Intermaritime Certification Services
ICS Class

This training/examination module is covering the following item:

Module 2H: Oil Pollution

In compliance with the IMO resolution MSC.349(92) and MEPC.237(65),
RO Code, Appendix 2.

CONTENTS

Module 2H: Oil Pollution

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

Learning Outcomes

- The purpose of this module is to provide the student the knowledge on how to inspect a ship complying with the MARPOL 73/78 – Annex I, aiming to protect the marine environment from the oil pollution caused by ships and ensure that operations of the oil tankers are environmentally correct.

Upon completion of the course the participant will be able to:

- Understand the definitions established by MARPOL Annex I
- Understand the scope of each survey
- Understand the requirements for all ships
- Understand the additional requirements for oil tankers

1.1 Introduction to MARPOL

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.

The MARPOL Convention was adopted on 2 November 1973 at IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI was added which entered into force on 19 May 2005. MARPOL has been updated by amendments through the years.

The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.

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

Covers prevention of pollution by oil from operational measures as well as from accidental discharges; the 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls and brought in a phase-in schedule for existing tankers to fit double hulls, which was subsequently revised in 2001 and 2003.

1.3 Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force 2 October 1983)

Details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk; some 250 substances were evaluated and included in the list appended to the Convention; the discharge of their residues is allowed only to reception facilities until certain concentrations and conditions (which vary with the category of substances) are complied with.

In any case, no discharge of residues containing noxious substances is permitted within 12 miles of the nearest land.

1.4 Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992)

Contains general requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions and notifications.

For the purpose of this Annex, "harmful substances" are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code) or which meet the criteria in the Appendix of Annex III.

1.5 Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003)

Contains requirements to control pollution of the sea by sewage; the discharge of sewage into the sea is prohibited, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land; sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nautical miles from the nearest land.

1.6 Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988)

Deals with different types of garbage and specifies the distances from land and the manner in which they may be disposed of; the most important feature of the Annex is the complete ban imposed on the disposal into the sea of all forms of plastics.

1.7 Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)

Sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances; designated emission control areas set more stringent standards for SOx, NOx and particulate matter. A chapter adopted in 2011 covers mandatory technical and operational energy efficiency measures aimed at reducing greenhouse gas emissions from ships.

2. MARPOL Annex I – Prevention of Pollution by Oil

Oil tankers transport some 2,900 million tonnes of crude oil and oil products every year around the world by sea. Most of the time, oil is transported quietly and safely.

Measures introduced by IMO have helped ensure that the majority of oil tankers are safely built and operated and are constructed to reduce the amount of oil spilled in the event of an accident. Operational pollution, such as from routine tank cleaning operations, has also been cut.

The operational and construction regulations introduced by MARPOL, which entered into force in 1983, have been a success, with statistics from reputable industry and independent bodies showing that these regulations, along with other safety-related regulations such as the introduction of mandatory traffic separation schemes and international standards for seafarer training, have been instrumental in the continuous decline of accidental oil pollution that has taken place over the last 30 years.

The MARPOL convention, in 1983, introduced a number of radical new concepts, such as a requirement for new oil tankers to be fitted with segregated ballast tanks, so as to obviate the need to carry ballast water in cargo tanks. This was superseded by the requirement for oil tankers delivered from 1996 onwards to be fitted with a double hull. The protection of the marine environment was thus greatly enhanced.

As far as operational oil pollution is concerned, the many innovations introduced by MARPOL on allowable discharges of bilge water through the oily water separator (with the well-known 15ppm standard), or oily waters from the cargo tanks, through the oil discharge and monitoring system, have contributed greatly to a noticeable decrease in the pollution of the world's seas, though it is fair to recognize that a greater effort to impose compliance must be carried out.

2.1 International Oil Pollution Prevention Certificate (Annex I Reg. 7.1)

"An International Oil Pollution Prevention Certificate shall be issued, after an initial or renewal survey in accordance with the provisions of regulation 6 of this Annex, 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 to the present Convention"

2.2 Definitions (Annex I Reg. 1)

2.2.1 Oil

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 present Convention) and, without limiting the generality of the foregoing, includes the substances listed in appendix I to this Annex.

2.2.1.1 Appendix I – List of Oils

Asphalt solutions	• Blending stocks • Roofers flux	• Straight run residue
Oils	• Clarified • Crude oil • Mixtures containing crude oil • Diesel oil • Fuel oil no. 4 • Fuel oil no. 5 • Fuel oil no. 6 • 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	• Fuel oil no. 1 (kerosene) • Fuel oil no. 1-D • 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 distillate oil

2.2.2 Oil

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

.1 crude oil from which certain distillate fractions may have been removed; and
.2 crude oil to which certain distillate fractions may have been added.

2.2.3 Oil mixture

Oily mixture means a mixture with any oil content.

2.2.4 Oil fuel

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.

2.2.5 Oil tanker

Oil tanker means a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces and includes combination carriers, any "NLS tanker" as defined in Annex II of the present Convention and any gas carrier as defined in regulation 3.20 of chapter II-1 of SOLAS 74 (as amended), when carrying a cargo or part cargo of oil in bulk.

2.2.6 Crude oil tanker

Crude oil tanker means an oil tanker engaged in the trade of carrying crude oil.

2.2.7 Product carrier

Product carrier means an oil tanker engaged in the trade of carrying oil other than crude oil.

2.2.8 Combination carrier

Combination carrier means a ship designed to carry either oil or solid cargoes in bulk.

2.2.9 Major Conversion

Major conversion:

.1 means a conversion of a ship:

.1.1 which substantially alters the dimensions or carrying capacity of the ship; or

.1.2 which changes the type of the ship; or

.1.3 the intent of which in the opinion of the Administration is substantially to prolong its life; or

.1.4 which otherwise so alters the ship that, if it were a new ship, it would become subject to relevant provisions of the present Convention not applicable to it as an existing ship.

.2 Notwithstanding the provisions of this definition:

.2.1 conversion of an oil tanker of 20,000 tonnes deadweight and above delivered on or before 1 June 1982, as defined in regulation 1.28.3, to meet the requirements of regulation 18 of this Annex shall not be deemed to constitute a major conversion for the purpose of this Annex; and

.2.2 conversion of an oil tanker delivered before 6 July 1996, as defined in regulation 1.28.5, to meet the requirements of regulation 19 or 20 of this Annex shall not be deemed to constitute a major conversion for the purpose of this Annex.

2.2.10 Nearest land

The term “from the nearest land” means from the baseline from which the territorial sea of the territory in question is established in accordance with international law, except that, for the purposes of the present 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 09°10' S, longitude 143°52' E,
thence to a point latitude 09°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.

2.2.11 Special Area

Special area means a sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by oil is required.

For the purposes of this Annex, the special areas are defined as follows:

.1 the 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 005°36' W;

.2 the 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;

.3 the Black Sea area means the Black Sea proper with the boundary between the Mediterranean Sea and the Black Sea constituted by the parallel 41° N;

.4 the 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, 043°19.6' E) and Husn Murad (12°40.4' N, 043°30.2' E);

.5 the Gulfs area means the sea area located north-west of the rhumb line between Ras al Hadd (22°30' N, 059°48' E) and Ras al Fasteh (25°04' N, 061° 25' E);

.6 the 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, 043°19'.6 E) and Husn Murad (12°40'.4 N, 043°30'.2 E) and to the east by the rhumb line between Ras Asir (11°50' N, 051°16'.9 E) and the Ras Fartak (15°35' N, 052°13'.8 E);

.7 the Antarctic area means the sea area south of latitude 60°S; and

.8 the North West European waters include 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. The area is bounded by lines joining the following points:

48° 27' N on the French coast
48° 27' N; 006° 25' W
49° 52' N; 007° 44' W
50° 30' N; 012° W
56° 30' N; 012° W
62° N; 003° W
62° N on the Norwegian coast
57° 44.8' N on the Danish and Swedish coasts

.9 the Oman area of the Arabian Sea means the sea area enclosed by the following coordinates:

22° 30'.00 N; 059° 48'.00 E
23° 47'.27 N; 060° 35'.73 E
22° 40'.62 N; 062° 25'.29 E
21° 47'.40 N; 063° 22'.22 E
20° 30'.37 N; 062° 52'.41 E
19° 45'.90 N; 062° 25'.97 E
18° 49'.92 N; 062° 02'.94 E
17° 44'.36 N; 061° 05'.53 E
16° 43'.71 N; 060° 25'.62 E
16° 03'.90 N; 059° 32'.24 E
15° 15'.20 N; 058° 58'.52 E
14° 36'.93 N; 058° 10'.23 E
14° 18'.93 N; 057° 27'.03 E
14° 11'.53 N; 056° 53'.75 E
13° 53'.80 N; 056° 19'.24 E
13° 45'.86 N; 055° 54'.53 E
14° 27'.38 N; 054° 51'.42 E
14° 40'.10 N; 054° 27'.35 E
14° 46'.21 N; 054° 08'.56 E
15° 20'.74 N; 053° 38'.33 E
15° 48'.69 N; 053° 32'.07 E
16° 23'.02 N; 053° 14'.82 E
16° 39'.06 N; 053° 06'.52 E

.10 the Southern South African waters means the sea area enclosed by the following co-ordinates:

31° 14' S; 017° 50' E
31° 30' S; 017° 12' E
32° 00' S; 017° 06' E
32° 32' S; 016° 52' E
34° 06' S; 017° 24' E
36° 58' S; 020° 54' E
36° 00' S; 022° 30' E
35° 14' S; 022° 54' E
34° 30' S; 026° 00' E
33° 48' S; 027° 25' E
33° 27' S; 027°12' E

2.2.11.1 Special areas under MARPOL are as follows:

Adoption, entry into force & date of taking effect of Special Areas

Special Areas	Adopted #	Date of Entry into Force	In Effect From
Annex I: Oil			
Mediterranean Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Baltic Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Black Sea	2 Nov 1973	2 Oct 1983	2 Oct 1983
Red Sea	2 Nov 1973	2 Oct 1983	*
"Gulfs" area	2 Nov 1973	2 Oct 1983	1 Aug 2008
Gulf of Aden	1 Dec 1987	1 Apr 1989	*
Antarctic area	16 Nov 1990	17 Mar 1992	17 Mar 1992
North West European Waters	25 Sept 1997	1 Feb 1999	1 Aug 1999
Oman area of the Arabian Sea	15 Oct 2004	1 Jan 2007	*
Southern South African waters	13 Oct 2006	1 Mar 2008	1 Aug 2008
Annex II: Noxious Liquid Substances			
Antarctic area	30 Oct 1992	1 Jul 1994	1 Jul 1994
Annex IV: Sewage			
Baltic Sea	15 Jul 2011	1 Jan 2013	**
Annex V: Garbage			
Mediterranean Sea	2 Nov 1973	31 Dec 1988	1 May 2009
Baltic Sea	2 Nov 1973	31 Dec 1988	1 Oct 1989
Black Sea	2 Nov 1973	31 Dec 1988	*
Red Sea	2 Nov 1973	31 Dec 1988	*
"Gulfs" area	2 Nov 1973	31 Dec 1988	1 Aug 2008
North Sea	17 Oct 1989	18 Feb 1991	18 Feb 1991
Antarctic area (south of latitude 60 degrees south)	16 Nov 1990	17 Mar 1992	17 Mar 1992
Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea	4 Jul 1991	4 Apr 1993	1 May 2011
Annex VI: Prevention of air pollution by ships (Emission Control Areas)			
Baltic Sea (SO_x)	26 Sept 1997	19 May 2005	19 May 2006
North Sea (SO_x)	22 Jul 2005	22 Nov 2006	22 Nov 2007
North American ECA (SO_x and PM)	26 Mar 2010	1 Aug 2011	1 Aug 2012
(NO_x)	26 Mar 2010	1 Aug 2011	***
United States Caribbean Sea ECA (SO_x and PM)	26 Jul 2011	1 Jan 2013	1 Jan 2014
(NO_x)	26 Jul 2011	1 Jan 2013	***

Status of multilateral conventions and instruments in respect of which the International Maritime Organization or its Secretary-General perform depositary or other functions as at 31 December 2002.
* The Special Area requirements for these areas have not yet taken effect because of lack of notifications from MARPOL Parties whose coastlines border the relevant special areas on the existence of adequate reception facilities (regulations 38.6 of MARPOL Annex I and 5(4) of MARPOL Annex V).
** The new special area requirements, which entered into force on 1 January 2013, will only take effect upon receipt of sufficient notifications on the existence of adequate reception facilities from Parties to MARPOL Annex IV whose coastlines border the relevant special area (regulation 13.2 of the revised MARPOL Annex IV, which was adopted by resolution MEPC.200(62) and which entered into force on 1 January 2013).
*** A ship constructed on or after 1 January 2016 and is operating in these emission control areas shall comply with NO_x Tier III standards set forth in regulation 13.5 of MARPOL Annex VI.

2.2.12 Instantaneous rate of discharge of oil content

Instantaneous rate of discharge of oil content means the rate of discharge of oil in liters per hour at any instant divided by the speed of the ship in knots at the same instant.

2.2.13 Tank

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.

2.2.14 Wing tank

Wing tank means any tank adjacent to the side shell plating.

2.2.15 Centre tank

Centre tank means any tank inboard of a longitudinal bulkhead.

2.2.16 Slop tank

Slop tank means a tank specifically designated for the collection of tank drainings, tank washings and other oily mixtures.

2.2.17 Clean ballast

Clean ballast means the ballast in a tank which since oil was last carried therein, has been so cleaned that effluent therefrom 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. If the ballast is discharged through an oil discharge monitoring and control system approved by the Administration, 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.

2.2.18 Segregated ballast

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 as variously defined in the Annexes of the present Convention.

2.2.19 Length

Length (L) 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 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.

2.2.20 Forward and after perpendiculars

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.

2.2.21 Amidships

Amidships is at the middle of the length (L).

2.2.22 Breadth

Breadth (B) means the maximum breadth of the ship, 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. The breadth (B) shall be measured in metres.

2.2.23 Deadweight (DW)

Deadweight (DW) means the difference in tonnes between the displacement of a ship in water of a relative density of 1.025 at the load waterline corresponding to the assigned summer freeboard and the lightweight of the ship.

2.2.24 Lightweight

Lightweight means the displacement of a ship in metric tons without cargo, fuel, lubricating oil, ballast water, fresh water and feed water in tanks, consumable stores, and passengers and crew and their effects.

2.2.25 Permeability of a space

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.

2.2.26 Volumes and areas

Volumes and areas in a ship shall be calculated in all cases to moulded lines.

2.2.27 Anniversary date

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.

2.2.28 Ship delivered on or before 31 December 1979

Ship delivered on or before 31 December 1979 means a ship:

.1 for which the building contract is placed on or before 31 December 1975; or

.2 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; or

.3 the delivery of which is on or before 31 December 1979; or

.4 which has undergone a major conversion:

.1 for which the contract is placed on or before 31 December 1975; or

.2 in the absence of a contract, the construction work of which is begun on or before 30 June 1976; or

.3 which is completed on or before 31 December 1979.

2.2.29 Ship delivered after 31 December 1979

Ship delivered after 31 December 1979 means a ship:

.1 for which the building contract is placed after 31 December 1975; or

.2 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; or

.3 the delivery of which is after 31 December 1979; or

.4 which has undergone a major conversion:

.1 for which the contract is placed after 31 December 1975; or

.2 in the absence of a contract, the construction work of which is begun after 30 June 1976; or

.3 which is completed after 31 December 1979.

2.2.30 Oil tanker delivered on or before 1 June 1982

Oil tanker delivered on or before 1 June 1982 means an oil tanker:

.1 for which the building contract is placed on or before 1 June 1979; or

.2 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; or

.3 the delivery of which is on or before 1 June 1982; or

.4 which has undergone a major conversion:

.1 for which the contract is placed on or before 1 June 1979; or

.2 in the absence of a contract, the construction work of which is begun on or before 1 January 1980; or

.3 which is completed on or before 1 June 1982

2.2.31 Oil tanker delivered after 1 June 1982

Oil tanker delivered after 1 June 1982 means an oil tanker:

.1 for which the building contract is placed after 1 June 1979; or

.2 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; or

.3 the delivery of which is after 1 June 1982; or

.4 which has undergone a major conversion:

.1 for which the contract is placed after 1 June 1979; or

.2 in the absence of a contract, the construction work of which is begun after 1 January 1980; or

.3 which is completed after 1 June 1982.

2.2.32 Oil tanker delivered before 6 July 1996

Oil tanker delivered before 6 July 1996 means an oil tanker:

.1 for which the building contract is placed before 6 July 1993; or

.2 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; or

.3 the delivery of which is before 6 July 1996; or

.4 which has undergone a major conversion:

.1 for which the contract is placed before 6 July 1993; or

.2 in the absence of a contract, the construction work of which is begun before 6 January 1994; or

.3 which is completed before 6 July 1996.

2.2.33 Oil tanker delivered before 6 July 1996

Oil tanker delivered on or after 6 July 1996 means an oil tanker:

.1 for which the building contract is placed on or after 6 July 1993; or

.2 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; or

.3 the delivery of which is on or after 6 July 1996; or

.4 which has undergone a major conversion:

.1 for which the contract is placed on or after 6 July 1993; or

.2 in the absence of a contract, the construction work of which is begun on or after 6 January 1994; or

.3 which is completed on or after 6 July 1996.

2.2.34 Oil tanker delivered before 6 July 1996

Oil tanker delivered on or after 1 February 2002 means an oil tanker:

.1 for which the building contract is placed on or after 1 February 1999; or

.2 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; or

.3 the delivery of which is on or after 1 February 2002; or

.4 which has undergone a major conversion:

.1 for which the contract is placed on or after 1 February 1999; or

.2 in the absence of a contract, the construction work of which is begun on or after 1 August 1999; or

.3 which is completed on or after 1 February 2002.

2.2.35 Oil tanker delivered on or after 1 January 2010

Oil tanker delivered on or after 1 January 2010 means an oil tanker:

.1 for which the building contract is placed on or after 1 January 2007; or

.2 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; or

.3 the delivery of which is on or after 1 January 2010; or

.4 which has undergone a major conversion:

.1 for which the contract is placed on or after 1 January 2007; or

.2 in the absence of a contract, the construction work of which is begun on or after 1 July 2007; or

.3 which is completed on or after 1 January 2010.

2.2.36 Ship delivered on or after 1 August 2010

Ship delivered on or after 1 August 2010 means a ship:

.1 for which the building contract is placed on or after 1 August 2007; or

.2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 February 2008; or

.3 the delivery of which is on or after 1 August 2010; or

.4 which have undergone a major conversion:

.1 for which the contract is placed after 1 August 2007; or

.2 in the absence of contract, the construction work of which is begun after 1 February 2008; or

.3 which is completed after 1 August 2010.

2.2.37 Parts per million (ppm)

Parts per million (ppm) means parts of oil per million parts of water by volume.

2.2.38 Constructed

Constructed means a ship the keel of which is laid or which is at a similar stage of construction.

2.2.39 Oil residue (sludge)

Oil residue (sludge) means the residual waste oil products generated during the normal operation of a ship such as those resulting from the purification of fuel or lubricating oil for main or auxiliary machinery, separated waste oil from oil filtering equipment, waste oil collected in drip trays, and waste hydraulic and lubricating oils.

2.2.40 Oil residue (sludge) tank

Oil residue (sludge) tank means a tank which holds oil residue (sludge) from which sludge may be disposed directly through the standard discharge connection or any other approved means of disposal.

2.2.41 Oily bilge water

Oily bilge water means water which may be contaminated by oil resulting from things such as leakage or maintenance work in machinery spaces. Any liquid entering the bilge system including bilge wells, bilge piping, tank top or bilge holding tanks is considered oily bilge water.

2.2.42 Oily bilge water holding tank

Oily bilge water holding tank means a tank collecting oily bilge water prior to its discharge, transfer or disposal.

2.2.43 Audit

Audit means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

2.2.44 Audit Scheme

Audit Scheme means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization.

2.2.45 Code for Implementation

Code for Implementation means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

2.2.46 Audit Standard

Audit Standard means the Code for Implementation.

2. Shipboard Marine Pollution Emergency Plans

Regulation 37 of MARPOL Annex I requires that:

- oil tankers of 150 gross tonnage and above; and
- all ships of 400 gross tonnage and above

carry an approved Shipboard Oil Pollution Emergency Plan (SOPEP). Article 3 of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990, also requires such a plan for certain ships.

Regulation 17 of MARPOL Annex II makes similar stipulations that:

- all ships of 150 gross tonnage and above carrying noxious liquid substances in bulk

carry an approved shipboard marine pollution emergency plan for noxious liquid substances.

The latter may be combined with a SOPEP, since most of their contents are the same and one combined plan on board is more practical than two separate ones in case of an emergency. To make it clear that the plan is a combined one, it should be referred to as a Shipboard Marine Pollution Emergency Plan (SMPEP).

To help Administrations and shipowners meet these requirements, IMO has produced the Guidelines for the Development of Shipboard Marine Pollution Emergency Plans, 2010 Edition which includes Guidelines for the development of Shipboard Oil Pollution Emergency Plans (SOPEP) *(resolution MEPC.54(32), as amended by resolution MEPC.86(44)* and Guidelines for the development of Shipboard Marine Pollution Emergency Plans of Oil and/or Noxious Liquid Substances *(Resolution MEPC.85(44), as amended by resolution MEPC.137(53))*.

The two sets of guidelines provide that the shipboard emergency plans should include, as an appendix, the list of agencies or officials of administrations responsible for receiving and processing reports on incidents involving oil and/or harmful substances (List of National Operation Contact Points).

3. Crude Oil Washing

Crude oil washing (COW) is a system whereby oil tanks on a tanker are cleaned out between voyages not with water, but with crude oil - the cargo itself. The solvent action of the crude oil makes the cleaning process far more effective than when water is used. (There is usually a final water rinse but the amount of water involved is very low.) The system helps prevent pollution of the seas from operational measures.

Crude oil washing was made mandatory for new tankers by the 1978 Protocol to the MARPOL Convention. Regulation 33 of MARPOL Annex I requires every new crude oil tanker of 20,000 tons deadweight and above to be fitted with a cargo tank cleaning system using crude oil washing.

Regulation 33 states that COW installation and arrangements should comply with at least all of the provisions of the Specifications for the Design, Operation and Control of Crude Oil Washing Systems adopted by IMO in 1978, as may be revised.

In 1999, IMO adopted revised specifications for COW by resolution A. 897(21) Amendments to the revised Specifications for the Design, Operation and Control of Crude Oil Washing Systems (Resolution A.446(XI), as amended by resolution A.497(XII).

4. Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships

Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships are contained in resolution MEPC.107(49) which supersedes the recommendations contained in resolution MEPC.60(33).

A list of approved equipment can be found in the Pollution Prevention Equipment module in the Global Integrated Shipping Information System (GISIS) accessible by the public at http://gisis.imo.org.

5. Survey Guidelines of Ships in Compliance with the International Convention For Prevention Of Pollution From Ships, 1973/78

5.1 General

The following provisions regulate the scope of surveys of ships in service the International Oil Pollution Prevention Certificate in compliance with the provisions of Annex I to MARPOL 73/78, as amended, and IMO Resolution A. 1053(27).

5.2 Annual Survey

5.2.1 Certificates and Records on all ships (as applicable)

For oil pollution prevention the examination of current certificates and other records shall consist of:

1. Checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;

2. Checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;

3. Checking the validity of the International Oil Pollution Prevention Certificate;

4. Checking the certificates of class, if the ship is classed with a classification society;

5. Checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;

6. Checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;

7. Checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;

8. Checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;

9. Checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;

10. Checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;

11. Checking the validity of the International Ship Security Certificate;

12. Checking that the ship's complement complies with the Minimum Safe Manning Document (Reg.V/14.2 SOLAS-74/88/00);

13. Checking that the Master, officers and ratings are certificated as required by the STCW Convention;

14. Checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;

15. Checking the certificates for the type approval of the oil filtering copies of equipment (Regs. 14 and 15, Annex I to MARPOL 90/04);

16. Checking, when appropriate, that the Operating and Maintenance manuals for the 15 ppm bilge separator and 15 ppm bilge alarm separator are available on board;

17. Verifying, if applicable, that the 15 ppm bilge alarm separator has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board (for installations complying with resolution MEPC. 107(49));

18. Checking whether the appropriate entries have been made in Part I of the Oil Record Book (reg. 17, Annex I to MARPOL 90/04);

19. Confirming that the International Anti-fouling System Certificate, if applicable, is on board (appendix 1 to Annex 4 to AFS Convention).

20. Confirming that the oil pollution emergency plan, or shipboard marine pollution emergency plan with regard to the ships certified to carry noxious liquid substances in bulk are available on board (reg. 37 and 37.3, Annex I to MARPOL 90/04);

21. Checking the validity of the International Energy Efficiency Certificate (Regs. 6.4 and 6.5, Annex VI to MARPOL).

5.2.2 Additional Certificates and Records on Oil Tankers

For oil pollution prevention the examination of current certificates and other records for oil tankers shall additionally consist of:

1. Confirming that the approved Dedicated Clean Ballast Tank Operation Manual, and/or the approved Operations and Equipment Manual for the Crude Oil Washing Systems, as appropriate, is/are on board (regs. 18 and 35, Annex I to MARPOL 90/04);

2. Confirming, when appropriate, that CAS Statement of Compliance together with the CAS Final Report are on board (refer to resolution MEPC.94(46) as amended — Condition Assessment Scheme) (regs. 20.6, 20.7 and 21.6 Annex I MARPOL);

3. Confirming that the Operating and Maintenance Manual for the oil discharge, monitoring and control system is on board (reg. 31 Annex I MARPOL 90/04);

4. Checking whether the appropriate entries have been made in Part II of the Oil Record Book (reg. 36 Annex I MARPOL 90/04);

5. Confirming that subdivision and damage stability information in an approved form, where applicable, is on board (reg. 28, Annex I to MARPOL 90/04);

6. Confirming that a valid calibration certificate for the oil discharge monitoring equipment is available on board (for installations complying with resolution MEPC.108(49)) as amended by IMO resolution MEPC.240(65));

7. Confirming that for oil tankers of 5,000 tonnes dead-weight and above delivered on/ after 1 February 2002 the loading conditions and intact stability information, in an approved form, is on board (reg. 27 Annex I MARPOL 90/04);

8. Checking the certificates for the type approval of the oil pollution prevention equipment, such as the oil content meters and oil/ water interface detectors, and sighting the records of the various oil discharge monitoring equipment, as applicable (reg. 31 Annex I MARPOL 90/04);

9. Checking that the ship is allowed continued operation according to the phase-out scheme of reg. 20 Annex I MARPOL 90/04.

10. Confirming, when applicable, that the approved STS operations Plan is available on board (reg. 41, Annex I to MARPOL 90/04).

5.2.3 For oil pollution prevention the annual survey shall consist of:

1. Examining externally the oil filtering equipment and confirming, as far as practicable, its satisfactory operation including, when appropriate, testing the operation of the automatic means provided to stop the discharge of effluent and the alarm for the oil filtering equipment (Reg. 14 and 15 Annex I MARPOL 90/04);

2. Testing, where fitted, the oil filtering equipment required for discharge in special areas (Reg. 15 Annex I MARPOL 90/04);

3. Confirming the segregation of oil fuel and water ballast systems and that the arrangements prohibit the carriage of oil in forepeak tanks or in spaces forward of the collision bulkheads (Reg. 16 Annex I MARPOL 90/04);

4. Checking that the arrangement of oily residue (sludge) tank and its discharge arrangements are satisfactory and confirming that, where applicable, homogenizers, sludge incinerators or other recognized means for the control of sludge are satisfactory (Reg. 12 Annex I MARPOL 90/04);

5. Confirming that a standard discharge connection is provided (Reg. 13, Annex I to MARPOL 90/04).

5.2.4 For oil pollution prevention the annual survey of the additional requirements for oil tankers shall consist of:

1. Examining the oil discharge monitoring and control system and its associated equipment (reg. 31, Annex I to MARPOL 90/04) and, in particular:

    1.1. examining externally the system and equipment and, if applicable, verifying that the instrument is properly sealed;

    1.2. confirming, as far as practicable, the satisfactory operation of the oil discharge monitoring and control system including the oil content meter and, where applicable, the automatic and manual means provided to stop the discharge of effluent and the starting interlock;

    1.3. observing that indicators and recording devices are operable and verifying that sufficient supply of consumables for the recorders is available on board;

1.4. testing, as far as practicable, any audible and visual alarms fitted to the oil discharge monitoring and control system;

2. Examining, as far as practicable, the oil/water interface detectors in the slop and other tanks (reg. 32 Annex I MARPOL 90/04);

3. Confirming that no cross-connections have been fitted between the cargo and segregated ballast systems (reg. 18 Annex I MARPOL 90/04);

4. Where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (reg. 18 Annex I MARPOL 90/04);

5. Confirming by examining that there has been no contamination with oil in the segregated ballast tanks (reg. 18 Annex I MARPOL 90/04);

6. Confirming, as far as practicable, that the dedicated clean ballast tank arrangement remains satisfactory (reg. 18 Annex I MARPOL 90/04);

7. Confirming by examining that there has been no contamination with oil in the clean ballast tanks (reg. 18 Annex I MARPOL 90/04);

8. Confirming, as far as practicable, that the crude oil washing system remains satisfactory (reg. 18 Annex I MARPOL 90/04) and, in particular:

8.1. Externally the crude oil washing piping, pumps, valves and deck mounted washing machines for signs of leakage and checking that all anchoring devices for crude oil washing piping are intact and secure;

8.2. Confirming, in those cases where drive units are not integral with the tank cleaning machines, that the number of operational drive units as specified in the Manual are on board;

8.3. Checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or clearly identifiable blanks ;

8.4. Checking that the prescribed means of communication between the deck watch keeper and the cargo control position is operational;

8.5. Confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing systems;

8.6. Confirming that flexible hoses for supply of oil to the washing machines on combination carriers, are of an approved type, are properly stored and are in good condition;

9. Certifying, where applicable and as far as practicable, the effectiveness of the crude oil washing system (reg. 18 Annex I MARPOL 90/04) and, in particular:

9.1. Checking tanks containing departure and/or arrival ballast water, as applicable, to confirm the effectiveness of the cleaning and stripping;

9.2. Checking, as far as practicable, that the crude oil washing machines are operable and, when the survey is carried out during crude oil washing operations, observing the proper operation of the washing machines by means of the movement indicators and/ or sound patterns or other approved methods;

9.3. Checking, as far as practicable, the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by handdipping or other approved means;

10. Confirming that on those existing tankers that operate with special ballast arrangements, the arrangements are as approved and are satisfactory (reg. 18 Annex I MARPOL 90/04);

11. Confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are approved and are satisfactory (Regs. 19 to 22 Annex I MARPOL 90/04), see also 2.2.6;

12. Examining the piping system associated with the discharge of dirty ballast or oil-contaminated water including the part flow system if fitted (reg.30 Annex I MARPOL 90/04);

13. Testing the communication system between the observation and discharge control positions (reg. 30 Annex I MARPOL 90/04);

14. Examining the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore (reg. 30 Annex I MARPOL 90/04);

15. Confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programmes (reg.37.4 Annex I MARPOL 90/04).

5.2.5 For oil pollution prevention the completion of the annual survey shall consist of:

1. After a satisfactory survey, endorsing the International Oil Pollution Prevention Certificate;
2. If a survey shows that the condition of a ship or its equipment is unsatisfactory, the endorsement of the International Oil Pollution Prevention Certificate shall not be conducted.

5.3 Intermediate Survey

5.3.1 Certificates and Records on all ships (as applicable)

For oil pollution prevention the examination of current certificates and other records shall consist of:

1. Checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;

2. Checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;

3. Checking the certificates of class, if the ship is classed with a classification society;

4. Checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;

5. Checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;

6. Checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;

7. Checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;

8. Checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
9. Checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;

10. Checking the validity of the International Ship Security Certificate;

11. Checking that the ship's complement complies with the Minimum Safe Manning Document (Reg.V/14.2 SOLAS-74/88/00);

12. Checking that the Master, officers and ratings are certificated as required by the STCW Convention;

13. Checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;

14. Checking the certificates for the type approval of the oil filtering copies of equipment (Regs. 14 and 15, Annex I to MARPOL 90/04);

15. Checking, when appropriate, that the Operating and Maintenance manuals for the 15 ppm bilge separator and 15 ppm bilge alarm separator are available on board;

16. Verifying, if applicable, that the 15 ppm bilge alarm separator has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board (for installations complying with resolution MEPC. 107(49));

17. Checking whether the appropriate entries have been made in Part I of the Oil Record Book (reg. 17, Annex I to MARPOL 90/04);

18. Confirming that the International Anti-fouling System Certificate, if applicable, is on board (appendix 1 to Annex 4 to AFS Convention).

19. Confirming that the oil pollution emergency plan, or shipboard marine pollution emergency plan with regard to the ships certified to carry noxious liquid substances in bulk are available on board (reg. 37 and 37.3, Annex I to MARPOL 90/04);

20. Checking the validity of the International Energy Efficiency Certificate (Regs. 6.4 and 6.5, Annex VI to MARPOL).

5.3.2 Additional Certificates and Records on Oil Tankers

For oil pollution prevention the examination of current certificates and other records for oil tankers shall additionally consist of:

1. Confirming that the approved Dedicated Clean Ballast Tank Operation Manual, and/or the approved Operations and Equipment Manual for the Crude Oil Washing Systems, as appropriate, is/are on board (regs. 18 and 35, Annex I to MARPOL 90/04);

2. Confirming, when appropriate, that CAS Statement of Compliance together with the CAS Final Report are on board (refer to resolution MEPC.94(46) as amended — Condition Assessment Scheme) (regs. 20.6, 20.7 and 21.6 Annex I MARPOL);

3. Confirming that the Operating and Maintenance Manual for the oil discharge, monitoring and control system is on board (reg. 31 Annex I MARPOL 90/04);

4. Checking whether the appropriate entries have been made in Part II of the Oil Record Book (reg. 36 Annex I MARPOL 90/04);

5. Confirming that subdivision and damage stability information in an approved form, where applicable, is on board (reg. 28, Annex I to MARPOL 90/04);

6. Confirming that a valid calibration certificate for the oil discharge monitoring equipment is available on board (for installations complying with resolution MEPC.108(49)) as amended by IMO resolution MEPC.240(65));

7. Confirming that for oil tankers of 5,000 tonnes dead-weight and above delivered on/ after 1 February 2002 the loading conditions and intact stability information, in an approved form, is on board (reg. 27 Annex I MARPOL 90/04);

8. Checking the certificates for the type approval of the oil pollution prevention equipment, such as the oil content meters and oil/ water interface detectors, and sighting the records of the various oil discharge monitoring equipment, as applicable (reg. 31 Annex I MARPOL 90/04);

9. Checking that the ship is allowed continued operation according to the phase-out scheme of reg. 20 Annex I MARPOL 90/04.
10. Confirming, when applicable, that the approved STS operations Plan is available on board (reg. 41, Annex I to MARPOL 90/04).

5.3.3 For oil pollution prevention the Intermediate survey shall consist of:

1. Examining externally the oil filtering equipment and confirming, as far as practicable, its satisfactory operation including, when appropriate, testing the operation of the automatic means provided to stop the discharge of effluent and the alarm for the oil filtering equipment (Reg. 14 and 15 Annex I MARPOL 90/04);

2. Testing, where fitted, the oil filtering equipment required for discharge in special areas (Reg. 15 Annex I MARPOL 90/04);

3. Confirming the segregation of oil fuel and water ballast systems and that the arrangements prohibit the carriage of oil in forepeak tanks or in spaces forward of the collision bulkheads (Reg. 16 Annex I MARPOL 90/04);

4. Checking that the arrangement of oily residue (sludge) tank and its discharge arrangements are satisfactory and confirming that, where applicable, homogenizers, sludge incinerators or other recognized means for the control of sludge are satisfactory (Reg. 12 Annex I MARPOL 90/04);

5. Confirming that a standard discharge connection is provided (Reg. 13, Annex I to MARPOL 90/04).

6. Examining the oily-water separating equipment or oil filtering equipment or process unit, where fitted, including associated pumps, piping and valves for wear and corrosion (regs. 14 and 15, Annex I to MARPOL 90/04);

7. Examining the oil content meter (15 ppm alarm and bilge monitor) for obvious defects, deterioration or damage and checking the record of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (reg. 14 Annex I MARPOL 90/04).

5.3.4 For oil pollution prevention the Intermediate Survey of the additional requirements for oil tankers shall consist of:

1. Examining the oil discharge monitoring and control system and its associated equipment (reg. 31, Annex I to MARPOL 90/04) and, in particular:

    1.1. examining externally the system and equipment and, if applicable, verifying that the instrument is properly sealed;

    1.2. confirming, as far as practicable, the satisfactory operation of the oil discharge monitoring and control system including the oil content meter and, where applicable, the automatic and manual means provided to stop the discharge of effluent and the starting interlock;

    1.3. observing that indicators and recording devices are operable and verifying that sufficient supply of consumables for the recorders is available on board;

    1.4. testing, as far as practicable, any audible and visual alarms fitted to the oil discharge monitoring and control system;

2. Examining, as far as practicable, the oil/water interface detectors in the slop and other tanks (reg. 32 Annex I MARPOL 90/04);

3. Confirming that no cross-connections have been fitted between the cargo and segregated ballast systems (reg. 18 Annex I MARPOL 90/04);

4. Where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (reg. 18 Annex I MARPOL 90/04);

5. Confirming by examining that there has been no contamination with oil in the segregated ballast tanks (reg. 18 Annex I MARPOL 90/04);

6. Confirming, as far as practicable, that the dedicated clean ballast tank arrangement remains satisfactory (reg. 18 Annex I MARPOL 90/04);

7. Confirming by examining that there has been no contamination with oil in the clean ballast tanks (reg. 18 Annex I MARPOL 90/04);

8. Confirming, as far as practicable, that the crude oil washing system remains satisfactory (reg. 18 Annex I MARPOL 90/04) and, in particular:

    8.1. Externally the crude oil washing piping, pumps, valves and deck mounted washing machines for signs of leakage and checking that all anchoring devices for crude oil washing piping are intact and secure;

    8.2. Confirming, in those cases where drive units are not integral with the tank cleaning machines, that the number of operational drive units as specified in the Manual are on board;

    8.3. Checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or clearly identifiable blanks ;

    8.4. Checking that the prescribed means of communication between the deck watch keeper and the cargo control position is operational;

    8.5. Confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing systems;

8.6. Confirming that flexible hoses for supply of oil to the washing machines on combination carriers, are of an approved type, are properly stored and are in good condition;

9. Certifying, where applicable and as far as practicable, the effectiveness of the crude oil washing system (reg. 18 Annex I MARPOL 90/04) and, in particular:

9.1. Checking tanks containing departure and/or arrival ballast water, as applicable, to confirm the effectiveness of the cleaning and stripping;

9.2. Checking, as far as practicable, that the crude oil washing machines are operable and, when the survey is carried out during crude oil washing operations, observing the proper operation of the washing machines by means of the movement indicators and/ or sound patterns or other approved methods;

9.3. Checking, as far as practicable, the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by handdipping or other approved means;

10. Confirming that on those existing tankers that operate with special ballast arrangements, the arrangements are as approved and are satisfactory (reg. 18 Annex I MARPOL 90/04);

11. Confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are approved and are satisfactory (Regs. 19 to 22 Annex I MARPOL 90/04), see also 2.2.6;

12. Examining the piping system associated with the discharge of dirty ballast or oil-contaminated water including the part flow system if fitted (reg.30 Annex I MARPOL 90/04);

13. Testing the communication system between the observation and discharge control positions (reg. 30 Annex I MARPOL 90/04);

14. Examining the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore (reg. 30 Annex I MARPOL 90/04);

15. Confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programmes (reg.37.4 Annex I MARPOL 90/04).

16. Examining the oil discharge monitoring and control system and the oil content meter for obvious defects, deterioration or damage, and to check checking the record or of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (reg. 3 Annex I MARPOL 90/04);

17. Confirming the satisfactory operation of the oil/water interface detectors in slop and other tanks (reg.32 Annex I MARPOL 90/04);

18. For the crude oil washing requirements (reg. 33, Annex I to MARPOL 90/04):

    18.1. Examining the crude oil washing piping outside the cargo tanks. If upon examination there is any doubt as to its condition, the piping may be required to be pressure tested, gauged or both. Particular attention shall be paid to any repairs such as welded doublers;
    18.2. Confirming the satisfactory operation of the isolating valves to steam heaters for washing water, when fitted;
    18.3. Examining at least two selected cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems. If the tank cannot be gas-freed for the safe entry of the surveyor, an internal examination shall not be conducted. In this case the examination may be conducted in conjunction with the internal examination of the cargo tanks (see 2.1.2.3.3.3);

19. Examining the manual and/or remote operation of the individual tank valves (or other similar closing devices) to be kept closed at sea (regs.23 and 26 Annex I MARPOL 90/04).

5.3.5 For oil pollution prevention the completion of the intermediate survey shall consist of:

1. After a satisfactory survey, endorsing the International Oil Pollution Prevention Certificate;

2. If a survey shows that the condition of a ship or its equipment is unsatisfactory, the endorsement of the International Oil Pollution Prevention Certificate shall not be conducted.

5.4 Renewal Survey

5.4.1 Certificates and Records on all ships (as applicable)

For oil pollution prevention the examination of current certificates and other records shall consist of:

1. Checking the validity, as appropriate, of the Cargo Ship Safety Equipment Certificate, the Cargo Ship Safety Radio Certificate and the Cargo Ship Safety Construction Certificate or the Cargo Ship Safety Certificate;

2. Checking the validity of the International Load Line Certificate or International Load Line Exemption Certificate;

3. Checking the certificates of class, if the ship is classed with a classification society;

4. Checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk or the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk;

5. Checking, when appropriate, the validity of the International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk;

6. Checking, when appropriate, the validity of the International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk;

7. Checking, when appropriate, the validity of the International Sewage Pollution Prevention Certificate;

8. Checking, when appropriate, the validity of the International Air Pollution Prevention Certificate;
9. Checking the validity of the Safety Management Certificate (SMC) and that a copy of the Document of Compliance (DOC) is on board;

10. Checking the validity of the International Ship Security Certificate;

11. Checking that the ship's complement complies with the Minimum Safe Manning Document (Reg.V/14.2 SOLAS-74/88/00);

12. Checking that the Master, officers and ratings are certificated as required by the STCW Convention;

13. Checking whether any new equipment has been fitted and, if so, confirming that it has been approved before installation and that any changes are reflected in the appropriate certificate;

14. Checking the certificates for the type approval of the oil filtering copies of equipment (Regs. 14 and 15, Annex I to MARPOL 90/04);

15. Checking, when appropriate, that the Operating and Maintenance manuals for the 15 ppm bilge separator and 15 ppm bilge alarm separator are available on board;

16. Verifying, if applicable, that the 15 ppm bilge alarm separator has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board (for installations complying with resolution MEPC. 107(49));

17. Checking whether the appropriate entries have been made in Part I of the Oil Record Book (reg. 17, Annex I to MARPOL 90/04);

18. Confirming that the International Anti-fouling System Certificate, if applicable, is on board (appendix 1 to Annex 4 to AFS Convention).

19. Confirming that the oil pollution emergency plan, or shipboard marine pollution emergency plan with regard to the ships certified to carry noxious liquid substances in bulk are available on board (reg. 37 and 37.3, Annex I to MARPOL 90/04);

20. Checking the validity of the International Energy Efficiency Certificate (Regs. 6.4 and 6.5, Annex VI to MARPOL).

21. Verifying that, if applicable, the 15 ppm bilge alarm has been calibrated by the manufacturer or a person authorized by the manufacturer and that a valid calibration certificate is available on board (for installations complying with resolution MEPC. 107(49)).

5.4.2 Additional Certificates and Records on Oil Tankers

For oil pollution prevention the examination of current certificates and other records for oil tankers shall additionally consist of:

1. Confirming that the approved Dedicated Clean Ballast Tank Operation Manual, and/or the approved Operations and Equipment Manual for the

Crude Oil Washing Systems, as appropriate, is/are on board (regs. 18 and 35, Annex I to MARPOL 90/04);

2. Confirming, when appropriate, that CAS Statement of Compliance together with the CAS Final Report are on board (refer to resolution MEPC.94(46) as amended — Condition Assessment Scheme) (regs. 20.6, 20.7 and 21.6 Annex I MARPOL);

3. Confirming that the Operating and Maintenance Manual for the oil discharge, monitoring and control system is on board (reg. 31 Annex I MARPOL 90/04);

4. Checking whether the appropriate entries have been made in Part II of the Oil Record Book (reg. 36 Annex I MARPOL 90/04);

5. Confirming that subdivision and damage stability information in an approved form, where applicable, is on board (reg. 28, Annex I to MARPOL 90/04);

6. Confirming that a valid calibration certificate for the oil discharge monitoring equipment is available on board (for installations complying with resolution MEPC.108(49)) as amended by IMO resolution MEPC.240(65));

7. Confirming that for oil tankers of 5,000 tonnes dead-weight and above delivered on/ after 1 February 2002 the loading conditions and intact stability information, in an approved form, is on board (reg. 27 Annex I MARPOL 90/04);

8. Checking the certificates for the type approval of the oil pollution prevention equipment, such as the oil content meters and oil/ water interface detectors, and sighting the records of the various oil discharge monitoring equipment, as applicable (reg. 31 Annex I MARPOL 90/04);

9. Checking that the ship is allowed continued operation according to the phase-out scheme of reg. 20 Annex I MARPOL 90/04.

10. Confirming, when applicable, that the approved STS operations Plan is available on board (reg. 41, Annex I to MARPOL 90/04).

11. Verifying that, if applicable, the oil discharge monitoring equipment has been calibrated and that a valid calibration certificate is available on board (for installations complying with resolution MEPC. 108(49) as amended by IMO resolution MEPC.240(65)).

5.4.3 The renewal survey for the International Oil Pollution Prevention Certificate shall additionally include

1. Examining externally the oil filtering equipment and confirming, as far as practicable, its satisfactory operation including, when appropriate, testing the operation of the automatic means provided to stop the discharge of effluent and the alarm for the oil filtering equipment (Reg. 14 and 15 Annex I MARPOL 90/04);

2. Testing, where fitted, the oil filtering equipment required for discharge in special areas (Reg. 15 Annex I MARPOL 90/04);

3. Confirming the segregation of oil fuel and water ballast systems and that the arrangements prohibit the carriage of oil in forepeak tanks or in spaces forward of the collision bulkheads (Reg. 16 Annex I MARPOL 90/04);

4. Checking that the arrangement of oily residue (sludge) tank and its discharge arrangements are satisfactory and confirming that, where applicable, homogenizers, sludge incinerators or other recognized means for the control of sludge are satisfactory (Reg. 12 Annex I MARPOL 90/04);

5. Confirming that a standard discharge connection is provided (Reg. 13, Annex I to MARPOL 90/04).

6. Examining the oily-water separating equipment or oil filtering equipment or process unit, where fitted, including associated pumps, piping and valves for wear and corrosion (regs. 14 and 15, Annex I to MARPOL 90/04);

7. Examining the oil content meter (15 ppm alarm and bilge monitor) for obvious defects, deterioration or damage and checking the record of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (reg. 14 Annex I MARPOL 90/04).

8. Confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oily-water separating equipment or oil filtering equipment (reg. 14, Annex I to MARPOL-90/04);

9. Confirming, if necessary by simulated test or equivalent, the satisfactory operation of the 15 ppm bilge alarm and the operation of the automatic means provided to stop the discharge of effluent (reg. 14 and 31, Annex I to MARPOL-90/04);

10. Confirming the satisfactory operation of sludge incinerators (5.6 of MEPC.l/Circ.511), when the size of oily residue (sludge) tank is approved on the basis of such installations (reg. 12, Annex I to MARPOL-90/04);

11. Confirming the satisfactory operation of homogenizers, sludge incinerators or other recognized means for the control of sludge when the size of oily residue (sludge) tank is approved on the basis of such installations (reg. 12, Annex I to MARPOL-90/04).

5.4.4 For oil pollution prevention the Renewal Survey of the additional requirements for oil tankers shall consist of:

1. Examining the oil discharge monitoring and control system and its associated equipment (reg. 31, Annex I to MARPOL 90/04) and, in particular:

    1.1. examining externally the system and equipment and, if applicable, verifying that the instrument is properly sealed;
    1.2. confirming, as far as practicable, the satisfactory operation of the oil discharge monitoring and control system including the oil content meter and, where applicable, the automatic and manual means provided to stop the discharge of effluent and the starting interlock;
    1.3. observing that indicators and recording devices are operable and verifying that sufficient supply of consumables for the recorders is available on board;
    1.4. testing, as far as practicable, any audible and visual alarms fitted to the oil discharge monitoring and control system;

2. Examining, as far as practicable, the oil/water interface detectors in the slop and other tanks (reg. 32 Annex I MARPOL 90/04);

3. Confirming that no cross-connections have been fitted between the cargo and segregated ballast systems (reg. 18 Annex I MARPOL 90/04);

4. Where a portable spool piece is provided for the emergency discharge of segregated ballast by connecting the segregated ballast system to a cargo pump, confirming that non-return valves are fitted on the segregated ballast connections and that the spool piece is mounted in a conspicuous position in the pump room with a permanent notice restricting its use (reg. 18 Annex I MARPOL 90/04);

5. Confirming by examining that there has been no contamination with oil in the segregated ballast tanks (reg. 18 Annex I MARPOL 90/04);

6. Confirming, as far as practicable, that the dedicated clean ballast tank arrangement remains satisfactory (reg. 18 Annex I MARPOL 90/04);

7. Confirming by examining that there has been no contamination with oil in the clean ballast tanks (reg. 18 Annex I MARPOL 90/04);

8. Confirming, as far as practicable, that the crude oil washing system remains satisfactory (reg. 18 Annex I MARPOL 90/04) and, in particular:

    8.1. Externally the crude oil washing piping, pumps, valves and deck mounted washing machines for signs of leakage and checking that all anchoring devices for crude oil washing piping are intact and secure;

    8.2. Confirming, in those cases where drive units are not integral with the tank cleaning machines, that the number of operational drive units as specified in the Manual are on board;

    8.3. Checking that, when fitted, steam heaters for water washing can be properly isolated during crude oil washing operations, either by double shut-off valves or clearly identifiable blanks ;

    8.4. Checking that the prescribed means of communication between the deck watch keeper and the cargo control position is operational;

    8.5. Confirming that an overpressure relief device (or other approved arrangement) is fitted to the pumps supplying the crude oil washing systems;

    8.6. Confirming that flexible hoses for supply of oil to the washing machines on combination carriers, are of an approved type, are properly stored and are in good condition;

9. Certifying, where applicable and as far as practicable, the effectiveness of the crude oil washing system (reg. 18 Annex I MARPOL 90/04) and, in particular:

    9.1. Checking tanks containing departure and/or arrival ballast water, as applicable, to confirm the effectiveness of the cleaning and stripping;

    9.2. Checking, as far as practicable, that the crude oil washing machines are operable and, when the survey is carried out during crude oil washing operations, observing the proper operation of the washing machines by means of the movement indicators and/ or sound patterns or other approved methods;

9.3. Checking, as far as practicable, the effectiveness of the stripping system in appropriate cargo tanks by observing the monitoring equipment and by handdipping or other approved means;

10. Confirming that on those existing tankers that operate with special ballast arrangements, the arrangements are as approved and are satisfactory (reg. 18 Annex I MARPOL 90/04);

11. Confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are approved and are satisfactory (Regs. 19 to 22 Annex I MARPOL 90/04), see also 2.2.6;

12. Examining the piping system associated with the discharge of dirty ballast or oil-contaminated water including the part flow system if fitted (reg.30 Annex I MARPOL 90/04);

13. Testing the communication system between the observation and discharge control positions (reg. 30 Annex I MARPOL 90/04);

14. Examining the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore (reg. 30 Annex I MARPOL 90/04);

15. Confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore-based damage stability and residual structural strength computerized calculation programmes (reg.37.4 Annex I MARPOL 90/04).

16. Examining the oil discharge monitoring and control system and the oil content meter for obvious defects, deterioration or damage, and to check checking the record or of calibration of the meter when done in accordance with the manufacturer's operational and instruction manual (reg. 3 Annex I MARPOL 90/04);

17. Confirming the satisfactory operation of the oil/water interface detectors in slop and other tanks (reg.32 Annex I MARPOL 90/04);

18. For the crude oil washing requirements (reg. 33, Annex I to MARPOL 90/04):

18.1. Examining the crude oil washing piping outside the cargo tanks. If upon examination there is any doubt as to its condition, the piping may be required to be pressure tested, gauged or both. Particular attention shall be paid to any repairs such as welded doublers;

18.2. Confirming the satisfactory operation of the isolating valves to steam heaters for washing water, when fitted;

18.3. Examining at least two selected cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems. If the tank cannot be gas-freed for the safe entry of the surveyor, an internal examination shall not be conducted. In this case the examination may be conducted in conjunction with the internal examination of the cargo tanks (see 2.1.2.3.3.3);

19. Examining the manual and/or remote operation of the individual tank valves (or other similar closing devices) to be kept closed at sea (regs.23 and 26 Annex I MARPOL 90/04).

20. Confirming that the arrangements of slop tanks or cargo tanks designated as slop tanks and associated piping systems are satisfactory (regs. 29 and 34, Annex I to MARPOL-90/04);

21. Confirming, if necessary by simulated test or equivalent, the satisfactory operation of the oil discharge monitoring and control system and its associated equipment, including the oil/ water interface detectors (regs. 31 and 32, Annex I to MARPOL 90/04);

22. Confirming that the arrangements of pumps, pipes and valves are in accordance with the requirements for SBT systems (reg. 18, Annex I to MARPOL 90/04);

23. Confirming that the arrangements of pumps, pipes and valves are in accordance with the Revised Specifications for Oil Tankers with Dedicated Clean Ballast Tanks (reg. 18, Annex I to MARPOL-90/04);

24. Confirming that the crude oil washing system is in accordance with the requirements for such systems (reg. 33, Annex I to MARPOL-90/04) and, in particular:

24.1 carrying out pressure testing of the crude oil washing system to at least the working pressure;

24.2 examining the cargo tanks for the express purpose of verifying the continued effectiveness of the installed crude oil washing and stripping systems;

24.3 examining internally, when fitted, the isolating valves for any steam heaters;

25 Verifying, by internal tank inspection or by another alternative method acceptable to the Administration, the effectiveness of the crude oil washing system.

If the tank cannot be gas-freed for the safe entry of the surveyor, an inner examination shall not be conducted.

An acceptable alternative would be satisfactory results during the surveys required by 2.2.1.2.4.9 (reg. 33, Annex I to MARPOL-90/04);

26 Confirming that there is no leakage from those ballast pipelines passing through cargo tanks and those cargo pipelines passing through ballast tanks (regs. 18 and 33, Annex I to MARPOL 90/04));

27 Confirming that the pumping, piping and discharge arrangements are satisfactory (reg. 30, Annex I to MARPOL 90/04)):

27.1 Confirming that the piping systems associated with the discharge of dirty ballast water or oil contaminated water are satisfactory;

27.2 confirming that the means of draining cargo pumps and cargo lines, including the stripping device and the connections for pumping to the slop or cargo tanks or ashore are satisfactory;

27.3 confirming that the arrangements for the part flow system, where fitted, are satisfactory;

28 Confirming that closing devices installed in the cargo transfer system and cargo piping as appropriate are satisfactory (regs. 23 and 26, Annex I to MARPOL-90/04));

29 Confirming, as appropriate and as practicable, that the arrangements for the prevention of oil pollution in the event of collision or stranding are satisfactory (regs. 19 to 22, Annex I to MARPOL 90/04));

30 Confirming for oil tankers of 5,000 tonnes deadweight and above that arrangements are in place to provide prompt access to shore based damage stability and residual structural strength computerized calculation programmes (reg. 37.4, Annex I to MARPOL 90/04)).

5.4.5 For oil pollution prevention the completion of the renewal survey shall consist of:

For oil pollution prevention the completion of the renewal survey shall consist of, after a satisfactory survey, issuing the International Oil Pollution Prevention Certificate.