requirements of regulation 23 ❒

6 Retention of oil on board (regulations 29, 31 and 32).

6.1 Oil discharge monitoring and control system:

6.1.1 The ship comes under category ..... oil tanker as defined in resolution A.496(XII) or A.586(14)[3] *(delete as appropriate)* ❒

6.1.2 The oil discharge monitoring and control system has been approved in accordance with resolution MEPC.108(49)[4]

6.1.3 The system comprises:

.1 control unit ❒

.2 computing unit ❒

.3 calculating unit ❒

6.1.4 The system is:

[3] Oil tankers the keels of which are laid, or which are at a similar stage of construction, on or after 2 October 1986 should be fitted with a system approved under resolution A.586(14).
[4]Oil tankers the keels of which are laid, or which are at a similar stage of construction, on or after 1 January 2005 should be fitted with a system approved under resolution MEPC.108(49).

.1 fitted with a starting interlock ❒

.2 fitted with automatic stopping device ❒

6.1.5 The oil content meter is approved under the terms of resolution A.393(X) or A.586(14) or MEPC.108(49)[5] *(delete as appropriate)* suitable for:

.1 crude oil ❒

.2 black products ❒

.3 white products ❒

.4 oil-like noxious liquid substances as listed in the attachment to the certificate ❒

6.1.6 The ship has been supplied with an operations manual for the oil discharge monitoring and control system

6.2 Slop tanks:

6.2.1 The ship is provided with..... dedicated slop tank(s) with the total capacity of..... m^3, which is..... per cent of the oil carrying capacity, in accordance with:

.1 regulation 29.2.3 ❒

.2 regulation 29.2.3.1 ❒

.3 regulation 29.2.3.2 ❒

.4 regulation 29.2.3.3 ❒

6.2.2 Cargo tanks have been designated as slop tanks ❒

6.3 Oil/water interface detectors:

6.3.1 The ship is provided with oil/water interface detectors approved under the terms of resolution MEPC. 5(XIII)[6] ❒

[5]For oil content meters installed on tankers built prior to 2 October 1986, refer to the Recommendation on international performance and test specifications for oily-water separating equipment and oil content meters adopted by the Organization by resolution A.393(X). For oil content meters as part of discharge monitoring and control systems installed on tankers built on or after 2 October 1986, refer to the Guidelines and specifications for oil discharge monitoring and control systems for oil tankers adopted by the Organization by resolution A.586(14); see IMO sales publication IMO-646E. For oil content meters as part of discharge monitoring and control systems installed on tankers the keel of which are laid or are in a similar stage of construction on or after 1 January 2005, refer to the revised Guidelines and specifications for oil discharge monitoring and control systems for oil tankers adopted by the Organization by resolution MEPC.108(49).

[6]Refer to the Specification for oil/water interface detectors adopted by the Marine Environment Protection Committee of the Organization by resolution MEPC.5(XIII); see IMO sales publication IMO-646E.

6.4 Exemptions from regulations 29, 31 and 32:

6.4.1 The ship is exempted from the requirements of regulations 29, 31 and 32 in accordance with regulation 2.4 ❒

6.4.2 The ship is exempted from the requirements of regulation 29, 31 and 32 in accordance with regulation 2.2 ❒

6.5 Waiver of regulations 31 and 32:

6.5.1 The requirements of regulations 31 and 32 are waived in respect of the ship in accordance with regulation 3.5. The ship is engaged exclusively on:

.1 specific trade under regulation 2.5: .....

..... ❒

.2 voyages within special area(s) .....

..... ❒

.3 voyages within 50 miles of the nearest land outside special area(s) of 72 hours or less in duration restricted to: .....

..... ❒

7 Pumping, piping and discharge arrangements (regulation 30)

7.1 The overboard discharge outlets for segregated ballast are located:

7.1.1 Above the waterline ❒

7.1.2 Below the waterline ❒

7.2 The overboard discharge outlets, other than the discharge manifold, for clean ballast are located[7]:

7.2.1 Above the waterline ❒

7.2.2 Below the waterline ❒

7.3 The overboard discharge outlets, other than the discharge manifold, for dirty ballast water or oil-contaminated water from cargo tank areas are located:

7.3.1 Above the waterline ❒

7.3.2 Below the waterline in conjunction with the part flow arrangements in compliance with regulation 30.6.5 ❒

[7]Only those outlets which can be monitored are to be indicated.

7.3.3 Below the waterline ❒

7.4 Discharge of oil from cargo pumps and oil lines (regulation 30.4 and 30.5):

7.4.1 Means to drain all cargo pumps and oil lines at the completion of cargo discharge:

.1 drainings capable of being discharged to a cargo tank or slop tank ❒

.2 for discharge ashore a special small-diameter line is provided ❒

8 Shipboard oil/marine pollution emergency plan (regulation 37)

8.1 The ship is provided with a shipboard oil pollution emergency plan in compliance with regulation 37. ❒

8.2 The ship is provided with a shipboard marine pollution emergency plan in compliance with regulation 37.3 ❒

9. Exemption

9.1 Exemptions have been granted by the Administration from the requirements of chapter 3 of Annex I of the Convention in accordance with regulation 3.1 on those items listed under paragraph(s) .....

.....

..... of this Record ❒

10 Equivalents (regulation 5)

10.1 Equivalents have been approved by the Administration for certain requirements of Annex I on those items listed under paragraph(s) .....

..... of this Record ❒

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at .....
(Place of issue of the Record)

..... 20 .....

(Signature of duly authorised official issuing the Record)

(Seal or stamp of the issuing authority, as appropriate)

SCHEDULE 3

Regulations 2, 18 and 36.

Form of Oil Record Book

OIL RECORD BOOK

PART I

Machinery space operations

(All ships)

Name of ship .....

Distinctive number or letters .....

Gross tonnage .....

Period from..... to .....

Note: Oil Record Book Part I shall be provided to every oil tanker of 150 gross tonnage and above and every ship of 400 gross tonnage and above, other than oil tankers, to record relevant machinery space operations. For oil tankers, Oil Record Book Part II shall also be provided to record relevant cargo/ballast operations.

INTRODUCTION

The following pages of this section show a comprehensive list of items of machinery space operations which are, when appropriate, to be recorded in the Oil Record Book Part I in accordance with regulation 17 of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). The items have been grouped into operational sections, each of which is denoted by a letter code.

When making entries in the Oil Record Book, the date, operational code and item number shall be inserted in the appropriate columns and the required particulars shall be recorded chronologically in the blank spaces.

Each completed operation shall be signed for and dated by the officer or officers in charge. Each completed page shall be signed by the master of the ship.

The Oil Record Book Part I contains many references to oil quantity. The limited accuracy of tank measurement devices, temperature variations and clingage will affect the accuracy of these readings. The entries in the Oil Record Book Part I should be considered accordingly.

In the event of accidental or other exceptional discharge of oil, a statement shall be made in the Oil Record Book Part I of the circumstances of, and the reasons for, the discharge.

Any failure of the oil filtering equipment shall be noted in the Oil Record Book Part I.

The Oil Record Book Part I shall be kept in such a place as to be readily available for inspection at all reasonable times and, except in the case of unmanned ships under tow, shall be kept on board the ship. It shall be preserved for a period of three years after the last entry has been made.

The competent authority of the Government of a Party to the Convention may inspect the Oil Record Book Part I on board any ship to which this Annex applies while the ship is in its port or offshore terminals and may make a copy of any entry in that book and may require the master of the ship to certify that the copy is a true copy of such entry. Any copy so made which has been certified by the master of the ship as a true copy of an entry in the Oil Record Book Part I shall be made admissible in any juridical proceedings as evidence of the facts stated in the entry. The inspection of an Oil Record Book Part I and the taking of a certified copy by the competent authority under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

LIST OF ITEMS TO BE RECORDED

(A) Ballasting or cleaning of oil fuel tanks

1. Identity of tank(s) ballasted.

2. Whether cleaned since they last contained oil and, if not, type of oil previously carried.

3. Cleaning process:

   .1 position of ship and time at the start and completion of cleaning;

   .2 identify tank(s) in which one or another method has been employed (rinsing through, steaming, cleaning with[3]); chemicals; type and quantity of chemicals used, in m^3);

   .3 identity of tank(s) into which cleaning water was transferred.

4. Ballasting:

   .1 position of ship and time at start and end of ballasting;

   .2 quantity of ballast if tanks are not cleaned, in m^3.

(B) Discharge of dirty ballast or cleaning water from oil fuel tanks referred to under section (A)

5. Identity of tank(s).

6. Position of ship at start of discharge.

7. Position of ship on completion of discharge.

8. Ship's speed(s) during discharge.

9. Method of discharge:

   .1 through 15 ppm equipment;

   .2 to reception facilities.

10. Quantity discharged, in m^3.

(C) Collection and disposal of oil residues (sludge and other oil residues)

11. Collection of oil residues.

    Quantities of oil residues (sludge and other oil residues) retained on board. The quantity should be recorded weekly[1]: (This means that the

[1]Tanks listed in item 3.1 of form A and B of the supplement in the IOPP Certificate used for sludge.

quantity must be recorded once a week even if the voyage lasts more than one week).

—identity of tank(s) .....

—capacity of tank(s) ..... m^3

—total quantity of retention ..... m^3;

12. Methods of disposal of residue.

State quantity of oil residues disposed of, the tank(s) emptied and the quantity of contents retained, in m^3:

.1 to reception facilities (identify port)[2];

.2 transferred to another (other) tank(s)(indicate tank(s) and the total content of tank(s));

.3 incinerated (indicate total time of operation);

.4 other method (state which).

(D) Non-automatic discharge overboard or disposal otherwise of bilge water which has accumulated in machinery spaces

13. Quantity discharged or disposed of, in cubic metres[3].

14. Time of discharge or disposal (start and stop).

15. Method of discharge or disposal:

.1 through 15 ppm equipment (state position at start and end);

.2 to reception facilities (identify port)[2];

.3 transfer to slop tank or holding tank (indicate tank(s); state quantity transferred and the total quantity retained in tank(s), in m^3).

(E) Automatic discharge overboard or disposal otherwise of bilge water which has accumulated in machinery spaces

16. Time and position of ship at which the system has been put into automatic mode of operation for discharge overboard, through 15 ppm equipment.

[2]Ship's masters should obtain from the operator of the reception facilities, which includes barges and tank trunks, a receipt or certificate detailing the quantity of tank washings, dirty ballast, residues or oily mixtures transferred, together with the time and date of the transfer. This receipt or certificate, if attached to the Oil Record Book Part I, may aid the master of the ship in proving that his ship was not involved in an alleged pollution incident. The receipt or certificate should be kept together with the Oil Record Book Part I.

[3]In case of discharge or disposal of bilge water from holding tank(s), state identity and capacity of holding tank(s) and quantity retained in holding tank.

17. Time when the system has been put into automatic mode of operation for transfer of bilge water to holding tank (identify tank).

18. Time when the system has been put into manual operation.

(F) Condition of the oil filtering equipment

19. Time of system failure[4].

20. Time when system has been made operational.

21. Reasons for failure.

(G) Accidental or other exceptional discharges of oil

22. Time of occurrence.

23. Place or position of ship at time of occurrence.

24. Approximate quantity and type of oil.

25. Circumstances of discharge or escape, the reasons therefore and general remarks.

(H) Bunkering of fuel or bulk lubricating oil

26. Bunkering:

.1 Place of bunkering.

.2 Time of bunkering.

.3 Type and quantity of fuel oil and identity of tank(s) (state quantity added, in tonnes, and total content of tank(s)).

.4 Type and quantity of lubricating oil and identity of tank(s) (state quantity added, in tonnes, and total content of tank(s)).

(I) Additional operational procedures and general remarks

Name of ship .....

Distinctive number or letters .....

[4]The condition of the oil filtering equipment covers also the alarm and automatic stopping devices, if applicable.

MACHINERY SPACE OPERATIONS

Date	Code (letter)	Item (number)	Record of operations/signature of officer in charge

Signature of master .....

OIL RECORD BOOK

PART II

CARGO/BALLAST OPERATIONS

(Oil tankers)

Name of ship .....

Distinctive number or letters .....

Gross tonnage .....

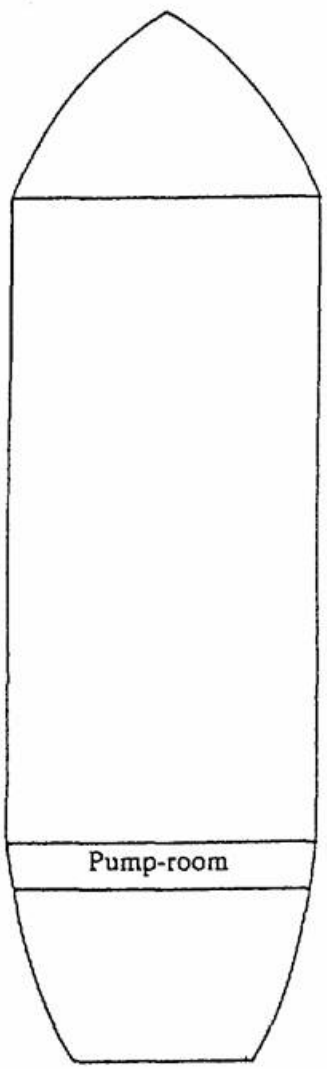
Period from..... to .....

Note: Every oil tanker of 150 gross tonnage and above shall be provided with Oil Record Book Part II to record relevant cargo/ballast operations. Such a tanker shall also be provided with Oil Record Book Part I to record relevant machinery space operations.

Name of ship .....

Distinctive number or letters .....

PLAN VIEW OF CARGO AND SLOP TANKS
(to be completed on board)



Identification of the tanks	Capacity
Depth of slop tank(s):	

(Give the capacity of each tank and the depth of slop tank(s))

INTRODUCTION

The following pages of this section show a comprehensive list of items of cargo and ballast operations which are, when appropriate, to be recorded in the Oil Record Book Part II in accordance with regulation 36 of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). The items have been grouped into operational sections, each of which is denoted by a letter code.

When making entries in the Oil Record Book, the date, operational code and item number shall be inserted in the appropriate columns and the required particulars shall be recorded chronologically in the blank spaces.

Each completed operation shall be signed for and dated by the officer or officers in charge. Each completed page shall be countersigned by the master of the ship.

In respect of the oil tankers engaged in specific trades in accordance with regulation 2.5 of Annex I of MARPOL 73/78, appropriate entry in the Oil Record Book Part II shall be endorsed by the competent port State authority.[1]

The Oil Record Book Part II contains many references to oil quantity. The limited accuracy of tank measurement devices, temperature variations and clingage will affect the accuracy of these readings. The entries in the Oil Record Book Part II should be considered accordingly.

In the event of accidental or other exceptional discharge of oil, a statement shall be made in the Oil Record Book Part II of the circumstances of, and the reasons for, the discharge.

Any failure of the oil discharge monitoring and control system shall be noted in the Oil Record Book Part II.

The Oil Record Book Part II shall be kept in such a place as to be readily available for inspection at all reasonable times and, except in the case of unmanned ships under tow, shall be kept on board the ship. It shall be preserved for a period of three years after the last entry has been made.

The competent authority of the Government of a Party to the Convention may inspect the Oil Record Book Part II on board any ship to which this Annex applies while the ship is in its port or offshore terminals and may make a copy of any entry in that book and may require the master of the ship to certify that the copy is a true copy of such entry. Any copy so made which has been certified by the master of the ship as a true copy of an entry in the Oil Record Book Part II shall be made admissible in any juridical proceedings as evidence of the facts stated in the entry. The inspection of an Oil Record Book Part II and the taking of a certified copy by the competent authority under this paragraph shall

[1]This sentence should only be inserted for the Oil Record Book of a tanker engaged in a specific trade.

be performed as expeditiously as possible without causing the ship to be unduly delayed.

LIST OF ITEMS TO BE RECORDED

(A) Loading of oil cargo

1. Place of loading.

2. Type of oil loaded and identity of tank(s).

3. Total quantity of oil loaded (state quantity added, in m^3 at 15°C and the total content of tank(s), in m^3).

(B) Internal transfer of oil cargo during voyage

4. Identity of tank(s):

   .1 from:

   .2 to: (state quantity transferred and total quantity of tank(s), in m^3)

5. Was (were) the tank(s) in 4.1 emptied? (If not, state quantity retained, in m^3)

(C) Unloading of oil cargo

6. Place of unloading.

7. Identity of tank(s) unloaded.

8. Was (were) the tank(s) emptied? (If not, state quantity retained, in m^3.)

(D) Crude oil washing (COW tankers only)
(To be completed for each tank being crude oil washed).

9. Port where crude oil washing was carried out or ship's position if carried out between two discharge ports.

10. Identity of tank(s) washed.[2]

11. Number of machines in use.

12. Time of start of washing.

13. Washing pattern employed.[3]

[2]When an individual tank has more machines than can be operated simultaneously, as described in the Operations and Equipment Manual, then the section being crude oil washed should be identified, e.g. No. 2 centre, forward section.
[3]In accordance with the Operations and Equipment Manual, enter whether single-stage or multi-stage method of washing is employed. If multi-stage method is used, give the vertical arc covered by the machines and the number of times that arc is covered for that particular stage of the programme.

14. Washing line pressure.

15. Time washing was completed or stopped.

16. State method of establishing that tank(s) was (were) dry.

17. Remarks.[4]

(E) Ballasting of cargo tanks

18. Position of ship at start and end of ballasting.

19. Ballasting process:

    .1 identity of tank(s) ballasted;

    .2 time of start and end; and

    .3 quantity of ballast received. Indicate total quantity of ballast for each tank involved in the operation, in m^3.

(F) Ballasting of dedicated clean ballast tanks (CBT tankers only)

20. Identity of tank(s) ballasted.

21. Position of ship when water intended for flushing, or port ballast was taken to dedicated clean ballast tank(s).

22. Position of ship when pump(s) and lines were flushed to slop tank.

23. Quantity of the oily water which, after line flushing, is transferred to the slop tank(s) or cargo tank(s) in which slop is preliminarily stored (identify tank(s)). State the total quantity, in m^3.

24. Position of ship when additional ballast water was taken to dedicated clean ballast tank(s).

25. Time and position of ship when valves separating the dedicated clean ballast tanks from cargo and stripping lines were closed.

26. Quantity of clean ballast taken on board, in m^3.

(G) Cleaning of cargo tanks

27. Identity of tank(s) cleaned.

28. Port or ship's position.

29. Duration of cleaning.

[4]If the programmes given in the Operations and Equipment Manual are not followed, then the reasons must be given under Remarks.

30. Method of cleaning.[5]

31. Tank washings transferred to:

.1 reception facilities (state port and quantity, in m^3)[6];

.2 slop tank(s) or cargo tank(s) designated as slop tank(s) (identify tank(s); state quantity transferred and total quantity, in m^3).

(H) Discharge of dirty ballast

32. Identity of tank(s).

33. Position of ship at start of discharge into the sea.

34. Position of ship on completion of discharge into the sea.

35. Quantity discharged into the sea, in m^3.

36. Ship's speed(s) during discharge.

37. Was the discharge monitoring and control system in operation during the discharge?

38. Was a regular check kept on the effluent and the surface of the water in the locality of the discharge

39. Quantity of oily water transferred to slop tank(s) (identify slop tank(s). State total quantity, in m^3).

40. Discharged to shore reception facilities (identify port and quantity involved, in m^3).[6]

(I) Discharge of water from slop tanks into the sea

41. Identity of slop tanks.

42. Time of settling from last entry of residues, or

43. Time of settling from last discharge.

44. Time and position of ship at start of discharge.

45. Ullage of total contents at start of discharge.

[5]Hand-hosing, machine washing and/or chemical cleaning. Where chemically cleaned, the chemical concerned and amount used should be stated.
[6]Ships' masters should obtain from the operator of the reception facilities, which include barges and tank trucks, a receipt or certificate detailing the quantity of tank washings, dirty ballast, residues or oily mixtures transferred, together with the time and date of the transfer. This receipt or certificate, if attached to the Oil Record Book Part II, may aid the master of the ship in proving that his ship was not involved in an alleged pollution incident. The receipt or certificate should be kept together with the Oil Record Book Part II.

46. Ullage of oil/water interface at start of discharge.

47. Bulk quantity discharged, in m^3 and rate of discharge, in m^3/hour.

48. Final quantity discharged, in m^3 and rate of discharge, in m^3/hour.

49. Time and position of ship on completion of discharge.

50. Was the discharge monitoring and control system in operation during the discharge?

51. Ullage of oil/water interface on completion of discharge, in metres.

52. Ship's speed(s) during discharge.

53. Was a regular check kept on the effluent and the surface of the water in the locality of the discharge?

54. Confirm that all applicable valves in the ship's piping system have been closed on completion of discharge from the slop tanks.

(J) Disposal of residues and oily mixtures not otherwise dealt with

55. Identity of tank(s).

56. Quantity disposed of from each tank. (State the quantity retained, in m^3.)

57. Method of disposal:

    .1 to reception facilities (identify port and quantity involved)[6];

    .2 mixed with cargo (state quantity);

    .3 transferred to (an) other tank(s) (identify tank(s); state quantity transferred and total quantity in tank(s), in m^3); and

    .4 other method (state which); state quantity disposed of, in m^3.

(K) Discharge of clean ballast contained in cargo tanks

58. Position of ship at start of discharge of clean ballast.

59. Identity of tank(s) discharged.

60. Was (were) the tank(s) empty on completion?

61. Position of ship on completion if different from 58.

[6]Ships' masters should obtain from the operator of the reception facilities, which include barges and tank trucks, a receipt or certificate detailing the quantity of tank washings, dirty ballast, residues or oily mixtures transferred, together with the time and date of the transfer. This receipt or certificate, if attached to the Oil Record Book Part II, may aid the master of the ship in proving that his ship was not involved in an alleged pollution incident. The receipt or certificate should be kept together with the Oil Record Book Part II.

62. Was a regular check kept on the effluent and the surface of the water in the locality of the discharge?

(L) Discharge of ballast from dedicated clean ballast tanks (CBT tankers only)

63. Identity of tank(s) discharged.

64. Time and position of ship at start of discharge of clean ballast into the sea.

65. Time and position of ship on completion of discharge into the sea.

66. Quantity discharged, in m^3:

.1 into the sea; or

.2 to reception facility (identify port).[6]

67. Was there any indication of oil contamination of the ballast water before or during discharge into the sea?

68. Was the discharge monitored by an oil content meter—

69. Time and position of ship when valves separating dedicated clean ballast tanks from the cargo and stripping lines were closed on completion of deballasting.

(M) Condition of oil discharge monitoring and control system

70. Time of system failure.

71. Time when system has been made operational.

72. Reasons for failure.

(N) Accidental or other exceptional discharges of oil

73. Time of occurrence.

74. Port or ship's position at time of occurrence.

75. Approximate quantity, in m^3, and type of oil.

76. Circumstances of discharge or escape, the reasons therefore and general remarks.

(O) Additional operational procedures and general remarks

[6]Ships' masters should obtain from the operator of the reception facilities, which include barges and tank trucks, a receipt or certificate detailing the quantity of tank washings, dirty ballast, residues or oily mixtures transferred, together with the time and date of the transfer. This receipt or certificate, if attached to the Oil Record Book Part II, may aid the master of the ship in proving that his ship was not involved in an alleged pollution incident. The receipt or certificate should be kept together with the Oil Record Book Part II.

TANKERS ENGAGED IN SPECIFIC TRADES.

(P) Loading of ballast water

77. Identity of tank(s) ballasted.

78. Position of ship when ballasted.

79. Total quantity of ballast loaded in cubic metres.

80. Remarks.

(Q) Re-allocation of ballast water within the ship

81. Reasons for re-allocation.

(R) Ballast water discharge to reception facility

82. Port(s) where ballast water was discharged.

83. Name or designation of reception facility.

84. Total quantity of ballast water discharged in cubic metres.

85. Date, signature and stamp of port authority official.

Name of ship .....

Distinctive number or letters .....

CARGO/BALLAST OPERATIONS (OIL TANKERS)

Date	**Code (letter)**	**Item (number)**	**Record of operations/signature of officer in charge**

Signature of master .....

SCHEDULE 4

Regulations 13 and 20.

Figures referred to in Regulations 13 and 20

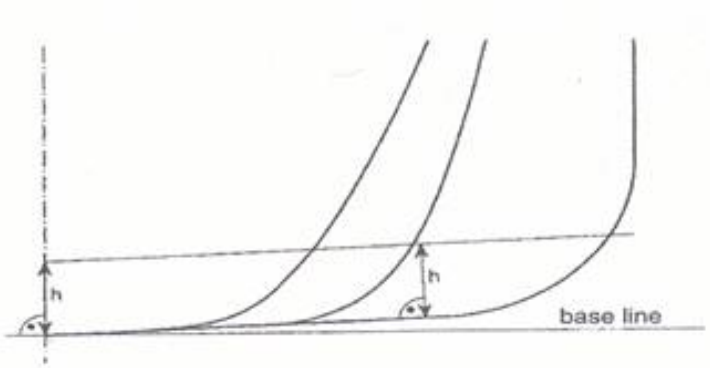


Figure 1 — Tank boundary lines for the purpose of Regulations 13 and 20

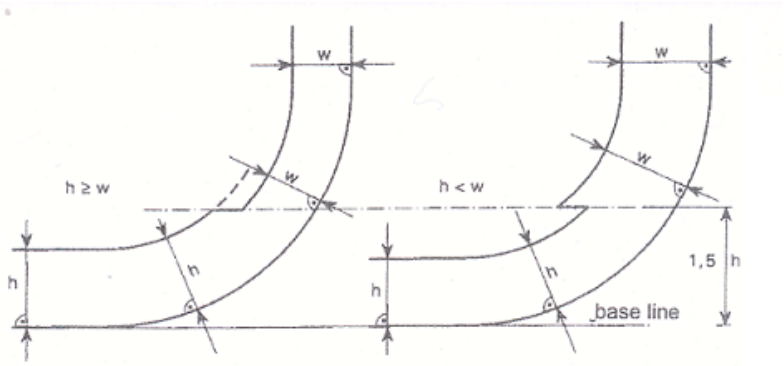


Figure 2 — Tank boundary lines for the purpose of Regulations 13 and 20

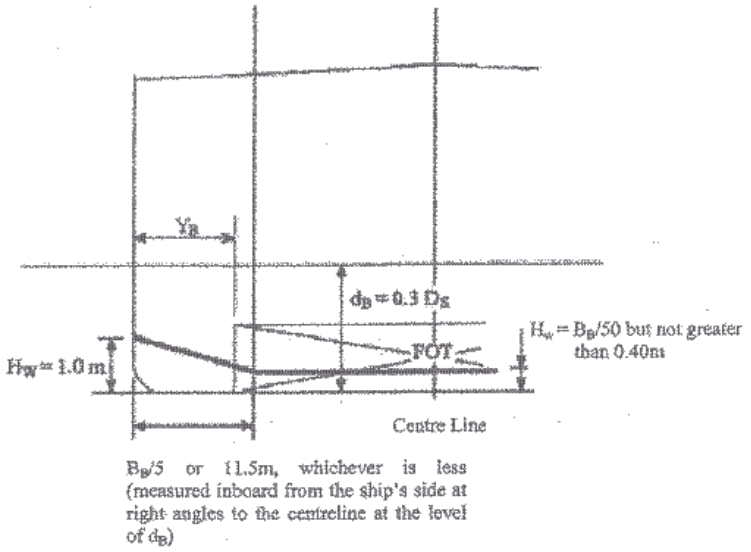


Figure 3 — Dimensions for calculation of the minimum oil outflow for the purpose of Regulation 13

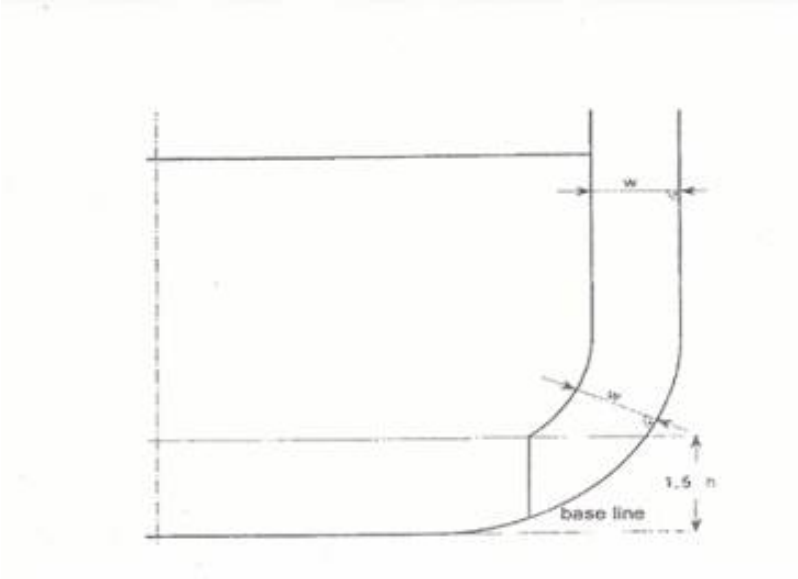


Figure 4 — Cargo tank boundary lines for the purpose of Regulation 20

L.S.

GIVEN under my Official Seal,
29 November 2007

NOEL DEMPSEY,
Minister for Transport.

EXPLANATORY NOTE.

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

These Regulations give effect to Annex I of the International Convention for the Prevention of Pollution from Ships, adopted by the International Maritime Organization on 2 November, 1973 and as amended by its Protocol adopted by the International Maritime Organization on 17 February, 1978 and as further amended under resolutions adopted by the Marine Environment Protection Committee (MEPC) of the International Maritime Organization.

The Regulations apply to all Irish ships wherever they may be and to all other ships when they are in the territorial waters of the State.

The Regulations prohibit and control discharge into the sea of oil and oily mixtures. The Regulations require ships to follow specified procedures when washing cargo tanks. Ballasting arrangements and the discharge of ballast water are also controlled. The Regulations also provide for adequate facilities at ports and terminals for the reception of oil and oily mixtures.

Ships are required to be surveyed for the purposes of the Regulations and to carry an International Pollution Prevention Certificate. Ships are also required to carry an Operations and Equipment Manual, an Oil Record Book and a shipboard oil pollution emergency plan approved by the Minister or recognised organisation.

Section 29 of the Sea Pollution Act, 1991 provides for penalties for breaches of these Regulations.

BAILE ÁTHA CLIATH
ARNA FHOILSIÚ AG OIFIG AN tSOLÁTHAIR
Le ceannach díreach ón
OIFIG DHÍOLTA FOILSEACHÁN RIALTAIS,
TEACH SUN ALLIANCE, SRÁID THEACH LAIGHEAN, BAILE ÁTHA CLIATH 2
nó tríd an bpost ó
FOILSEACHÁIN RIALTAIS, AN RANNÓG POST-TRÁCHTA,
51 FAICHE STIABHNA, BAILE ÁTHA CLIATH 2
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DUBLIN
PUBLISHED BY THE STATIONERY OFFICE
To be purchased directly from the
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ISBN 1-4064-3397-7

€21.59

9 781406 433975

Wt. (B25701). 348. 12/07. Cahill. Gr. 30-15.