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The Minister of Tourism and Transport, in exercise of the powers conferred by section 122 of the Merchant Shipping Act 2002, makes the following Regulations:

PART I GENERAL

Citation

1 These Regulations may be cited as the Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2005.

Interpretation

2 In these Regulations —

"administration" means the Government of the State under whose authority the ship is operating;

"anniversary date" means the date in each year corresponding to the date of the expiry of the IAPP Certificate;

"ASTM method" means the methods laid down by the American Society for Testing and Materials in the 1976 edition of the standard definitions and specifications for petroleum and lubricating products;

"appropriate reception facilities" means facilities established in accordance with the Convention;

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"Bermuda ship" has the same meaning as in section 16(3) of the Merchant Shipping Act 2002;

"Bermuda waters" means the sea or other waters within the seaward limits of the territorial sea of Bermuda;

"Certifying Authority" means the Minister or any persons authorised by the Minister;

"Convention" means the International Convention for the Prevention of Pollution from Ships 1973, including its Protocols, Annex VI (but no other Annex) and Appendices thereto, as amended by the Protocol of 1997 to that Convention and includes all amendments adopted by the organisation's Marine Environment Protection Committee up to 26th September 1997 and any further amendments considered by the Minister to be relevant;

"continuous feed" means the process whereby waste is fed into a combustion chamber without human assistance while the incinerator is in normal operating conditions with the combustion chamber operative between 850°C and 1200°C;

"controlled waters" means the waters specified as areas within which the jurisdiction and rights of Bermuda are exercisable by the Merchant Shipping (Prevention of Pollution) (Limits) Regulations 2004;

"Convention country" means a country which is a party to the Convention;

"EEA State" means a state which is a contracting party to the Agreement on the European Economic Area signed at Oporto on 2nd May 1992 as adjusted by the Protocol signed at Brussels on 17th March 1993;

"EIAPP Certificate" means the Engine International Air Pollution Prevention Certificate issued in accordance with the Convention;

"emission" means any release of substances, subject to control by these Regulations, from ships into the atmosphere or sea;

"flag state" means the State whose flag a ship is entitled to fly;

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

"garbage" means all kinds of victual, domestic and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically;

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"gas oil" means —

- (a) any petroleum derived liquid fuel falling within CN code 2710 00 67 to 2710 00 68; or
- (b) any petroleum derived liquid fuel which, by reason of its distillation limit, falls within the category of middle distillates intended for use as fuel and of which at least 85 per cent by volume (including losses) distills at 350°C by the ASTM D86 method;

"Government ship" has the meaning given under section 4 of the Merchant Shipping Act 2002;

"GT" means gross registered tonnage and the gross registered tonnage of a ship having alternative gross registered tonnages shall be taken to be the larger of those tonnages;

"IAPP Certificate" means a certificate entitled the International Air Pollution Prevention Certificate issued in accordance with the Convention;

"IMO" means the International Maritime Organization;

"ISO" means International Organisation for standardisation;

"major conversion" means a modification of an engine where —

- (a) the engine is replaced by a new engine built on or after the 1st January 2000; or
- (b) any substantial modification, as defined in the NO_x Technical Code, is made to the engine; or
- (c) the maximum continuous rating of the engine is increased by more than 10 per cent;

"marine gas oil" means fuels intended for marine use which are gas oil or which have viscosity or density defined falling within the ranges of viscosity or density defined for maritime distillates in Table 1 of ISO 8217 (1996);

"new installations" means the installation of systems, equipment, including new portable fire extinguishing units, insulation, or other material on a ship after 19th May 2005, but excludes repair or recharge of previously installed systems, equipment, insulation, or other material, or recharge of portable fire extinguishing units;

"NO_x Technical Code" means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by Conference resolution 2 and includes any document amending it which is considered by the Minister to be relevant from time to time;

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"oil record book" means the oil book required by the International Convention for the Prevention of Pollution from ships 1973, including its protocols;

"ozone-depleting substances" means controlled substances defined in paragraph 4 of article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A, B, C or E to the said Protocol;

"Protocol of 1997" means the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships 1973, as amended by the Protocol of 1978 relating thereto;

"sea" includes any estuary or arm of the sea;

"shipboard incineration" means the incineration of wastes or other matter on board a ship, if such wastes or other matter were generated during the normal operation of the ship;

"shipboard incinerator" means a shipboard facility designed for the primary purpose of incineration;

"ship" means a vessel of any type whatsoever and includes hydrofoils, boats, hovercraft, submersibles, floating craft, fixed and floating platforms operating in the marine environment beyond the limits of controlled waters;

"ships constructed" means ships the keels of which are laid or which are at a similar stage of construction;

"significant alteration" includes any change or adjustment to the systems, fittings or arrangement of a diesel engine which results in the nitrogen oxide limits applied to that engine no longer being complied with;

"similar stage of construction" means the stage at which —

- (a) construction identifiable with a specific ship begins; and
- (b) assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less;

"sludge oil" means sludge from fuel or lubricating oil separators, waste lubricating oil from main or auxiliary machinery, or waste oil from bilge water separators, oil filtering equipment or drip trays;

"surveyor" means a surveyor appointed by a Certifying Authority;

"tanker" means —

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- (a) an oil tanker being a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces and includes combination carriers and a chemical tanker referred to in sub-paragraph (b) when it is carrying a cargo or part cargo of oil in bulk; and
- (b) a chemical tanker being a ship constructed or adapted primarily to carry a cargo of noxious liquid substances in bulk and includes an oil tanker referred to in sub-paragraph (a) when carrying a cargo or a part cargo of noxious liquid substances in bulk.

Applications and exemptions

3 (1) Unless expressly provided otherwise, these Regulations apply to —

- (a) Bermuda ships;
 - (b) other ships while they are within Bermuda waters; and
 - (c) Government ships registered in Bermuda and Government ships not so registered but held for the purpose of Her Majesty's Government in Bermuda.
- (2) These Regulations do not apply to —
- (a) any warship, naval auxiliary or other ship owned or operated by a State and used, for the time being, only on government, non-commercial service; or
 - (b) any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or
 - (c) any emission resulting from damage to a ship or its equipment —
 - (i) provided all reasonable precautions have been taken after the occurrence of the damage or discovery of the emission for the purpose of preventing or minimising the emission; or
 - (ii) except if the owner or master acted either with the intent to cause damage, or recklessly and with knowledge that damage would probably result;
 - (d) any emission from any ship arising directly from the exploration, exploitation and associated offshore processing of sea-bed mineral resources, including but not limited to the flaring of hydrocarbons and the burning of cuttings, muds and stimulation fluids during well completion and testing operations, and flaring

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arising from upset conditions; the release of gases and volatile compounds entrained in drilling fluids and cuttings;

- (e) emissions associated solely and directly with the treatment, handling or storage of sea-bed minerals; and
- (f) emissions from diesel engines that are solely dedicated to the exploration, exploitation and associated off-shore processing of sea-bed mineral resources.

(3) Nothing in these Regulations affects the prohibitions in, or other requirements of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended, and the Protocol thereto.

Equivalents

4 The Minister may permit any fitting, material, appliance or apparatus to be fitted in a ship as an alternative to that required by these Regulations if such fitting, material, appliance or apparatus is at least as effective as that required by these Regulations.

PART II SURVEYS AND CERTIFICATES

Initial and renewal surveys

5 (1) The owner of a Bermuda ship of 400 GT and above shall cause the same to be subject to —

- (a) an initial survey before the ship is put into service or before an IAPP Certificate in respect of that ship is issued for the first time;
- (b) a renewal survey within five years of an initial survey and at intervals not exceeding 5 years thereafter.

(2) The surveyor shall survey the ship and satisfy himself that its equipment, systems, fittings, arrangements and material are in accordance with the requirements of these Regulations.

Annual surveys

6 (1) The owner of a Bermuda ship in respect of which an IAPP Certificate has been issued shall, so long as the certificate remains in force, cause the ship to be subject to an annual survey, which shall be carried out within three months before or after the anniversary date of the Certificate, provided that no annual survey shall be required when the intermediate survey pursuant to regulation 7 is carried out within three months before or after the anniversary date of the Certificate.

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(2) The surveyor shall survey the ship and satisfy himself that the equipment, systems, fittings, arrangements and material are in accordance with the requirements of these Regulations.

(3) On completion of the survey the surveyor shall, if it is in order to do so, endorse the Certificate to that effect.

Intermediate survey

7 (1) The owner of a Bermuda ship in respect of which an IAPP Certificate has been issued shall so long as the Certificate remains in force, cause the ship to be subject to an intermediate survey in accordance with paragraphs (2) and (3) during the validity of the Certificate.

(2) The intermediate survey shall take place within 3 months before or after the second or third anniversary date of the Certificate.

(3) The surveyor shall survey the ship and satisfy himself that the equipment, systems, fittings, arrangements and material are in accordance with the requirements of these Regulations and are in good working order.

(4) On completion of the survey the surveyor shall, if it is in order to do so, endorse the Certificate to that effect.

Issue and duration of certificates

8 (1) When it is in order to do so the Certifying Authority shall issue an appropriate Certificate which is an IAPP Certificate for any Bermuda ship of 400 GT and above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention.

(2) The Minister may request through a proper officer, or otherwise, the Government of a Convention country to survey a Bermuda ship and, if satisfied that the provisions of the Convention are complied with, to issue or authorise the issue of the IAPP Certificate to the ship.

(3) An IAPP Certificate so issued shall contain a statement that it has been issued in accordance with such a request, and it shall have the same effect as an IAPP Certificate issued under paragraph (1).

(4) The Minister may at the request of a Government of a Convention country survey a ship registered in that State and if satisfied that the provisions of the Convention are complied with, issue an IAPP Certificate to that ship; a Certificate so issued in accordance with such a request shall contain a statement that it has been so issued and shall have the same effect as if it was issued by that Government and not by the Minister.

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(5) The IAPP Certificate shall be in the form prescribed by the Convention and shall be valid for a period not exceeding five years from the date of issue.

(6) An IAPP Certificate shall cease to be valid —

(a) if without the approval of a Certifying Authority significant alteration has been made to the equipment, systems, fittings, arrangements or material required by these Regulations, other than the direct replacement of such equipment, systems, fittings, arrangements and materials; or

(b) the surveys are not conducted as required by regulations 5, 6 and 7; or

(c) upon the transfer of the ship to the flag of another State.

(7) The appropriate Certificate issued pursuant to paragraph (1), shall be kept on board the ship to which it has been issued and shall be available for inspection at all reasonable times.

(8) Bermuda ships constructed before 19th May 2005 shall obtain an IAPP Certificate not later than the first scheduled dry-docking after that date, but in any event not later than 19th May 2008.

Responsibilities of owner and master

9 (1) The owner and master of a Bermuda ship or any foreign ship while in Bermuda waters shall ensure that —

(a) the condition of the ship and its equipment are maintained so as to comply with the relevant provisions of these Regulations; and

(b) after any survey of a Bermuda ship required by these Regulations has been completed no material change is made in the equipment, systems, fittings, arrangements or material subject to such survey without the approval of the Minister, other than the direct replacement of fittings or equipment that conform to these Regulations.

(2) Whenever a Bermuda ship is involved in an accident or a defect is discovered, either of which affects the efficiency or completeness of the ship's equipment to which these Regulations relate the master (or if the master fails to do so) the owner shall report it at the earliest opportunity to the Minister or a proper officer, either of whom may require such a survey to be carried out.

(3) Without prejudice to any other action he may take, the Minister may request the authority responsible for issuing the IAPP Certificate to any ship which is for the time being in a Bermuda port to carry out such surveys and inspections as it may consider to be

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necessary to establish that the condition of the ship is such that it can proceed to sea without presenting an unreasonable threat of harm to the environment.

Procedure to be adopted when corrective action is necessary

10 (1) In any case where the Certifying Authority determines that the condition on a Bermuda ship or its equipment does not correspond with the particulars of the IAPP 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, the Certifying Authority shall advise the owner or the master of the corrective action which in its opinion is required, and shall give notice thereof to the Minister.

(2) If such corrective action is not taken within such period (being a reasonable period) as the Certifying Authority may specify, the Certifying Authority shall, at the end of that time, immediately notify the Minister who may, on receipt of such notification, suspend the validity of the IAPP Certificate issued to the ship and shall give notice of any such suspension to the owner and to the Certifying Authority.

(3) The master shall thereupon deliver up the Certificate issued to the Certifying Authority on demand.

(4) Where a ship is in the port of a Convention country and corrective action in accordance with paragraph (1) has not been taken, the Certifying Authority shall in addition immediately notify the appropriate authorities in the country in which the port is situated.

(5) Where, in the case of a ship of a Convention country which is for the time being in a Bermuda port, the nominated surveyor or the certifying authority responsible for issuing the IAPP Certificate to the ship determines that it is necessary to withdraw the certificate, a report shall, unless made by the nominated surveyor or certifying authority, be made by the master of the ship to the Minister who may then take such steps as will ensure that the ship shall not sail until it can proceed to sea or leave port for the purposes of proceeding to the nearest appropriate repair yard available without presenting an unreasonable threat of harm to the marine environment.

PART III CONTROL OF EMISSIONS FROM SHIPS

Ozone-depleting substances

11 (1) Subject to regulation 3(2)(a), (b) and (c), this regulation applies to Bermuda ships; and subject to regulation 21 any other ship wherever it may be.

(2) Any deliberate emission of ozone-depleting substances from ships is prohibited.

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(3) For the purposes of this regulation deliberate emission include emission occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment, but shall not include minimal releases associated with the recapture or recycling of an ozone-depleting substance.

(4) No new installations on ships shall contain ozone-depleting substances except that new installations containing hydrochlorofluorocarbons are permitted until 1st January 2020.

(5) Ozone-depleting substances and equipment containing such substances shall be delivered to appropriate reception facilities when removed from ships.

Nitrogen oxides

12 (1) Subject to regulation 3(2)(a), (b) and (c) and Schedule 1, this regulation applies to diesel engines referred to in paragraph (2) which are installed on Bermuda ships; and subject to regulation 21 any other ship wherever it may be.

(2) The diesel engines to which this regulation applies are —

(a) every diesel engine with a power output of more than 130 kW which is installed on a ship falling within paragraph 1(a) or (b) constructed on or after 1st January 2000; and

(b) each diesel engine installed on a ship falling within paragraph 1(a) or (b) with a power output of more than 130kW which undergoes a major conversion on or after 1st January 2000.

(3) This regulation does not apply to any ship, engine or component referred to in Schedule 1.

(4) The nitrogen oxide emission resulting from any major conversion shall be documented in accordance with the NO_x Technical Code and approved by the Certifying Authority in accordance with Schedule 2.

(5) The operation of each diesel engine to which this regulation applies is prohibited, except where the emission of nitrogen oxide (calculated as the total weighted emission of NO₂) from the engine is within the following limits —

(a) 17.0 g/kWh when n is less than 130 rpm;

(b) $45.0 \times n^{-0.2}$ g/kWh when n is 130 or more but less than 2000 rpm;

(c) 9.8 g/kWh when n is 2000 rpm or more,

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where n = rated engine speed (crankshaft revolutions per minute).

(6) When using fuel composed of blends from hydrocarbons derived from petroleum refining test procedure and measurement methods shall be in accordance with the NO_x Technical Code.

(7) Notwithstanding paragraph (5) the operation of a diesel engine is permitted when either an exhaust gas cleaning system or any other equivalent method is approved by the Certifying Authority.

Sulphur oxides

13 (1) This regulation applies to Bermuda ships; and subject to regulation 21 any other ship wherever it may be.

(2) Subject to paragraph (3) the sulphur content of any fuel oil used on board a ship, other than marine gas oil being used on board a ship within the waters of an EEA State, shall not exceed 4.5 per cent by mass.

(3) While a ship is within a sulphur oxide emission control area 12 months after the date specified in paragraph (7)(a) or (b) at least one of the following conditions shall be satisfied —

- (a) the sulphur content of any fuel oil used on board the ship, other than marine gas oil being used within the waters of an EEA State, shall not exceed 1.5 per cent by mass; or
- (b) an exhaust gas cleaning system shall be applied to reduce the total emission of sulphur oxide, including both auxiliary and main propulsion engines, to 6.0g SO_x K/w h or less calculated as the total weight of sulphur dioxide emission; (such system shall be approved by the administration);
- (c) any other technological method to limit sulphur oxide emissions that has been approved by the administration.

(4) Ships using separate fuel oils to comply with paragraph 3(a) shall —

- (a) allow sufficient time for the fuel oil service system to be fully flushed of all fuels exceeding 1.5 per cent by mass sulphur content prior to entry into a sulphur oxide emission control area; and
- (b) record the date, time and position of the ship when any fuel changeover operation is completed and the volume of low sulphur fuel oils of less than or equal to 1.5 per cent by mass in each tank.

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(5) The record made pursuant to paragraph (4)(b) shall be made —

(a) in the ship's oil record book for ships over 400 GT and oil tankers over 150 GT;

(b) for any other ship in the ship's log book.

(6) Waste streams from the use of equipment approved pursuant to paragraph (3)(b) shall be discharged into enclosed ports, harbours or estuaries in accordance with the Convention.

(7) In this regulation "sulphur oxide emission control area" means —

(a) from 19th May 2005 the Baltic sea proper with the Gulf of Bothnia and the Gulf of Finland and the entrance to the Baltic Sea bounded by the parallel 57° and 44° 8' N east of the Skaw in the Skagerrak; and

(b) any other sea areas including port areas designated as a sulphur oxides emission control area.

Volatile organic compounds

14 (1) Any harbour authority or terminal operator within Bermuda operating a vapour emission control system for volatile organic compounds shall comply with Schedule 3.

(2) Any Bermuda tanker subject to vapour emission control in a port or terminal notified to the International Maritime Organisation as a designated port or terminal pursuant to the Convention shall comply with Schedule 3.

(3) This regulation shall only apply to gas carriers when the type of loading and containment systems allow safe retention of non-methane volatile organic compounds on board or their safe return ashore.

Shipboard incineration

15 (1) Paragraph (4) applies to Bermuda ships only.

(2) Subject to paragraph (6), all shipboard incineration shall, take place in a shipboard incinerator.

(3) Except as provided in paragraph (4), each incinerator installed on board a ship, on or after 1st January 2000, shall comply with the Convention.

(4) The Minister may exclude the application of paragraph (3) to any incinerator which is installed on board a ship before 19th May 2005 provided the ship is solely engaged in voyages within Bermuda waters.

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(5) Shipboard incineration of the following substances shall be prohibited —

- (a) the residues of any substances or materials referred to in annex I, II or III of the Convention which have been carried as cargo in the ship and any related contaminated packing materials;
- (b) polychlorinated biphenyls;
- (c) garbage containing more than traces of heavy metals; and
- (d) refined petroleum products containing halogen compounds.

(6) Shipboard incineration of sewerage sludge and sludge oil generated during the normal operation of a ship may also take place in the main or auxiliary power plant or boilers, but in those cases shall not take place in ports, harbours or estuaries.

(7) Shipboard incineration of polyvinyl chlorides shall be prohibited unless the incineration takes place in a ship incinerator for which IMO Type Approval Certificates have been issued.

(8) All ships with incinerators subject to this regulation shall possess a manufacturer's operating manual which shall specify how to operate the incinerator within the limits described in the Convention.

(9) Personnel responsible for the operation of any incinerator shall be trained and capable of implementing the guidance provided in the manufacturer's operating manual.

(10) Combustion flue gas outlet temperatures shall be monitored at all times and the waste shall not be fed into a continuous feed shipboard incinerator when the temperature is below 850°C.

(11) Batch-loaded shipboard incinerators shall be designed so that the temperature in the combustion chamber shall reach 600°C within 5 minutes of start up.

(12) The Minister may approve the design, installation and operation of alternative shipboard thermal waste treatment devices that meet or exceed the requirements of this regulation.

Fuel oil quality

16 (1) This regulation does not apply to —

- (a) coal in its solid form;
- (b) nuclear fuels; or

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- (c) hydrocarbons which are produced and subsequently used on site on platforms as fuel when approved by the Minister.
- (2) Fuel oil for combustion purposes delivered to and used on board ships to which these Regulations apply shall meet the requirements of paragraphs (3) to (10).
- (3) Where the fuel is blends of hydrocarbons derived from petroleum refining, it —
 - (a) may if it incorporates additives intended to improve some aspects of performance incorporate only small amounts of such additives;
 - (b) shall be free from inorganic acid;
 - (c) shall not include any added substance or chemical waste which either —
 - (i) jeopardises the safety of the ship or adversely affects the performance of the machinery; or
 - (ii) is harmful to personnel; or
 - (iii) contributes overall to additional air pollution.
- (4) Fuel oil for combustion purposes derived by methods other than petroleum refining shall not —
 - (a) exceed the sulphur content limits in regulation 13;
 - (b) cause an engine to exceed the nitrogen oxide emission limits of regulation 12(5);
 - (c) contain inorganic acid;
 - (d) jeopardise the safety of the ship or adversely affect the performance of the machinery;
 - (e) be harmful to personnel; or
 - (f) contribute overall to additional air pollution.
- (5) A local supplier of fuel oil, for combustion purposes delivered to and used on board ships of 400 GT and above, shall —
 - (a) register with the Minister;
 - (b) provide that ship with a bunker delivery note containing the information set out in Schedule 4;
 - (c) provide a declaration in the bunker delivery note that is signed by the fuel oil supplier's representative that the fuel oil supplied conforms with regulation 13(2) or 13(3)(a) and paragraphs (2) and (3); and

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- (d) retain a copy of the bunker delivery note for 3 years from the date of delivery for inspection and verification.
- (6) The manager or owner of a ship over 400 GT shall ensure that the bunker delivery note is —
 - (a) kept on board the ship in a place so as to be readily available for inspection at all reasonable times; and
 - (b) retained for a period of 3 years from the day on which the fuel oil has been delivered on board.
- (7) The local supplier of fuel oil, for combustion purposes delivered to or used on board ships of 400 GT and above, shall provide a representative sample of the fuel oil delivered to accompany the bunker delivery note and that sample shall —
 - (a) be collected in accordance with any guidelines developed by the IMO or accepted by the Minister as equivalent;
 - (b) on completion of bunkering operations be sealed and signed by the local supplier's representative and the master or officer in charge of the bunker operation; and
 - (c) be retained under the control of the ship until the fuel oil is substantially consumed, but in any case for a period of not less than 12 months from the day of delivery.
- (8) The bunker delivery note and the sample of fuel oil required under paragraphs (4) and (5) shall be available for inspection at all times.
- (9) The Minister may inspect the bunker delivery notes and samples of fuel oil held by ships of other Parties to the Convention while those ships are in a port or offshore terminal within Bermuda waters.
- (10) In this regulation —
 - (a) "fuel oil supplier" means the supplier of fuel oil to the local supplier of fuel oil;
 - (b) "fuel oil supplier's representative" means the person appointed by a fuel oil supplier to provide a declaration that the fuel supplied complies with regulations 13(2)(a) and paragraphs (2) and (3);
 - (c) "local supplier of fuel oil" means the person who receives the fuel oil from the fuel oil supplier; and
 - (d) "local supplier's representative" means the person who delivers the fuel oil to the ship on behalf of the local supplier of fuel oil.

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PART IV

**POWER TO INSPECT, DENY ENTRY, DETENTION AND
PENALTIES**

Power to inspect

17 (1) A ship to which these Regulations apply shall be subject, in any Bermuda port or offshore terminal, to inspection by persons appointed by the Minister.

(2) Any such inspection shall be limited to verifying that there is on board a valid IAPP Certificate in the form prescribed by the Convention, unless there are clear grounds for believing that the condition of the ship or its equipment does not correspond substantially with the particulars of that Certificate.

(3) If the ship does not carry a valid Certificate or its equipment does not correspond substantially with the particulars of that Certificate, the inspector shall take such steps as he may consider necessary to ensure that the ship shall not sail until it can proceed to sea without presenting an unreasonable threat of harm to the marine environment, but the Minister may in such a case permit the ship to leave the port or offshore terminal for the purposes of proceeding to the nearest appropriate repair yard.

(4) Notwithstanding paragraph 2, and without prejudice to any specific control provisions over operational procedures provided for in these Regulations, the inspector may —

- (a) investigate any operation regulated by these Regulations if there are clear grounds for believing that the master or crew are not familiar with essential ship board procedures for preventing pollution by air; and
- (b) in the event of any such inspection revealing deficiencies the inspector shall take such steps to ensure that the ship will not sail until the situation has been brought to order in accordance with the requirements of these Regulations.

(5) Upon receiving evidence that a particular ship has caused pollution by air contrary to these Regulations the Minister shall cause the matter to be investigated and shall inform the State which has reported the contravention, as well as the International Maritime Organisation, of the action taken.

(6) For the purposes of this regulation any person appointed as an inspector shall have the powers of an inspector set out in sections 219 and 220 of the Merchant Shipping Act 2002.

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Power to deny entry and detain

18 (1) If a harbour master has reason to believe that a ship which he believes proposes to enter the harbour does not comply with the requirements of these Regulations, he shall immediately report the matter to the Minister who, if he is satisfied that the ship presents an unreasonable threat of harm to the marine environment, may deny entry of such ship to Bermuda ports or offshore terminals.

(2) In any case where a ship to which these Regulations apply is suspected of a contravention of the requirements of these Regulations, the ship shall be liable to be detained.

(3) Where a ship is liable to be detained under these Regulations, section 242 of the Merchant Shipping Act 2002 (which relates to the detention of a ship) shall apply as if for the words "this Act" where they appear, there are substituted "the Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2005".

(4) Where a ship other than a Bermuda ship is —

(a) denied entry pursuant to paragraph (1); or

(b) detained pursuant to paragraph (2),

the Minister shall immediately inform the flag State of the ship or the appropriate authorities of that State.

Offences

19 (1) If any ship fails to comply with any requirement of these Regulations, the owner and master of that ship commit an offence and are punishable on summary conviction by a fine not exceeding \$10,000.00 and on conviction on indictment by a fine not exceeding \$20,000.00.

(2) If a local fuel oil supplier or a local fuel oil supplier's representative fails to comply with any requirement under these Regulations or makes a false declaration in the bunker delivery note, each of them commits an offence and is punishable on summary conviction by a fine not exceeding \$10,000.00 and on conviction on indictment by a fine not exceeding \$20,000.00.

(3) It shall be a defence for a person charged under paragraph (1) or (2) to show that he took all reasonable precautions and exercised all due diligence to avoid the commission of the offence.

(4) Where an offence under this regulation is committed, or would have been committed save for the operation of paragraph (3), by any person due to the act or default of some other person, that other person commits the offence, and a person may be charged with and convicted for an offence by virtue of this paragraph whether or not proceedings are taken against the first mentioned person.

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Offences by corporate bodies

20 (1) Where a body corporate commits an offence under these Regulations and that offence is proved to have been committed with the consent or connivance of, or to be attributable to any neglect on the part of —

(a) any director, manager, secretary or other similar officer of the body corporate; or

(b) a person who was purporting to act in such capacity,

he as well as the body corporate commit that offence and are liable to be proceeded against and punished accordingly.

(2) Where the affairs of a body corporate are managed by its members, paragraph (1) shall apply in relation to the acts and defaults of a member in connection with his functions of management as if he were a director of the body corporate.

(3) Where an offence under these Regulations committed by a partnership is proved —

(a) to have been committed with the consent or connivance of; or

(b) to be attributable to any neglect on the part of,

a partner, he as well as the partnership shall be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Restriction on jurisdiction over offences outside Bermuda limits

21 (1) No proceedings for an offence of contravening regulations 11, 12, 13, 14 or 15 by a ship which is not a Bermuda ship, which relates to an emission in the internal waters, Territorial Waters or Exclusive Economic Zone of another State shall be instituted unless —

(a) that State, the flag state or a State damaged or threatened by the emission requests that proceedings be taken; or

(b) the emission has caused or is likely to cause pollution in controlled waters or Bermuda waters.

(2) Where proceedings for an offence of contravening regulation 11, 12, 13, 14 or 15 by a ship which is not a Bermuda ship which relates to an emission in the internal waters, Territorial Sea or Exclusive Economic Zone of another State have been instituted but not concluded, and that State requests suspension of the proceedings, then —

(a) proceedings shall be suspended; and

(b) the Minister shall transmit all the evidence and court records and documents relating to the case to that State.

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(3) It shall be a defence to a person charged with contravening regulation 11, 12, 13, 14 or 15 for the defendant to show —

- (a) that the ship is not a Bermuda ship; and
- (b) the discharge took place outside controlled waters or Bermuda waters; and
- (c) the ship was in a port of Bermuda at the time of the institution of proceedings by reason only of stress of weather or other reason beyond the control of the master or owner or charterer.

Suspension of proceedings at flag state request

22 (1) This regulation relates to an alleged offence of contravening regulations 11, 12, 13, 14 or 15 by a ship which is not a Bermuda ship, in relation to a discharge outside Bermuda waters.

(2) Any proceedings for such an offence shall be stayed if the court is satisfied that the flag state has instituted proceedings corresponding to the proceedings in Bermuda in respect of the emission, within 6 months of the institution of proceedings in Bermuda.

(3) Paragraph (2) does not apply —

- (a) where the emission resulted in major damage to Bermuda; or
- (b) the Minister certifies that the flag state has repeatedly disregarded its obligation to enforce effectively the requirements of the Convention in respect of its ships.

(4) Where proceedings instituted by the flag state have been brought to a conclusion, the suspended proceedings shall be terminated.

Arbitration and compensation

23 (1) Sections 104 and 105 of the Merchant Shipping Act 2002 (arbitration and compensation) shall apply in relation to a detention notice under these Regulations as they apply to a detention notice under section 103 subject to the modifications in paragraph (2).

(2) The modifications referred to in paragraph (1) are —

- (a) references to "relevant inspector" means a person making an inspection under these Regulations;
- (b) section 104 shall apply in relation to a ship to which these Regulations apply as if the following words were omitted —
 - (i) in subsection (1) "in pursuance of section 103(4)(b)";

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- (ii) in subsection (2), the words from "unless" to the end;
 - (iii) in subsection (3), "to whether the ship was or was not a dangerously unsafe ship";
 - (iv) in subsection (5), "as dangerously unsafe ship"; and
- (c) section 105 shall apply in relation to a ship to which these Regulations apply as if for subsection (1) there were substituted —

"(1) If on reference under section 104 relating to a detention notice in relation to a ship, the owner of the ship shows to the satisfaction of the arbitrator that —

- (a) any matter did not constitute a valid basis for the relevant inspector's opinion; and
- (b) there were no reasonable grounds for the inspector to form that opinion,

the arbitrator may award the owner such compensation in respect of any loss suffered by him in consequence of the detention of the ship as the arbitrator thinks fit."

SCHEDULES

SCHEDULE 1 (Regulation 12)

PART I

**ENGINE EXCLUDED FROM REGULATION 12 BY VIRTUE OF
THE PROTOCOL OF 1997**

Engines excluded from regulation 12 by virtue of the Protocol of 1997

1. Regulation 12 does not apply to —
 - (a) any equipment or other device intended to be used solely in case of emergency including an emergency diesel engine and engines installed in lifeboats; and
 - (b) engines installed on ships solely engaged in voyages within Bermuda waters provided that such engines are subject to an alternative nitrogen oxide control measure that has been approved by the Minister; or

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- (c) any diesel engine the Minister has excluded from this regulation which is installed on a ship constructed, or which undergoes a major conversion, before 19th May 2005, provided the ship is solely engaged in voyages to ports or offshore terminals within Bermuda waters.

PART II

**FURTHER EXCLUSIONS OF SHIPS, ENGINES AND
COMPONENTS FROM REGULATION 12**

Further exclusions of ships, engines and components from regulation 12

1 In this part of this Schedule —

"major engine modification" means the modification of an engine which could potentially cause the engine to exceed the emission limits set out in the NOx Technical Code excluding routine replacement of engine components that do not alter the emission characteristics or increase the rated power of the engine by more than 15 per cent;

"marine diesel engine" means any reciprocating internal combustion engine operating on liquid or dual fuel, to which regulations 5, 6 and 13 apply, including booster and compound systems if applied;

"recreational craft" means any boat of any type intended for sports and leisure purposes of hull length from 2.5 metres to 24 metres measured according to the harmonised standard, fitted with a marine diesel engine of over 130 kW and whether used for charter or recreational boating;

"personal watercraft" means a vessel less than 4 metres in length which uses an internal combustion engine having a jet water pump as its primary source of propulsion and designed to be operated by a person sitting, standing or kneeling on, rather than within the confines of the hull;

"propulsion engine" means any spark or compression ignition, internal combustion engine used for propulsion purposes, including two-stroke and four-stroke, inboard, stern-drive with or without integral exhaust and outboard engines.

2 Regulation 13 does not apply to —

- (a) recreational craft and partly completed craft;
- (b) personal watercraft;

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- (c) marine diesel engines which are installed or specifically intended for installation on or in recreational craft and personal watercraft;
- (d) marine diesel engines installed on or in recreational craft and personal watercraft that are subject to major engine modification,

to the extent that those items are not excluded under Part 1 of this Schedule.

SCHEDULE 2

(Regulation 12)

NITROGEN OXIDES

1. The Technical File

Every marine diesel engine covered by regulation 12 must have a technical file which identifies the engine's components, settings or operating values which influence exhaust emissions. The technical file must be prepared by the engine manufacturer and approved by the relevant Certifying Authority, and is required to accompany an engine throughout its life on board the ship. It must be maintained in good order and not subjected to any unauthorised alteration, amendments, omission or deletions. The engine to which the technical file refers is to be installed in accordance with the rating (kW and speed) and duty cycle as approved together with any limitation imposed by the technical file.

2. The technical file must, at a minimum, contain the following information —

- (a) identification of those components, settings and operating values of the engine which influence its NOx emissions;
- (b) identification of the full range of allowance adjustments or alternatives for the components of the engine;
- (c) a full record of the relevant engine's performance, including the engine's rated speed and rated power;
- (d) a system of on-board NOx verification procedures to verify compliance with the NOx emission limits during on-board verification surveys;
- (e) a copy of the pre-certification test report;
- (f) if applicable, the designation and restrictions for an engine which is a member of an engine group or engine family;

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- (g) specifications of those spare parts or components which, when used in the engine, according to those specifications, will result in continued compliance of the engine with the NOx emission limits; and
- (h) the EIAPP Certificate.

2. Survey options

To ensure that engines are in compliance with regulation 12 after installation, each engine with an EIAPP Certificate must be checked at least once prior to issuance of the IAPP Certificate and at every intermediate annual and renewal survey, using one of the three onboard NOx verification methods listed below —

- (a) engine parameter check in accordance with 6.2 of the NOx Technical Code to verify that an engine's component, setting and operating values have not deviated from the specifications in the engine's technical file;
- (b) simplified measurement method in accordance with 6.3 of the NOx Technical Code; or
- (c) the direct measurement and monitoring method in accordance with 2.3.4, 2.3.5, 2.3.7, 2.3.8, 2.3.11, and 5.5. of the NOx Technical Code.

3. Engine parameter check method

Included in, or in addition to, the technical file described in paragraph 1 of this Schedule the ship-owner or person responsible for ships equipped with diesel engines must maintain on board the following document in relation to the on-board NOx verification procedures specified in paragraph 2(d) of this schedule —

- (a) a record book of engine parameters for recording all of the changes made relative to an engine's components and settings;
- (b) an engine parameter list of an engine's designated components and setting and the documentation of an engine's load-dependent operating values submitted by an engine manufacturer and approved by the Certifying Authority; and
- (c) technical documentation of an engine component modification when such a modification is made to any of the engine's designated engine components.

3.2 Record book of engine parameters

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Descriptions of any changes affecting the designated engine parameters, including adjustments, parts replacements and modifications to engine parts, must be recorded chronologically in the engine's record book of engine parameters specified in 3(a) of this schedule. Those descriptions must be supplemented with any other applicable data used for the assessment of the engine's NOx levels. Any intended change to the NOx sensitive components or setting outside the limits listed in the technical file must be approved by the relevant Certifying Authority. Routine replacement of engine components by parts specified in the technical file that do not alter emission characteristics are not regarded as a "substantial modification" regardless of whether one part or many parts are replaced.

4 Simplified method

Where an engine covered by these regulations is fitted to a ship, constructed before 1 January 2000, has been modified the 'simplified measurement method' may be used to establish if the change can be regarded as a 'substantial modification' that will increase its existing emission characteristics in excess of the allowances set out in 6.3.11 of the NOx technical code this method can also be used for the subsequent renewal and intermediate surveys when required. This method is a simplified version of the full test-bed methodology and there are certain allowances which may be applied in calculating the final emissions figures to take account of possible deviations in instrument accuracy and the presence of nitrogen in the fuel (see paragraph 6 of this Schedule).

5 Direct measurement and monitoring method

Direct measurement and monitoring method must be carried out in accordance with the applicable sections of chapters 2 and 5 of the NOx Technical Code.

6 Modifications to diesel engines

If any adjustments or modifications are made to any engine after its pre-certification, a full record of such adjustments or modifications must be recorded in the engine's record book of engine parameters.

If all of the engines installed on board are verified to remain within the parameters, components, and adjustable features recorded in the technical file, the engines should be accepted as performing within the NOx limits specified in regulation 12. In this case, with respect to this Code, an IAPP Certificate may then be issued to the ship.

If any adjustment or modification is made which is outside the approved limits documented in the technical file, the IAPP Certificate may be issued only if the overall NOx emission performance is verified to be within the required limits by —

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- (a) direct on-board NOx monitoring equipment, approved by a Competent Authority;
- (b) a simplified on-board NOx measurement; or
- (c) reference to the test-bed testing for the relevant engine group approval showing that the adjustments or modifications do not exceed the NOx emissions limits.

Where an engine covered by these Regulations is fitted to a ship, constructed before 1 January 2000, has been modified and does not have the necessary technical data to conduct a parameter check survey the IAPP Certificate may be issued only if the overall NOx emission performance is verified to be within the required limits by —

- (a) direct on-board NOx monitoring equipment, approved by a Competent Authority as described in section 5 of this Schedule; and
- (b) the simplified on board NOx measurement as described in section 4 of this Schedule.

7 Second Hand Engines

Regulation 12(2)(a) does not apply to second hand engines manufactured before 1 January 2000 which have been overhauled or re-conditioned if they replace existing engines in ships constructed before 1 January 2000 as this does not constitute a major conversion under Regulation 12 (2)(b). However, modifications which increase the maximum continuous rating of these engines by more than 10% or a substantial modification are considered a major conversion and in such instances the NOx emission limits in Regulation 12 will apply. To establish whether a modification should be regarded as a substantial modification the methods described in section 4 or 5 of this schedule should be used.

Regulation 12(2)(a) will apply to a new engine built on or after 1 January 2000, which is replacing an engine in a new or existing ship.

SCHEDULE 3 (Regulation 14)

VOLATILE ORGANIC COMPOUNDS

All ports and terminals within Bermuda which would like to declare a VOC control area as provided for in regulation 14(1) must apply to the Minister for approval. The application must include the information on the size of tankers to be controlled, the cargoes requiring vapour emission control systems and the date the port or terminal would like the controls to start. The application must be submitted at least one year before the date that the port or terminal has applied for the VOCs to be regulated.

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All vapour emission control systems within ports or terminals within Bermuda must be approved by the Minister in accordance with MSC/Circ 585, "Standards for Vapour Emission Control Systems".

All Bermuda registered tankers which are subject to vapour emission control within a port or terminal that has been notified to the IMO under regulation 15 of the 1997 Protocol to MARPOL (Annex VI), shall be provided with a vapour collection system taking into account MSC/Circ 585, "Standards for Vapour Emission control Systems".

All ships which are subject to vapour emission control in a port or terminal within Bermuda that has been approved by the Minister must be provided with a vapour collection system approved in accordance with MSC/Circ 585, "Standards for Vapour Emission Control Systems".

Regulation 14 will only apply to gas carriers when the type of loading and containment systems allow safe retention of non-methane VOCs on board or their safe return ashore.

SCHEDULE 4 (Regulation 16)

INFORMATION TO BE INCLUDED IN A BUNKER DELIVERY NOTE

- 1 Name and International Maritime Organisation number of receiving ship;
- 2 Port where delivery takes place;
- 3 Date of commencement of delivery;
- 4 Name, address and telephone number of fuel oil supplier;
- 5 Product name;
- 6 Quantity in metric tons;
- 7 Density at 15°C (kg/m³) where the fuel has been tested in accordance with ISO 3675(a); and
- 8 Sulphur content (%m/m) where the fuel has been tested in accordance with ISO 8754(b).

Made this 3rd day of October, 2005

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FROM SHIPS) REGULATIONS 2005**

Minister of Tourism and Transport