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CHINA CLASSIFICATION SOCIETY

**GUIDELINES FOR DEVELOPMENT OF SHIP'S
BALLAST WATER MANAGEMENT PLAN**

2006

CONTENTS

CHAPTER 1 GENERAL.....	1
1.1 Objective.....	1
1.2 Application.....	1
1.3 General requirements.....	1
1.4 Basis for development of the Guidelines.....	1
1.5 Abbreviations and definitions.....	1
CHAPTER 2 DEVELOPMENT OF BALLAST WATER MANAGEMENT PLAN.....	3
2.1 General requirements.....	3
2.2 BWMP development process.....	3
2.3 Requirements for contents of BWMP.....	4
2.4 Evaluation and revision of BWMP.....	13
2.5 Plans and documents to be submitted for approval of BWMP.....	13
CHAPTER 3 SAFETY EVALUATION.....	15
3.1 General requirements.....	15
3.2 Methods of ballast water exchange.....	16
3.3 Safety considerations.....	16
3.4 Safety evaluation.....	17
3.5 Sequential method.....	18
3.6 Flow-through method.....	19
3.7 Dilution method.....	21
Appendix 1 Ballast Water Reporting Form.....	23
Appendix 2 Standard Format for the Ballast Water Management Plan.....	24
Appendix 3 International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.....	27

CHAPTER 1 GENERAL

1.1 Objective

1.1.1 The objective of the Guidelines is to provide guidance for development of ship's ballast water management plan (hereinafter referred to as BWMP) in compliance with Regulation B-1 of Annex to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (hereinafter referred to as "the Convention"), and for surveyors of China Classification Society (hereinafter referred to as CCS) in approval of BWMP in accordance with Regulation B-1 of the Convention.

1.2 Application

1.2.1 The Guidelines apply to ships designed and constructed to carry ballast water and classed with CCS.

1.3 General requirements

1.3.1 For ships applying for BWMP approval, class notation "BWMP (MEPC.127 (53))" will be assigned if the requirements of the Guidelines are complied with.

1.3.2 The Guidelines contain only provisions of the Convention and relevant guidance. Attention is to be paid to other relevant provisions by the flag Administration and port State authority when conducting ballast water management to a specific ship.

1.4 Basis for development of the Guidelines

1.4.1 The Guidelines are developed on the basis of the following documents:

- (1) International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (adopted on 14 February 2004);
- (2) Resolution MEPC.127(53) – Guidelines for Ballast Water Management and Development of Ballast Water Management Plans (adopted on 22 July 2005);
- (3) Resolution MEPC.124(53) – Guidelines for Ballast Water Exchange (adopted on 22 July 2005).

1.5 Abbreviations and definitions

1.5.1 For the purpose of the Guidelines, the following abbreviations apply:

- (1) IMO means International Maritime Organization.
- (2) MEPC means Marine Environment Protection Committee under IMO.
- (3) BWMP means Ballast Water Management Plan.

1.5.2 For the purposes of the Guidelines, the following definitions apply:

- (1) Ballast Water means water with its suspended matter taken on board a ship to control trim, list, draught, stability or stresses of the ship.

- (2) Sediments mean matter settled out of Ballast Water within a ship.
- (3) Ballast Water Management means mechanical, physical, chemical, and biological processes, either singularly or in combination, to remove, render harmless, or avoid the uptake or discharge of Harmful Aquatic Organisms and Pathogens within Ballast Water and Sediments.
- (4) Harmful Aquatic Organisms and Pathogens mean aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into freshwater courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas.
- (5) Ballast Water Capacity means the total volumetric capacity of any tanks, spaces or compartments on a ship used for carrying, loading or discharging Ballast Water, including any multi-use tank, space or compartment designed to allow carriage of Ballast Water.
- (6) Active Substance means a substance or organism, including a virus or a fungus that has a general or specific action on or against Harmful Aquatic Organisms and Pathogens.
- (7) Administration means the Government of the State under whose authority the ship is operating. With respect to a ship entitled to fly a flag of any State, the Administration is the Government of that State. With respect to floating platforms engaged in exploration and exploitation of the seabed and subsoil thereof adjacent to the coast over which the coastal State exercises sovereign rights for the purposes of exploration and exploitation of its natural resources, including Floating Storage Units (FSUs) and Floating Production Storage and Offloading Units (FPSOs), the Administration is the Government of the coastal State concerned.
- (8) Port State authority means any official or organization authorized by the Government of a port State to administer or enforce standards and regulations relevant to the implementation of national and international shipping control measures.
- (9) Ship means a vessel of any type whatsoever operating in the aquatic environment and includes submersibles, floating craft, floating platforms, FSUs and FPSOs.
- (10) Ballast Water Management Plan means a document to be retained and used on board a ship that describes the process and implementation procedure of ballast water management of the particular ship, as specified in Regulation B-1 of the Convention.

CHAPTER 2 DEVELOPMENT OF BALLAST WATER MANAGEMENT PLAN

2.1 General requirements

2.1.1 The objective of Ballast Water Management Plan is to guide personnel on board ship in safe and reasonable operation of the ballast water management system so as to ensure that ballast water management is in compliance with management standards specified in the Convention.

2.1.2 The Plan is to be:

- (1) realistic, practical and easy to use;
- (2) understood by ship's personnel engaged in ballast water management, both on board and ashore, and evaluated, reviewed, and updated regularly; and
- (3) consistent with the operational ballasting requirements of the ship.

2.1.3 The Plan is to be in compliance with applicable international and national ballast water management standards.

2.1.4 The Plan is to be written in the working language of the ship's master and officers or a language at which they are skilled. A change in master and officers or the working language would require the issuance of the Plan in the new languages(s). Where the language used is not English, a translation into English is to be provided.

2.1.5 BWMP is to be a separate document, which is to be prepared in a convenient format, considering harmonization with other relevant documents. Inclusion of extensive background information on the ship, its structure, etc., is to be avoided, as this is generally available elsewhere. If such information is relevant, it is to be kept in annexes, or an existing document or manual reference is to be made to the location of the information.

2.1.6 The Plan is to be kept on board and readily available for inspection by port State control or quarantine officers.

2.2 BWMP development process

2.2.1 In general, BWMP development process is to include:

- (1) selection of ballast water management standards applicable to the ship;
- (2) confirmation of ballast water management method to the particular ship;
- (3) confirmation of relevant control procedures for implementation of ship's ballast water management;
- (4) collection and analysis of plans and information of ship's ballast water system;
- (5) safety evaluation for confirmation of measures for ballast water management;
- (6) confirmation of format and structure of BWMP and completion of BWMP.

2.2.2 Standard format for the ballast water management plan^① is provided in Appendix 2 to the Guidelines.

① The standard format is from Appendix to IMO Resolution MEPC.127(53).

2.2.3 The Guidelines give recommendations on what information is to be included into corresponding paragraphs with respect to items in the standard format of the BWMP and how such content is to be prepared. It is not required for a BWMP specific to a ship to contain all the items but only to contain those associated with ballast water management measures adopted by the ship.

2.2.4 During development of BWMP, the selected method of ballast water exchange is to be subject to safety evaluation according to Chapter 3 of the Guidelines to prove feasibility of the exchange method specific to a ballast tank. If the evaluation result shows that this method is not applicable to certain tank, alternative exchange method is to be considered.

2.3 Requirements for contents of BWMP

2.3.1 Overall structure

(1) BWMP is to at least include or cover the following four parts:

- ① preamble or introduction;
- ② arrangement of ballast system;
- ③ ballast water management;
- ④ appendices.

2.3.2 Preamble or Introduction

(1) “Preamble or Introduction” in the plan is to contain a general description of the ship and the plan, including:

- ① plan development basis;
- ② brief account of the purpose of the plan and the necessity of ballast water management;
- ③ current valid version of BWMP and identification of revision status;
- ④ control requirements for development, review, approval or revision of BWMP;
- ⑤ the requirement of 2.1.6 of this Chapter.

(2) Ship particulars

At least, the following details are to be stated in the plan:

- ① ship's name;
- ② ship type;
- ③ IMO number;
- ④ classification society and registration No.;
- ⑤ flag;
- ⑥ port of registry;
- ⑦ ship owner;
- ⑧ gross tonnage;
- ⑨ principal dimensions of ship;
- ⑩ total ballast capacity of the ship;
- ⑪ quantity and capacity of ballast pumps;

- ⑫ quantity, capacity, center of gravity and maximum free surface moment of segregated ballast tanks onboard;
 - ⑬ ballast water gauging unit (in m);
 - ⑭ officer designated for ballast water management and his duties;
 - ⑮ main methods used for ballast water management onboard;
 - ⑯ other information of ship.
- (3) Duties of officer designated for ballast water management
- ① To facilitate the implementation of ballast water management and treatment procedures on board, a responsible officer is to be designated to ensure the maintenance of appropriate records and to ensure that ballast water management and/or treatment procedures are followed and recorded.
 - ② The duties of the officer designated for ballast water management are to be stated in the plan, including:
 - a. ensuring that ballast water treatment or exchange is in compliance with procedures specified in BWMP;
 - b. preparation of Ballast Water Reporting Form prior to entry into a port;
 - c. assisting port State control or quarantine officers for any sampling that may need to be undertaken;
 - d. maintaining Ballast Water Record Book;
 - e. other duties specified by the Company;
 - f. operational duties during ballast water operation.

2.3.3 Arrangement of ballast water system

- (1) Ballast water system of the ship, including ballast tanks, piping, pumping and arrangement of monitoring sampling points are mainly described in the “Arrangement of Ballast Water System” part of the Plan in order to familiarize quarantine officers with the system.
- (2) Ballast tank arrangement and capacity
 - ① Plan and profile of the ship, or a schematic drawing of ballast arrangement is to be included in BWMP; and
 - ② The following are to be indicated in a table:
 - a. capacity of each tank and pumps available for the tank;
 - b. pumps’ rated discharge capacity.
- (3) Arrangement of piping and pumping and ballast water sampling points
 - ① Schematic drawings of piping of ballast system and those of arrangement of ballast control system are to be included in BWMP. The drawings are to indicate location of valves, identification No. and location and discharge capacity of each ballast pump.
 - ② Sampling and access points of pipes and tanks may be indicated in a table or schematic diagram to enable crew members to assist quarantine officers to promptly obtain ballast water samples.

- ③ Arrangement of ballast water sampling points is to ensure the representative quality and ease of sampling of ballast water, without the need to enter potentially dangerous spaces or partially filled ballast tanks. Reference may be made to the following:
 - a. appropriate modification of manholes, where possible, to facilitate the lowering of sampling equipment;
 - b. installation of sampling pipes inside the air pipe. Sampling pipes should be terminated at a convenient location on the top or side of the air pipe, so that a sampling pump may be easily fitted to the outlet;
 - c. installation of stand-alone sampling pipes that directly penetrate into the ballast tanks with the ends of sampling pipes located within tanks to ensure representative ballast water samples are taken;
 - d. the sampling pipe may also be fitted inside the sounding pipe to take representative samples;
 - e. provision for in-line sampling from either the ballast pump or the ballast pipework, to permit sampling either during ballasting or de-ballasting operations.
- ④ If method of flow-through or dilution is employed, sampling points are not to be arranged inside overflow pipes.

(4) Example of ballast water arrangement in specific conditions

BWMP is to include ballast water arrangements under different ballast conditions, including normal ballast condition, minimum good weather departure condition and adverse weather ballast condition (as appropriate).

2.3.4 Ballast water management

(1) General

- ① The “Ballast Water Management” part in BWMP mainly describes procedures for ballast water operation and procedures for safety of the ship and the crew, and such procedures are to be in compliance with the Convention and dependent on the prioritized method of ballast water management for the ship.
- ② One or more of the following methods may be used for ballast water management:
 - a. ballast water exchange, including sequential method, flow-through method and dilution method (see 3.2 of the Guidelines);
 - b. ballast water treatment, including mechanical method, physical method, chemical method and combined method, etc.;
 - c. prototype ballast water treatment technologies;
 - d. discharge to reception facilities;
 - e. retention of ballast water on board for future discharging into the areas where the ballast water was loaded.
- ③ Following procedures and safety considerations are to be included as a minimum:
 - a. safety considerations in ballast water exchange at sea;
 - b. procedures for ballast water operation;

- c. procedures for disposal of sediments;
- d. procedures for crew training and education;
- e. procedures for coordination with port States/coastal States;
- f. procedures for ballast water reporting and recording control.

(2) Safety considerations

- ① BWMP is to include cases where safety of ballast water exchange may be affected. Ballast water exchange is to be carried out only in an assumed safe condition, in particular with respect to structural and stability aspects. Attention is to be paid to the following:
 - a. weather condition;
 - b. training of officers and crew;
 - c. free surface effect and sloshing load in partially-filled tanks;
 - d. maintenance of adequate stability according to an approved trim and stability booklet;
 - e. permissible limits of shearing force and bending moment according to an approved trim and stability booklet;
 - f. minimum fore and aft drafts with reference to bow slamming and propeller immersion;
 - g. bridge visibility.
- ② Weather condition
 - a. Ballast water exchange is not to be carried out when weather does not permit. It is to be stipulated that it is the responsibility of the master to decide whether the ballast water exchange is to be conducted.
 - b. Cases (e.g. sea condition and wind velocity) in which ballast water exchange is not to be conducted are to be included in BWMP to assist the master in his decision as to the need of carrying out ballast water exchange operation.
 - c. Ballast water exchange is to be avoided as far as possible in seasonal heavy weather conditions (typhoon, hurricane and whirl) or areas affected by severe ice condition and an alternative route is to be selected. Generally, ballast water exchange is to be avoided in freezing weather condition.
 - d. Where above conditions are unavoidable, ballast water exchange may be carried out provided that safe operation is ensured as far as weather conditions are concerned.
- ③ Training of officers and crew

Before sailing, it is to be ensured that appropriate officers and crew members have been trained. All personnel responsible for conducting ballast water exchange are to familiarize themselves with the following:

 - a. detailed arrangement of pumping, including air pipes and overflow pipes, and all pumps involved, for better cooperation between deck crew members;
 - b. operation condition of air pipe connections and air/overflow pipes (monitoring of air/overflow pipe air lock, floating ball malfunction, freezing or inadvertent closing is to be maintained);

- c. knowledge of anticipated allowable time duration for ballast water exchange at sea;
 - d. methods of ballast water exchange, including risks and consequences involved with each method in respect of ship's stability and strength, and advantages of each method or the possibility of its use for treatment;
 - e. procedures for recording, sampling and gauging, to prove adequate recording required by the regulations;
 - f. limitation of ballast pump capacity, if any.
- ④ Loading manual
- As far as practicable, the selected exchange method is to be such that the stability and strength curves of each possible condition during ballast water exchange may be calculated by officers by using an onboard loading manual.
- (3) Procedure for ship's ballast water operation
- ① General
- The procedure for ship's ballast water operation is to include following operations associated with ballast water management:
- a. uptake of ballast water;
 - b. ballast water exchange;
 - c. other ballast water treatment process.
- ② Uptake of ballast water
- The procedure is at least to provide for following precautionary requirements associated with ballasting operation:
- a. measures to minimize the uptake of harmful aquatic organisms, pathogens and sediments in association with ballasting operation.
 - b. appropriate routing plan by the master to minimize ballast uptake.
 - c. avoidance of the uptake of ballast water in following areas and conditions:
 - (a) water areas proposed and identified by the port State;
 - (b) in darkness when bottom-dwelling organisms may rise up in the water column;
 - (c) in very shallow waters;
 - (d) where propellers may stir up sediments; or
 - (e) where dredging is or recently has been carried out.
- ③ Ballast water exchange
- The procedure is at least to provide for following operational requirements for ballast water exchange:
- a. General principles
 - (a) Personnel on board are to be familiar with ballast water and sediments requirements of the port State authority and treatment procedures, including access to information on preconditions for entry into port.

- (b) Where options are required for compliance of ballast water exchange or alternative ballast water treatment or control, the ship, for the purpose of safety, is to prepare in advance and develop a voyage plan for ballast operation.
 - (c) When preparing a voyage plan, attention is to be paid to “safety considerations” in 2.3.4(2).
 - (d) Where safety options are not available, regardless of all cases or certain cases, operational limitations are to be stated in the procedure in all cases. The description will assist the master in his reply to questions raised by a quarantine officer.
 - (e) It is to be indicated that ballast water exchange by any method is to be carried out at the required^① distance from land and in the required water depth, in order to meet the ballast water management standard^②.
- b. Operational procedures and safety considerations are to be given to the methods selected for ballast water exchange. The following are for guidance in procedure development:
- (a) Sequential method
 - a) By this method of ballast water exchange, a ballast tank is first emptied and then refilled with replacement ballast water while the ship is in navigation condition. Since additional load is induced at sea depending on sea condition and ship’ structure may as a result be affected, technical details are different from those of ballasting in port.
 - b) The sequence of ballast water exchange is at least to show the following typical load cases as specified in the approved stability manual:
 - a. normal ballast condition and if applicable, heavy ballast condition;
 - b. loading condition including ship’s maximum ballast capacity;
 - c. typical ballast loading condition with good safety limitation;
 - d. ship’s ballast loading condition with critical stability, flooding position and/or strength.
 - c) The sequence of ballast water exchange is to include a brief account of the following information for the beginning and the end of each step:
 - a. ballast water capacity of each ballast tank;
 - b. pumps involved;
 - c. anticipated time duration;
 - d. strength values in permissible range;
 - e. stability information considering free surface effect during filling or discharging operation;
 - f. fore and aft drafts;
 - g. other information.

① Refers to paragraph B-4 of “Guidelines for Ballast Water Management and Development of Ballast Water Management Plans”

② Ballast water management standards for ballast water exchange methods are to be in compliance with the standards in Regulation D-1 of the Convention.

- d) It is recommended to restore original condition after each step of exchange. The decision is to be made as to whether the next step is to be carried out taking into account of factors such as position of ship, weather forecast, machinery performance and crew fatigue. Ballast water exchange operation is to be suspended or temporarily stopped, if any factor is considered to be unfavorable.
 - e) Effects of heeling due to asymmetrical emptying or refilling are to be considered to ensure that the ship is in an upright condition during all steps. Measures are to be in place during practical operation to avoid list during pumping.
 - f) The steps are to be in compliance with requirements concerning trim and draught so that slamming or emergence of propeller may be avoided during ballast water exchange operation and the bridge visibility is within the permissible limits.
 - g) Just as overpressure is to be avoided during refilling, excessive vacuum in ballast tanks resulting from emptying is also to be avoided.
 - h) Verification is to be carried out in each step that requirements for strength and minimum stability are complied with.
- (b) Flow-through method
- a) Since flow-through method leads to little change to ship condition, the method has an advantage in adverse weather condition when application of sequential method is inadequate. However, before application of flow-through method, certain risks and concerns are to be addressed, see 2.3.4(2) “safety considerations”.
 - b) A procedure for ballast water exchange appropriate to flow-through method is to be established, listing sequence of treatment process of each ballast tank using flow-through method. A simple table may be employed to indicate specific ballast tanks and their capacities in each step, pumps available and anticipated time duration for exchange of three times the volume of each tank.
 - c) Attention is to be paid to flow-through method being used to overfill partially filled ballast water tanks. For the sake of safety, it must be checked whether any tank is first emptied and if so, the tank is to be refilled full. Otherwise, ballast tanks are to be filled full with ballast water and the ballast water is to be pumped through filled up ballast tank if ship condition permits. In any case, the change to ship condition is to be observed in a manner similar to sequential method, and it is to be checked that adequate longitudinal strength, stability, mean draft, fore draft, etc. are maintained.
 - d) After each step, decision is to be made as to whether the next step is to be carried out taking into account of factors such as position of ship, weather forecast, machinery performance and crew fatigue. Ballast water exchange operation is to be suspended or temporarily stopped, if any one factor is considered to be unfavorable.

(c) Dilution method

- a) Dilution method has an advantage similar to that of flow-through method in ballast water exchange. However, since dilution method adopts the same rate for pumping in and pumping out, attention is to be paid to safety concerns associated with excessively high or low pressure of ballast tanks subjected to exchange operation, see 2.3.4(2) “safety considerations”.
- b) A procedure for ballast water exchange appropriate to dilution method is to be established, listing sequence of treatment process of each ballast tank using dilution method. A simple table may be employed to indicate specific ballast tanks and their capacities for each step, pumps available and anticipated time duration for exchange of three times the volume of each tank.
- c) In any case, the change to ship condition is to be observed in a manner similar to sequential method, and it is to be checked that adequate longitudinal strength, stability, mean draft, fore draft, etc. are maintained.
- d) After each step, decision is to be made as to whether the next step is to be carried out taking into account of factors such as position of ship, weather forecast, machinery performance and crew fatigue. Ballast water exchange operation is to be suspended or temporarily stopped, if any factor is considered to be unfavorable.

c. Other ballast water treatment procedures

- (a) Where alternative ballast water treatment procedures are intended, e.g. ballast water treatment or discharging to reception facilities, such procedures are to be acceptable to the port State authority.
- (b) The procedure is to describe operational procedures or instructions to ballast water treatment (mechanical, chemical or biochemical methods) used on board, and operational requirements for discharging to reception facilities.

d. Handling in special cases

Special operational requirements are to be specified in case the ship is not able to conduct ballast water exchange or treatment in accordance with an approved ballast water management method as specified in BWMP, including instructions on retention or storage in tanks, and reporting to the port State for discharging ballast water according to contingency plan.

(4) Procedure for sediments management

① General

The procedure is to describe following operations in relation to control and removal of sediments in ballast tank:

- a. avoidance of uptake of sediments;
- b. removal of sediments by crew;

- c. removal of sediments ashore.
- ② Avoidance of uptake of sediments
 - a. The procedure is to describe all reasonable measures for avoiding uptake of sediments during ballasting and best time for ballasting to provide guidance for the master.
 - b. In addition to the avoidance of uptake of ballast water as specified in (3)②c, following measures for avoiding uptake of sediments are to be considered in developing BWMP:
 - a) If ballast water is to be loaded at an estuary, the operation is to be carried out at flood tide;
 - b) If water is muddy, it is advisable to load a minimum quantity of ballast water necessary for safe navigation before proceeding to cleaner waters to continue ballasting until the ship is fit for navigation;
 - c) If the clearance between ship's bottom and seabed or base material of river bottom is small, the use of high level sea inlets for ballasting is to be considered.
- ③ Removal of sediments by crew at sea
 - a. The procedure is to describe timing and operational methods in relation to removal of sediments in ballast tanks. Available methods include:
 - a) manual hose washing in ballast tank;
 - b) manual dredging of sediments in ballast tank;
 - c) using deflocculant to make sediments suspending again;
 - d) using dedicated tank washing and stripping systems.
 - b. The procedure is to describe measures to be taken for the safety of ship and personnel during sediments removal operation.
- ④ Removal of sediments ashore
 - a. The procedures may specify removal and disposal of sediments from ballast tanks in port or in dock, including safety measures for personnel.
 - b. The procedure may specify that sediments be removed from ballast tanks by shore-based specialized cleaning service provider.
- (5) Procedure for training and education
 - ① The procedure is to describe training requirements for onboard personnel engaged in ballast water management and operation, taking into account the following factors:
 - a. familiarization of officers and crew with their duties on ballast water management of the ship on which they serve;
 - b. familiarization of the master and personnel conducting ballast water operation with conventions, regulations and guidelines related to ballast water management;
 - c. familiarization with the ship's BWMP;
 - d. familiarization with the ship's ballast water management system and its operation;
 - e. familiarization with filling up ballast water record and log;
 - f. safety considerations specified in 2.3.4(2) of this Chapter.
- (6) Procedure for coordinating with port States/coastal States

The procedure is to describe coordination for ballast water discharging in waters of port States/ coastal States, e.g. authorities to be contacted and submission of report, etc.

(7) Procedure for ship's ballast water reporting and recording

- ① The procedure is to describe the reporting of implementing ship's ballast water management and treatment and the format to be used, including at least the following:
 - (a) Identification of the officer responsible for recording ballast water operation and maintaining the records;
 - (b) Date, geographical position, ballast tanks and cargo holds, quantity of ballast water loaded or discharged, temperature and salinity of ballast water during loading or discharging of ballast water are at least to be recorded. BWMP is to include the format of Ballast Water Report (Ballast Water Reporting Form in Appendix 1 of the Guidelines may be adopted);
 - (c) The master is to be required, in case the ship is unable to conduct the ballast water management procedures and/or treatment method(s) specific to the ship as required by BWMP or the port State due to weather, sea condition or other inoperable factors, as far as practicable to report this to the port State authority before entering the waters under its jurisdiction.
- ② BWMP is to include the format of Ballast Water Record Book (Ballast Water Record Book in Annex II, Appendix 3 of the Guidelines may be adopted) which is to be divided into two sections: "Record of Loading and Discharging of Ballast Water" and "Record of Abnormal Events";
- ③ The records are to be available to the port State authority;
- ④ Retention period of the Record Book is to be specified (at least 2 years on board and additional 3 years as minimum kept by the Company afterwards).

2.3.5 Appendices

(1) This part may contain all recording formats, referenced documents and drawings associated with BWMP and implementation of BWMP, including requirements of flag States, regulations of Ballast Water Convention and relevant guidelines.

2.4 Evaluation and revision of BWMP

2.4.1 The shipowner or the master is to be responsible for regular evaluation of BWMP to ensure its timeliness and correctness.

2.4.2 Any change or revision to the approved BWMP which may affect compliance with the Convention is to be subject to re-approval by the organization that approved the original BWMP.

2.5 Plans and documents to be submitted for approval of BWMP

2.5.1 The following plans and documents in triplicate are to be submitted for approval:

(1) BWMP;

- (2) Safety evaluation report for ballast water exchange;
- (3) Schemes and drawings of modification (as appropriate).

2.5.2 The following plans and information are to be submitted for approval of BWMP:

2.5.2.1 Sequential method:

- (1) General arrangement;
- (2) Lines drawing;
- (3) Capacity plan;
- (4) Loading plan (or calculations for stability, shear forces and bending moments in various loading conditions);
- (5) General ballast piping arrangement plan;
- (6) Engine room arrangement plan (or plans and information showing quantity, position and discharge capacity of ballast pumps);
- (7) Arrangement of manhole covers of all ballast tanks on board;
- (8) General arrangement of air pipes and sounding devices.

Detailed information for light weight distribution is to be submitted, if not included in (4) above.

Detailed information for permissible still water bending moment and permissible still water shear force is to be submitted, if not included in (4) above.

Detailed information for tank capacity calculations or tank capacity sounding table is to be submitted, if not included in (4) above.

The above (2) and (4) may be replaced by loading computer software.

2.5.2.2 Flow-through method or dilution method (plans included in 2.5.2.1 need not be resubmitted):

- (1) Ballast piping plan;
- (2) Arrangement of ballast tanks;
- (3) Specification of ballast pumps;
- (4) Arrangement of air pipes, overflow pipes and sounding pipes;
- (5) Structural details of ballast water inlet and overflow port.

CHAPTER 3 SAFETY EVALUATION

3.1 General requirements

3.1.1 According to Regulation B-3 of the Convention, ballast water exchange at sea is one of the management measures that may be used by ships before 2016. However, ballast water exchange introduces a number of safety issues, which affect the safety of both the ship and its crew. Therefore, safety evaluation of methods of ballast water exchange and development of ship specific procedures for conducting ballast water exchange are at the core of adopting appropriate methods of ballast water exchange. The procedures for ballast water exchange and the relevant guidance are to be reflected in BWMP.

3.1.2 It is to ensure that all safety aspects associated with ballast water exchange method or methods used onboard have been duly considered prior to undertaking ballast water exchange, and that suitably trained personnel are onboard. A review of the safety aspects, the suitability of the exchange methods being used and the aspects of crew training is to be undertaken at regular intervals.

3.1.3 In accordance with requirements of the Convention, if the master reasonably decides that to perform ballast water exchange would threaten the safety or stability of the ship, its crew or its passengers, because of adverse weather, the ship's design, stress, equipment failure or any other extraordinary condition, a ship is not to be required to comply with Regulations B-4.1 and B-4.2. In this case:

- (1) when a ship does not undertake ballast water exchange for the reasons stated in paragraph above, the reasons are to be entered in the Ballast Water Record Book;
- (2) the port or coastal State concerned may require that the discharge of ballast water must be in accordance with procedures determined by them taking into account the Guidelines for additional measures including emergency situations^① (G13).

3.1.4 If, during ballast water exchange using sequential method, certain steps are not in full compliance with safety evaluation criteria specified in paragraph 3.5.3, an appropriate note is to be placed in BWMP, based on the evaluation of the following, to alert the master and advise him of the nature of the non-compliance, the additional measures (paragraph 3.6 or 3.7) to be considered and/or the precautions to be taken:

- (1) steps that will not comply with any of the safety criteria during the operation and duration of such steps;
- (2) the effect(s) of such "noncompliance" on the navigational and manoeuvring capabilities of the ship; and
- (3) limitations to be imposed on ballast water exchange (e.g. weather and sea conditions).

3.1.5 A decision to proceed with ballast water exchange operation is to be taken by the master only when it is anticipated that:

① The Guidelines will be adopted by MEPC at its 55th Session.

- (1) the ship will be in open water;
- (2) the traffic density will be low;
- (3) an enhanced navigational watch will be maintained including (if necessary) an additional lookout forward with adequate communications with the navigation bridge;
- (4) the manoeuvrability of the vessel will not be unduly impaired for non-compliance with certain safety criteria; and
- (5) the general weather and sea state conditions will be suitable and unlikely to deteriorate during the intended operation time period.

3.2 Methods of ballast water exchange

3.2.1 The following three methods of ballast water exchange at sea have been evaluated and accepted by IMO:

- (1) Sequential method – a process by which a ballast tank intended for the carriage of ballast water is first emptied and then refilled with replacement ballast water to achieve at least a 95 per cent volumetric exchange.
- (2) Flow-through method – a process by which replacement ballast water is pumped into a ballast tank intended for the carriage of ballast water, allowing water to flow through overflow or other arrangements. For ships exchanging ballast water by the flow-through method, pumping through at least three times the volume of each filled ballast water tank at deep sea is to be required.
- (3) Dilution method – a process by which replacement ballast water is filled through the top of the ballast tank intended for the carriage of ballast water with simultaneous discharge from the bottom at the same flow rate and maintaining a constant level in the tank throughout the ballast exchange operation.

3.2.2 Exchange methods other than the above three ones are to be used only after evaluation and acceptance by IMO.

3.3 Safety considerations

3.3.1 Each method of ballast water exchange has particular safety aspects associated with it, and the following considerations are to be addressed when selecting a method to be used on a particular ship:

- (1) avoidance of over and under-pressurization of ballast tanks;
- (2) free surface effects on stability and sloshing loads in tanks that may be slack at any one time;
- (3) maintaining adequate intact stability in accordance with an approved trim and stability booklet;
- (4) complying with permissible shear forces and bending moments in seagoing conditions as required in an approved loading manual;
- (5) torsional forces;
- (6) forward and aft draughts and trim, with particular reference to bridge visibility, propeller immersion and minimum forward draft;

- (7) wave-induced hull vibrations when performing ballast water exchange;
- (8) watertight and weathertight closures (e.g. manholes) which may have to be opened during ballast exchange must be re-secured;
- (9) maximum pumping/flow rates – to ensure the tank is not subjected to a pressure greater than that for which it has been designed;
- (10) internal transfers of ballast;
- (11) admissible weather conditions;
- (12) weather routing in areas seasonably affected by cyclones, typhoons, hurricanes, or heavy icing conditions;
- (13) documented records of ballasting and/or de-ballasting and/or internal transfers of ballast;
- (14) contingency procedures for situations which may affect ballast water exchange at sea, including deteriorating weather conditions, pump failure and loss of power;
- (15) time to complete the ballast water exchange for each tank or an appropriate sequence thereof;
- (16) continual monitoring of the ballast water operation; monitoring is to include pumps, levels in tanks, line and pump pressures, stability and stresses;
- (17) a list of circumstances in which ballast water exchange is not to be undertaken. These circumstances may result from critical situations of an exceptional nature or force majeure due to stress of weather, known equipment failures or defects, or any other circumstances in which human life or safety of the ship is threatened;
- (18) ballast water exchange at sea is to be avoided in freezing weather conditions. However, when it is deemed absolutely necessary, particular attention is to be paid to the hazards associated with the freezing of overboard discharge arrangements, air pipes, ballast system valves together with their means of control, and the buildup of ice on deck; and
- (19) personnel safety, including precautions which may be required when personnel are required to work on deck at night, in heavy weather, when ballast water overflows the deck, and in freezing conditions. These concerns may be related to the risks to the personnel of falling and injury, due to the slippery wet surface of the deck plate, when water is overflowing on deck, and to the direct contact with the ballast water, in terms of occupational health and safety.

3.3.2 After evaluation of safety considerations specific to a ship, procedures, suggestions and information appropriate to safety considerations specified in 3.3.1 are to be included in BWMP, based on the identified method of ballast water exchange and ship type.

3.4 Safety evaluation

3.4.1 When identifying the ballast water exchange method(s) for a particular ship, an evaluation is to be made which should include:

- (1) the safety margins for stability and strength contained in allowable seagoing conditions, as specified in the approved trim and stability booklet and the loading manual relevant to individual types of ships. Account is also to be taken of the envisaged ballast water exchange method or methods to be used;

- (2) the ballast pumping and piping system taking account of the quantity of ballast pumps and their capacities, size and arrangements of ballast water tanks; and
- (3) the availability and capacity of tank vents and overflow arrangements, for the flow-through method, the availability and capacity of tank overflow points, prevention of under and over pressurization of the ballast tanks.

3.4.2 Safety evaluation is to be carried out in accordance with paragraphs 3.5, 3.6 and 3.7 of the Guidelines.

3.5 Sequential method

3.5.1 A proper ballast water exchange sequence is to be established.

3.5.2 The following are to be taken into account in safety evaluation of steps of sequence of ballast water exchange:

- (1) intact stability;
- (2) longitudinal strength;
- (3) propeller immersion;
- (4) bridge visibility.

3.5.3 Criteria for safety evaluation

(1) Intact stability

Applicable stability criteria in loading manual (or calculations of stability, shear forces and bending moments in various loading conditions) are to be satisfied.

(2) Longitudinal strength

Permissible values specified in loading manual (or calculations of stability, shear forces and bending moments in various loading conditions) are to be satisfied.

(3) Propeller immersion

Propeller is to be fully immersed at minimum aft draft during each step of ballast water exchange.

(4) Bridge visibility

The length of the blind area outside of the bridge forward of bow is to be the lesser of three times the ship's length (LBP) and 1,000 meters.

3.5.4 Check condition for safety evaluation

During safety evaluation, the following loading conditions with worst stability and/or strength are to be chosen for calculation in accordance with typical conditions in the loading manual:

- (1) mid-voyage full load condition (with 50% consumables);
- (2) mid-voyage ballast condition (with 50% consumables).

For container ships, the mid-voyage full load condition is to be considered and the loading condition with the rated maximum/near maximum number of containers is to be chosen as far as possible; for bulk carriers, the mid-voyage ballast condition (including storm ballast) is to be considered; and for tankers, the mid-voyage ballast condition is to be considered.

3.6 Flow-through method

3.6.1 The method is applicable to but not limited to the following compartments:

- (1) cargo holds intended for carriage of ballast water in heavy ballast condition;
- (2) topside tanks in light ballast condition;
- (3) fore and aft peak tanks.

3.6.2 The following are to be included in safety evaluation of flow-through method:

- (1) ballast pumping and piping system, taking account of the quantity of ballast pumps, their capacities and pressure heads.
- (2) the availability and capacity of tank overflow points for the flow-through method, and requirements for crew training.
- (3) prevention of under and over pressurization of ballast tanks during ballast water exchange.

3.6.3 The following considerations are to be taken into account in the evaluation and corresponding operational procedures, suggestions and guidance are to be included in BWMP:

- (1) maximum pumping/flow rates to ensure the tank is not subjected to a pressure greater than that for which it has been designed;
- (2) all tanks are subjected to ballast water exchange three times the full volume of the tank capacity when conducting ballast water exchange simultaneously in more than one tanks to reduce overflow resistance and avoid over high pressure in ballast tanks;
- (3) rate of ballast water exchange is taken into account in arrangement of ballast piping and overflow ports;
- (4) admissible weather conditions;
- (5) time to complete the ballast water exchange for each tank or an appropriate sequence thereof;
- (6) continual monitoring of ballast water operation, including pumps, levels in tanks, line and pump pressure, etc.;
- (7) watertight and weathertight closures (e.g. manholes) which may have to be opened during ballast exchange must be re-secured;
- (8) hull vibration induced by ballast water exchange;
- (9) personnel safety, including precautions which may be required when personnel are required to work on deck at night, in heavy weather, when ballast water overflows the deck and in freezing conditions.

3.6.4 System design requirements

3.6.4.1 For existing ships:

- (1) For systems in need of modification, relevant schemes and drawings are to be included in the safety evaluation report for approval.
- (2) The ballast tank is not to be subjected to a pressure greater than that for which it has been designed when conducting ballast water exchange by flow-through method at maximum flow rate (or maximum permissible flow rate), and this is to be verified by piping resistance calculation or onboard testing.

3.6.4.2 For newbuildings:

- (1) The side discharge ports and uptake inlets for ballast water are to be far apart to prevent contamination of incoming ballast water.
- (2) The internal arrangement of ballast tanks, including that of ballast water uptake inlets and discharge ports, is to achieve complete exchange of ballast water and facilitate removal of sediments.
- (3) The area of the air pipe in ballast tank is to be not less than 1.25 times that of the filling pipe. Where a sampling pipe is installed within the air pipe, the area of the sampling pipe is to be deducted.
- (4) Generally, the area of the ballast water overflow pipe is to be not less than that of the air pipe as required above.
- (5) The efficiency of ballast water exchange is to be improved by laying, where necessary, additional piping in double bottom ballast tanks and fore and aft peak tanks where stagnation of ballast water is significant.
- (6) Unless specially approved, an air pipe head fitted with automatic closing device is not to be used for ballast water overflow. Overflowing of ballast water on deck is to be avoided.

3.6.5 Calculation of resistance to overflow in ballast tank

- (1) By flow-through method, which ensures the tank is full with water, concerns such as excessive bending moments, shearing forces and local stresses are avoided. However, ballast tank and piping may still be overpressurized as a result of the presence of resistance drop of overflow pipes, thus damaging hull structure. Overflow resistance calculation may be employed to ensure the tank pressure will not be greater than its design pressure when conducting ballast water exchange by flow-through method at maximum permissible exchange rate, as follows:

$$P_{cat} = \rho g h_p + \Delta P_{dyn} < P_{design}$$

where: P_{design} – design pressure of the tank, determined by design value of hull structure, in MPa;
 ρ – density of seawater, in kg/m³;
 h_p – height of top of the overflow pipe above tank bottom, in m;
 g – gravity acceleration, in m/s²;
 ΔP_{dyn} – calculated overflow resistance of overflow pipes, in MPa.

- (2) In case design pressure specific to a tank is not available, reference may be made to formulas included in rules in relation to hull structural calculation. Where tank is loaded up to the air pipe or overflow pipe, the static pressure P_{design} at upper part of the tank is determined by:

$$P_{design} = \rho g h_{air} + P_{drop} \quad \text{kN/m}^2$$

where: h_{air} – height of top of the air pipe above tank bottom, in m;
 P_{drop} – air pipe overflow resistance considered in structural design, in MPa.

Therefore, only the following is to be satisfied to avoid presence of overpressure in ballast tank:

$$\Delta P_{dyn} < P_{drop} + \rho g (h_{air} - h_p)$$

For ballast water exchange using flow-through method, the air pipe resistance drop P_{drop} may be taken as 25 kN/m² in structural design. Where longer pipes or bending connections or valves are used, greater values of drop in pipe pressure may be taken, provided that relevant calculations are presented.

- (3) Overflow pipe resistance may be calculated by using the formulas and resistance coefficient data acceptable to CCS or recognized internationally, e.g. Hazen-Williams method, Darcy-Weisbach method or Practical Planning for Ship Design (Machinery) etc.
- (4) Ballast tank pressure relates mainly to arrangement of overflow pipes and flow rate during ballast water exchange. Maximum permissible overflow pipe flow rate or pressure drop curve related to overflow pipe flow rate may be given in hydraulic calculation, provided that pressure of ballast tank does not exceed permissible value.
- (5) Since the actual capacity of ballast pumps may be greater than the rated one, their pumping rate is to be limited to be not more than that determined in overflow pipe resistance calculation, both for resistance calculation and in ballast exchange operation.
- (6) Flow rate is to be considered independently for each tank when more than one tank is subjected simultaneously to ballast water exchange.

3.7 Dilution method

3.7.1 Dilution method has the advantage of flow-through method, requires separate ballast pumps for discharging and consequently will not lead to any overpressure in ballast tank. Therefore, the method is applicable to almost all tanks for ballast water exchange. Due to complicated modification of piping, however, the method is not recommended for the existing ships.

3.7.2 In safety evaluation of dilution method, the following are to be considered:

- (1) ballast pumping and piping system, taking account of the quantity of ballast pumps, their capacities and pressure heads;
- (2) ensuring consistent rate of pumping in and pumping out to avoid any other safety problems arising from change of pressure or liquid level in ballast tank during ballast water exchange.

3.7.3 The following factors are to be taken into account in evaluation, and corresponding operational procedure, suggestions and guidance are to be included in BWMP:

- (1) ensuring consistent rate of pumping in and pumping out to avoid pressure occurring in ballast tank during ballast water exchange;
- (2) ensuring all tanks are subjected to a ballast water exchange by three times the tank capacity when conducting ballast water exchange simultaneously in more than one tanks;
- (3) efficiency of ballast water exchange is to be taken into account in arrangement of ballast piping and overflow ports;
- (4) time to complete the ballast water exchange for each tank or an appropriate sequence thereof;

- (5) continual monitoring of ballast water operation, including pumps, water levels in tanks, line and pump pressure etc.;
- (6) hull vibration induced by ballast water exchange.

3.7.4 System design requirements

- (1) For systems in need of modification, relevant schemes and drawings are to be included in the safety evaluation for approval.
- (2) Consistent rate of ballast water pumping in and pumping out is to be ensured by fitting level gauging and monitoring devices, high and low level alarms.
- (3) The side discharge ports and uptake inlets for ballast water are to be far apart to prevent contamination of incoming ballast water.
- (4) The internal arrangement of ballast tanks, including that of ballast water uptake inlets and discharge ports, is to achieve complete exchange of ballast water and facilitate removal of sediments.
- (5) The area of the air pipe in ballast tank is to be not less than 1.25 times that of the filling pipe. Where a sampling pipe is installed within the air pipe, the area of the sampling pipe is to be deducted.
- (6) The efficiency of ballast water exchange is to be improved by laying, where necessary, additional piping in double bottom ballast tanks and fore and aft peak tanks where stagnation of ballast water is significant.
- (7) Flow rate and time duration are to be considered independently for each tank when more than one tank are subjected simultaneously to ballast water exchange.

Appendix 2
STANDARD FORMAT FOR THE BALLAST WATER MANAGEMENT PLAN

PREAMBLE

The ballast water management plan should contain the information required by Regulation B-1 of the Convention.

INTRODUCTION

At the beginning of each plan, wording should be included to reflect the intent of the following text.

- 1 This Plan is written in accordance with the requirements of Regulation B-1 of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Convention) and the associated Guidelines.
- 2 The purpose of the Plan is to meet the requirements for the control and management of ship's ballast water and sediments in accordance with resolution MEPC.127(53) - Guidelines for Ballast Water Management and the Development of Ballast Water Management Plans. It provides standard operational guidance for the planning and management of ships' ballast water and sediments and describes safe procedures to be followed.
- 3 This Plan has been approved by the Administration and no alteration or revision shall be made to any part of it without the prior approval of the Administration.
- 4 This Plan may be inspected on request by an authorized authority.

SHIP PARTICULARS

At least the following details should be included:

Ships' name;

Flag;

Port of registry;

Gross Tonnage;

IMO number;

Length (BP);

Beam;

International call sign;

Deepest ballast drafts (normal and heavy weather);

Total ballast capacity of the ship in cubic meters and other units if applicable to the ship;

A brief description of the main ballast water management method(s) used on the ship; and

Identification (rank) of the appointed ballast water management officer.

① In accordance with resolution A.600(15), IMO Ship Identification Number Scheme.

INDEX

An index of sections should be included to reference the content of the Plan.

PURPOSE

A brief introduction should be contained for the ship's crew, explaining the need for ballast water management, and the importance of accurate record keeping.

PLANS/DRAWINGS OF THE BALLAST SYSTEM

Plans or drawings of the ballast system for example:

- 1) ballast tank arrangement;
- 2) ballast capacity plan;
- 3) a ballast water piping and pumping arrangement, including air pipes and sounding arrangements;
- 4) ballast water pump capacities;
- 5) the ballast water management system used onboard, with references to detailed operational and maintenance manuals held on board;
- 6) installed ballast water treatment systems; and
- 7) a plan and profile of the ship, or a schematic drawing of the ballast arrangement.

DESCRIPTION OF THE BALLAST SYSTEM

A description of the ballast system.

BALLAST WATER SAMPLING POINTS

Lists and/or diagrams indicating the location of sampling and access points in pipelines and ballast water tanks.

A note that sampling of ballast water is primarily a matter for the authorized authority, and there is unlikely to be any need for crew members to take samples except at the express request, and under the supervision, of the authorized authority.

OPERATION OF THE BALLAST WATER MANAGEMENT SYSTEM

A detailed description of the operation of the Ballast Water Management System(s) used on board.

The plan for using related products may be referenced.

Information on general ballast water management precautionary practices.

SAFETY PROCEDURES FOR THE SHIP AND THE CREW

Details of specific safety aspects of the ballast water management system used.

OPERATIONAL OR SAFETY RESTRICTIONS

Details of specific operational or safety restrictions including those associated with the management system which affects the ship and/or the crew including reference to procedures for safe tank entry.

DESCRIPTION OF THE METHOD(S) USED ON BOARD FOR BALLAST WATER MANAGEMENT AND SEDIMENT CONTROL

Details of the method(s) used on board for the management of ballast and for sediment control including step-by-step operational procedures.

PROCEDURES FOR THE DISPOSAL OF SEDIMENTS

Procedures for the disposal of sediments at sea and to shore.

METHODS OF COMMUNICATION

Details of the procedures for coordinating the discharge of ballast in waters of a coastal State.

DUTIES OF THE BALLAST WATER MANAGEMENT OFFICER

Outline of the duties of the designated officer.

RECORDING REQUIREMENTS

Details of the record-keeping requirements of the Convention.

CREW TRAINING AND FAMILIARIZATION

Information on the provision of crew training and familiarization.

EXEMPTIONS

Details of any exemptions granted to the ship under Regulation A-4.

APPROVING AUTHORITY

Details and stamp of approving authority.

Appendix 3

INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST WATER AND SEDIMENTS, 2004

THE PARTIES TO THIS CONVENTION,

RECALLING Article 196(1) of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which provides that “States shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto”,

NOTING the objectives of the 1992 Convention on Biological Diversity (CBD) and that the transfer and introduction of Harmful Aquatic Organisms and Pathogens via ships' ballast water threatens the conservation and sustainable use of biological diversity as well as decision IV/5 of the 1998 Conference of the Parties (COP4) to the CBD concerning the conservation and sustainable use of marine and coastal ecosystems, as well as decision VI/23 of the 2002 Conference of the Parties (COP6) to the CBD on alien species that threaten ecosystems, habitats or species, including guiding principles on invasive species,

NOTING FURTHER that the 1992 United Nations Conference on Environment and Development (UNCED) requested the International Maritime Organization (the Organization) to consider the adoption of appropriate rules on ballast water discharge,

MINDFUL of the precautionary approach set out in Principle 15 of the Rio Declaration on Environment and Development and referred to in resolution MEPC.67(37), adopted by the Organization's Marine Environment Protection Committee on 15 September 1995,

ALSO MINDFUL that the 2002 World Summit on Sustainable Development, in paragraph 34(b) of its Plan of Implementation, calls for action at all levels to accelerate the development of measures to address invasive alien species in ballast water,

CONSCIOUS that the uncontrolled discharge of Ballast Water and Sediments from ships has led to the transfer of Harmful Aquatic Organisms and Pathogens, causing injury or damage to the environment, human health, property and resources,

RECOGNIZING the importance placed on this issue by the Organization through Assembly resolutions A.774(18) in 1993 and A.868(20) in 1997, adopted for the purpose of addressing the transfer of Harmful Aquatic Organisms and Pathogens,

RECOGNIZING FURTHER that several States have taken individual action with a view to prevent, minimize and ultimately eliminate the risks of introduction of Harmful Aquatic Organisms and Pathogens through ships entering their ports, and also that this issue, being of worldwide concern, demands action based on globally applicable regulations together with guidelines for their effective implementation and uniform interpretation,

DESIRING to continue the development of safer and more effective Ballast Water Management options that will result in continued prevention, minimization and ultimate elimination of the transfer of Harmful Aquatic Organisms and Pathogens,

RESOLVED to prevent, minimize and ultimately eliminate the risks to the environment, human health, property and resources arising from the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships' Ballast Water and Sediments, as well as to avoid unwanted side-effects from that control and to encourage developments in related knowledge and technology,

CONSIDERING that these objectives may best be achieved by the conclusion of an International Convention for the Control and Management of Ships' Ballast Water and Sediments,

HAVE AGREED as follows:

Article 1 *Definitions*

For the purpose of this Convention, unless expressly provided otherwise:

- 1 "Administration" means the Government of the State under whose authority the ship is operating. With respect to a ship entitled to fly a flag of any State, the Administration is the Government of that State. With respect to floating platforms engaged in exploration and exploitation of the sea-bed and subsoil thereof adjacent to the coast over which the coastal State exercises sovereign rights for the purposes of exploration and exploitation of its natural resources, including Floating Storage Units (FSUs) and Floating Production Storage and Offloading Units (FPSOs), the Administration is the Government of the coastal State concerned.
- 2 "Ballast Water" means water with its suspended matter taken on board a ship to control trim, list, draught, stability or stresses of the ship.
- 3 "Ballast Water Management" means mechanical, physical, chemical, and biological processes, either singularly or in combination, to remove, render harmless, or avoid the uptake or discharge of Harmful Aquatic Organisms and Pathogens within Ballast Water and Sediments.
- 4 "Certificate" means the International Ballast Water Management Certificate.
- 5 "Committee" means the Marine Environment Protection Committee of the Organization.
- 6 "Convention" means the International Convention for the Control and Management of Ships' Ballast Water and Sediments.

7 “Gross tonnage” means the gross tonnage calculated in accordance with the tonnage measurement regulations contained in Annex I to the International Convention on Tonnage Measurement of Ships, 1969 or any successor Convention.

8 “Harmful Aquatic Organisms and Pathogens” means aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into freshwater courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas.

9 “Organization” means the International Maritime Organization.

10 “Secretary-General” means the Secretary-General of the Organization.

11 “Sediments” means matter settled out of Ballast Water within a ship.

12 “Ship” means a vessel of any type whatsoever operating in the aquatic environment and includes submersibles, floating craft, floating platforms, FSUs and FPSOs.

Article 2 *General Obligations*

1 Parties undertake to give full and complete effect to the provisions of this Convention and the Annex thereto in order to prevent, minimize and ultimately eliminate the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments.

2 The Annex forms an integral part of this Convention. Unless expressly provided otherwise, a reference to this Convention constitutes at the same time a reference to the Annex.

3 Nothing in this Convention shall be interpreted as preventing a Party from taking, individually or jointly with other Parties, more stringent measures with respect to the prevention, reduction or elimination of the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments, consistent with international law.

4 Parties shall endeavour to co-operate for the purpose of effective implementation, compliance and enforcement of this Convention.

5 Parties undertake to encourage the continued development of Ballast Water Management and standards to prevent, minimize and ultimately eliminate the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments.

6 Parties taking action pursuant to this Convention shall endeavour not to impair or damage their environment, human health, property or resources, or those of other States.

7 Parties should ensure that Ballast Water Management practices used to comply with this Convention do not cause greater harm than they prevent to their environment, human health, property or resources, or those of other States.

8 Parties shall encourage ships entitled to fly their flag, and to which this Convention applies, to avoid, as far as practicable, the uptake of Ballast Water with potentially Harmful Aquatic Organisms and Pathogens, as well as Sediments that may contain such organisms, including promoting the adequate implementation of recommendations developed by the Organization.

9 Parties shall endeavour to co-operate under the auspices of the Organization to address threats and risks to sensitive, vulnerable or threatened marine ecosystems and biodiversity in areas beyond the limits of national jurisdiction in relation to Ballast Water Management.

Article 3 *Application*

1 Except as expressly provided otherwise in this Convention, this Convention shall apply to:

- (a) ships entitled to fly the flag of a Party; and
- (b) ships not entitled to fly the flag of a Party but which operate under the authority of a Party.

2 This Convention shall not apply to:

- (a) ships not designed or constructed to carry Ballast Water;
- (b) ships of a Party which only operate in waters under the jurisdiction of that Party, unless the Party determines that the discharge of Ballast Water from such ships would impair or damage their environment, human health, property or resources, or those of adjacent or other States;
- (c) ships of a Party which only operate in waters under the jurisdiction of another Party, subject to the authorization of the latter Party for such exclusion. No Party shall grant such authorization if doing so would impair or damage their environment, human health, property or resources, or those of adjacent or other States. Any Party not granting such authorization shall notify the Administration of the ship concerned that this Convention applies to such ship;
- (d) ships which only operate in waters under the jurisdiction of one Party and on the high seas, except for ships not granted an authorization pursuant to sub-paragraph (c), unless such Party determines that the discharge of Ballast Water from such ships would impair or damage their environment, human health, property or resources, or those of adjacent or other States;
- (e) 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. However, each Party shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities of such ships owned or operated by it, that such ships act in a manner consistent, so far as is reasonable and practicable, with this Convention; and
- (f) permanent Ballast Water in sealed tanks on ships, that is not subject to discharge.

3 With respect to ships of non-Parties to this Convention, Parties shall apply the requirements of this Convention as may be necessary to ensure that no more favorable treatment is given to such ships.

Article 4 *Control of the Transfer of Harmful Aquatic Organisms and Pathogens Through Ships' Ballast Water and Sediments*

1 Each Party shall require that ships to which this Convention applies and which are entitled to fly its flag or operating under its authority comply with the requirements set forth in this Convention, including the applicable standards and requirements in the Annex, and shall take effective measures to ensure that those ships comply with those requirements.

2 Each Party shall, with due regard to its particular conditions and capabilities, develop national policies, strategies or programmes for Ballast Water Management in its ports and waters under its jurisdiction that accord with, and promote the attainment of the objectives of this Convention.

Article 5 *Sediment Reception Facilities*

1 Each Party undertakes to ensure that, in ports and terminals designated by that Party where cleaning or repair of ballast tanks occurs, adequate facilities are provided for the reception of Sediments, taking into account the Guidelines developed by the Organization. Such reception facilities shall operate without causing undue delay to ships and shall provide for the safe disposal of such Sediments that does not impair or damage their environment, human health, property or resources or those of other States.

2 Each Party shall notify the Organization for transmission to the other Parties concerned of all cases where the facilities provided under paragraph 1 are alleged to be inadequate.

Article 6 *Scientific and Technical Research and Monitoring*

1 Parties shall endeavour, individually or jointly, to:

- (a) promote and facilitate scientific and technical research on Ballast Water Management; and
- (b) monitor the effects of Ballast Water Management in waters under their jurisdiction.

Such research and monitoring should include observation, measurement, sampling, evaluation and analysis of the effectiveness and adverse impacts of any technology or methodology as well as any adverse impacts caused by such organisms and pathogens that have been identified to have been transferred through ships' Ballast Water.

2 Each Party shall, to further the objectives of this Convention, promote the availability of relevant information to other Parties who request it on:

- (a) scientific and technology programs and technical measures undertaken with respect to Ballast Water Management; and
- (b) the effectiveness of Ballast Water Management deduced from any monitoring and assessment programs.

Article 7 *Survey and Certification*

1 Each Party shall ensure that ships flying its flag or operating under its authority and subject to survey and certification are so surveyed and certified in accordance with the regulations in the Annex.

2 A Party implementing measures pursuant to Article 2.3 and Section C of the Annex shall not require additional survey and certification of a ship of another Party, nor shall the Administration of the ship be obligated to survey and certify additional measures imposed by another Party. Verification of such additional measures shall be the responsibility of the Party implementing such measures and shall not cause undue delay to the ship.

Article 8 *Violations*

1 Any violation of the requirements of this Convention shall be prohibited and sanctions shall be established under the law of the Administration of the ship concerned, wherever the violation occurs. If the Administration is informed of such a violation, it shall investigate the matter and may request the reporting Party to furnish additional evidence of the alleged violation. If the Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken as soon as possible in accordance with its law. The Administration shall promptly inform the Party that reported the alleged violation, as well as the Organization, of any action taken. If the Administration has not taken any action within 1 year after receiving the information, it shall so inform the Party which reported the alleged violation.

2 Any violation of the requirements of this Convention within the jurisdiction of any Party shall be prohibited and sanctions shall be established under the law of that Party. Whenever such a violation occurs, that Party shall either:

- (a) cause proceedings to be taken in accordance with its law; or
- (b) furnish to the Administration of the ship such information and evidence as may be in its possession that a violation has occurred.

3 The sanctions provided for by the laws of a Party pursuant to this Article shall be adequate in severity to discourage violations of this Convention wherever they occur.

Article 9 *Inspection of Ships*

1 A ship to which this Convention applies may, in any port or offshore terminal of another Party, be subject to inspection by officers duly authorized by that Party for the purpose of determining whether the ship is in compliance with this Convention. Except as provided in paragraph 2 of this Article, any such inspection is limited to:

- (a) verifying that there is onboard a valid Certificate, which, if valid shall be accepted; and
- (b) inspection of the Ballast Water record book, and/or
- (c) a sampling of the ship's Ballast Water, carried out in accordance with the guidelines to be developed by the Organization. However, the time required to analyze the samples shall not be used as a basis for unduly delaying the operation, movement or departure of the ship.

2 Where a ship does not carry a valid Certificate or there are clear grounds for believing that:

- (a) the condition of the ship or its equipment does not correspond substantially with the particulars of the Certificate; or
 - (b) the master or the crew are not familiar with essential shipboard procedures relating to Ballast Water Management, or have not implemented such procedures;
- a detailed inspection may be carried out.

3 In the circumstances given in paragraph 2 of this Article, the Party carrying out the inspection shall take such steps as will ensure that the ship shall not discharge Ballast Water until it can do so without presenting a threat of harm to the environment, human health, property or resources.

Article 10 *Detection of Violations and Control of Ships*

1 Parties shall co-operate in the detection of violations and the enforcement of the provisions of this Convention.

2 If a ship is detected to have violated this Convention, the Party whose flag the ship is entitled to fly, and/or the Party in whose port or offshore terminal the ship is operating, may, in addition to any sanctions described in Article 8 or any action described in Article 9, take steps to warn, detain, or exclude the ship. The Party in whose port or offshore terminal the ship is operating, however, may grant such a ship permission to leave the port or offshore terminal for the purpose of discharging Ballast Water or proceeding to the nearest appropriate repair yard or reception facility available, provided doing so does not present a threat of harm to the environment, human health, property or resources.

3 If the sampling described in Article 9.1(c) leads to a result, or supports information received from another port or offshore terminal, indicating that the ship poses a threat to the environment, human health, property or resources, the Party in whose waters the ship is operating shall prohibit such ship from discharging Ballast Water until the threat is removed.

4 A Party may also inspect a ship when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party, together with sufficient evidence that a ship is operating or has operated in violation of a provision in this Convention. The report of such investigation shall be sent to the Party requesting it and to the competent authority of the Administration of the ship concerned so that appropriate action may be taken.

Article 11 *Notification of Control Actions*

1 If an inspection conducted pursuant to Article 9 or 10 indicates a violation of this Convention, the ship shall be notified. A report shall be forwarded to the Administration, including any evidence of the violation.

2 In the event that any action is taken pursuant to Article 9.3, 10.2 or 10.3, the officer carrying out such action shall forthwith inform, in writing, the Administration of the ship concerned, or if this is not possible, the consul or diplomatic representative of the ship concerned, of all the circumstances in which the action was deemed necessary. In addition, the recognized organization responsible for the issue of certificates shall be notified.

3 The port State authority concerned shall, in addition to parties mentioned in paragraph 2, notify the next port of call of all relevant information about the violation, if it is unable to take action as specified in Article 9.3, 10.2 or 10.3 or if the ship has been allowed to proceed to the next port of call.

Article 12 *Undue Delay to Ships*

1 All possible efforts shall be made to avoid a ship being unduly detained or delayed under Article 7.2, 8, 9 or 10.

2 When a ship is unduly detained or delayed under Article 7.2, 8, 9 or 10, it shall be entitled to compensation for any loss or damage suffered.

Article 13 *Technical Assistance, Co-operation and Regional Co-operation*

1 Parties undertake, directly or through the Organization and other international bodies, as appropriate, in respect of the control and management of ships' Ballast Water and Sediments, to provide support for those Parties which request technical assistance:

- (a) to train personnel;
- (b) to ensure the availability of relevant technology, equipment and facilities;
- (c) to initiate joint research and development programs; and
- (d) to undertake other action aimed at the effective implementation of this Convention and of guidance developed by the Organization related thereto.

2 Parties undertake to co-operate actively, subject to their national laws, regulations and policies, in the transfer of technology in respect of the control and management of ships' Ballast Water and Sediments.

3 In order to further the objectives of this Convention, Parties with common interests to protect the environment, human health, property and resources in a given geographical area, in particular, those Parties bordering enclosed and semi-enclosed seas, shall endeavor, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional agreements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional agreements to develop harmonized procedures.

Article 14 *Communication of Information*

1 Each Party shall report to the Organization and, where appropriate, make available to other Parties the following information:

- (a) any requirements and procedures relating to Ballast Water Management, including its laws, regulations, and guidelines for implementation of this Convention;
- (b) the availability and location of any reception facilities for the environmentally safe disposal of Ballast Water and Sediments; and
- (c) any requirements for information from a ship which is unable to comply with the provisions of this Convention for reasons specified in regulations A-3 and B-4 of the Annex.

2 The Organization shall notify Parties of the receipt of any communications under the present Article and circulate to all Parties any information communicated to it under subparagraphs 1(b) and (c) of this Article.

Article 15 *Dispute Settlement*

Parties shall settle any dispute between them concerning the interpretation or application of this Convention by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements or other peaceful means of their own choice.

Article 16 *Relationship to International Law and Other Agreements*

Nothing in this Convention shall prejudice the rights and obligations of any State under customary international law as reflected in the United Nations Convention on the Law of the Sea.

Article 17 *Signature, Ratification, Acceptance, Approval and Accession*

1 This Convention shall be open for signature by any State at the Headquarters of the Organization from 1 June 2004 to 31 May 2005 and shall thereafter remain open for accession by any State.

2 States may become Parties to the Convention by:

- (a) signature not subject to ratification, acceptance, or approval; or
- (b) signature subject to ratification, acceptance, or approval, followed by ratification, acceptance or approval; or
- (c) accession.

3 Ratification, acceptance, approval or accession shall be effected by the deposit of an instrument to that effect with the Secretary-General.

4 If a State comprises two or more territorial units in which different systems of law are applicable in relation to matters dealt with in this Convention, it may at the time of signature, ratification, acceptance, approval, or accession declare that this Convention shall extend to all its territorial units or only to one or more of them and may modify this declaration by submitting another declaration at any time.

5 Any such declaration shall be notified to the Depositary in writing and shall state expressly the territorial unit or units to which this Convention applies.

Article 18 *Entry into Force*

1 This Convention shall enter into force twelve months after the date on which not less than thirty States, the combined merchant fleets of which constitute not less than thirty-five percent of the gross tonnage of the world's merchant shipping, have either signed it without reservation as to ratification, acceptance or approval, or have deposited the requisite instrument of ratification, acceptance, approval or accession in accordance with Article 17.

2 For States which have deposited an instrument of ratification, acceptance, approval or accession in respect of this Convention after the requirements for entry into force thereof have been met, but prior to the date of entry in force, the ratification, acceptance, approval or accession shall take effect on the date of entry into force of this Convention or three months after the date of deposit of instrument, whichever is the later date.

3 Any instrument of ratification, acceptance, approval or accession deposited after the date on which this Convention enters into force shall take effect three months after the date of deposit.

4 After the date on which an amendment to this Convention is deemed to have been accepted under Article 19, any instrument of ratification, acceptance, approval or accession deposited shall apply to this Convention as amended.

Article 19 *Amendments*

1 This Convention may be amended by either of the procedures specified in the following paragraphs.

2 Amendments after consideration within the Organization:

(a) Any Party may propose an amendment to this Convention. A proposed amendment shall be submitted to the Secretary-General, who shall then circulate it to the Parties and Members of the Organization at least six months prior to its consideration.

(b) An amendment proposed and circulated as above shall be referred to the Committee for consideration. Parties, whether or not Members of the Organization, shall be entitled to participate in the proceedings of the Committee for consideration and adoption of the amendment.

(c) Amendments shall be adopted by a two-thirds majority of the Parties present and voting in the Committee, on condition that at least one-third of the Parties shall be present at the time of voting.

(d) Amendments adopted in accordance with subparagraph (c) shall be communicated by the Secretary-General to the Parties for acceptance.

(e) An amendment shall be deemed to have been accepted in the following circumstances:

(i) An amendment to an article of this Convention shall be deemed to have been accepted on the date on which two-thirds of the Parties have notified the Secretary-General of their acceptance of it.

(ii) An amendment to the Annex shall be deemed to have been accepted at the end of twelve months after the date of adoption or such other date as determined by the Committee. However, if by that date more than one-third of the Parties notify the Secretary-General that they object to the amendment, it shall be deemed not to have been accepted.

(f) An amendment shall enter into force under the following conditions:

(i) An amendment to an article of this Convention shall enter into force for those Parties that have declared that they have accepted it six months after the date on which it is deemed to have been accepted in accordance with subparagraph (e)(i).

- (ii) An amendment to the Annex shall enter into force with respect to all Parties six months after the date on which it is deemed to have been accepted, except for any Party that has:
 - (1) notified its objection to the amendment in accordance with subparagraph (e)(ii) and that has not withdrawn such objection; or
 - (2) notified the Secretary-General, prior to the entry into force of such amendment, that the amendment shall enter into force for it only after a subsequent notification of its acceptance.
- (g) (i) A Party that has notified an objection under subparagraph (f)(ii)(1) may subsequently notify the Secretary-General that it accepts the amendment. Such amendment shall enter into force for such Party six months after the date of its notification of acceptance, or the date on which the amendment enters into force, whichever is the later date.
- (ii) If a Party that has made a notification referred to in subparagraph (f)(ii)(2) notifies the Secretary-General of its acceptance with respect to an amendment, such amendment shall enter into force for such Party six months after the date of its notification of acceptance, or the date on which the amendment enters into force, whichever is the later date.

3 Amendment by a Conference:

- (a) Upon the request of a Party concurred in by at least one-third of the Parties, the Organization shall convene a Conference of Parties to consider amendments to this Convention.
- (b) An amendment adopted by such a Conference by a two-thirds majority of the Parties present and voting shall be communicated by the Secretary-General to all Parties for acceptance.
- (c) Unless the Conference decides otherwise, the amendment shall be deemed to have been accepted and shall enter into force in accordance with the procedures specified in paragraphs 2(e) and (f) respectively.

4 Any Party that has declined to accept an amendment to the Annex shall be treated as a non-Party only for the purpose of application of that amendment.

5 Any notification under this Article shall be made in writing to the Secretary-General.

6 The Secretary-General shall inform the Parties and Members of the Organization of:

- (a) any amendment that enters into force and the date of its entry into force generally and for each Party; and
- (b) any notification made under this Article.

Article 20 *Denunciation*

1 This Convention may be denounced by any Party at any time after the expiry of two years from the date on which this Convention enters into force for that Party.

2 Denunciation shall be effected by written notification to the Depositary, to take effect one year after receipt or such longer period as may be specified in that notification.

Article 21 *Depositary*

1 This Convention shall be deposited with the Secretary-General, who shall transmit certified copies of this Convention to all States which have signed this Convention or acceded thereto.

2 In addition to the functions specified elsewhere in this Convention, the Secretary-General shall:

(a) inform all States that have signed this Convention, or acceded thereto, of:

(i) each new signature or deposit of an instrument of ratification, acceptance, approval or accession, together with the date thereof;

(ii) the date of entry into force of this Convention; and

(iii) the deposit of any instrument of denunciation from the Convention, together with the date on which it was received and the date on which the denunciation takes effect; and

(b) as soon as this Convention enters into force, transmit the text thereof to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

Article 22 *Languages*

This Convention is established in a single original in the Arabic, Chinese, English, French, Russian and Spanish languages, each text being equally authentic.

DONE AT LONDON this thirteenth day of February, two thousand and four.

IN WITNESS WHEREOF the undersigned, being duly authorized by their respective Governments for that purpose, have signed this Convention.

Annex
**REGULATIONS FOR THE CONTROL AND MANAGEMENT OF SHIPS' BALLAST
WATER AND SEDIMENTS**

SECTION A – GENERAL PROVISIONS

Regulation A-1 *Definitions*

For the purposes of this Annex:

- 1 “Anniversary date” means the day and the month of each year corresponding to the date of expiry of the Certificate.
- 2 “Ballast Water Capacity” means the total volumetric capacity of any tanks, spaces or compartments on a ship used for carrying, loading or discharging Ballast Water, including any multi-use tank, space or compartment designed to allow carriage of Ballast Water.
- 3 “Company” means the owner of the ship or any other organization or person such as the manager, or the bareboat charterer, who has assumed the responsibility for operation of the ship from the owner of the ship and who on assuming such responsibility has agreed to take over all the duties and responsibilities imposed by the International Safety Management Code.^①
- 4 “Constructed” in respect of a ship means a stage of construction where:
 - .1 the keel is laid; or
 - .2 construction identifiable with the specific ship begins;
 - .3 assembly of the ship has commenced comprising at least 50 tonnes or 1 percent of the estimated mass of all structural material, whichever is less; or
 - .4 the ship undergoes a major conversion.
- 5 “Major conversion” means a conversion of a ship:
 - .1 which changes its ballast water carrying capacity by 15 percent or greater, or
 - .2 which changes the ship type, or
 - .3 which, in the opinion of the Administration, is projected to prolong its life by ten years or more, or
 - .4 which results in modifications to its ballast water system other than component replacement-in-kind.

Conversion of a ship to meet the provisions of regulation D-1 shall not be deemed to constitute a major conversion for the purpose of this Annex.

^① Refer to the ISM Code adopted by the Organization by resolution A.741(18), as amended.

6 “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 Convention, “from the nearest land” off the north-eastern coast of Australia shall mean from a line drawn from a point on the coast of Australia in

latitude 11°00′ S, longitude 142°08′ E

to a point in latitude 10°35′ S, longitude 141°55′ E

thence to a point latitude 10°00′ S, longitude 142°00′ E

thence to a point latitude 9°10′ S, longitude 143°52′ E

thence to a point latitude 9°00′ S, longitude 144°30′ E

thence to a point latitude 10°41′ S, longitude 145°00′ E

thence to a point latitude 13°00′ S, longitude 145°00′ E

thence to a point latitude 15°00′ S, longitude 146°00′ E

thence to a point latitude 17°30′ S, longitude 147°00′ E

thence to a point latitude 21°00′ S, longitude 152°55′ E

thence to a point latitude 24°30′ S, longitude 154°00′ E

thence to a point on the coast of Australia in latitude 24°42′ S, longitude 153°15′ E.

7 “Active Substance” means a substance or organism, including a virus or a fungus, that has a general or specific action on or against Harmful Aquatic Organisms and Pathogens.

Regulation A-2 *General Applicability*

Except where expressly provided otherwise, the discharge of Ballast Water shall only be conducted through Ballast Water Management in accordance with the provisions of this Annex.

Regulation A-3 *Exceptions*

The requirements of regulation B-3, or any measures adopted by a Party pursuant to Article 2.3 and Section C, shall not apply to:

- 1 the uptake or discharge of Ballast Water and Sediments necessary for the purpose of ensuring the safety of a ship in emergency situations or saving life at sea; or
- 2 the accidental discharge or ingress of Ballast Water and Sediments resulting from damage to a ship or its equipment:
 - .1 provided that all reasonable precautions have been taken before and after the occurrence of the damage or discovery of the damage or discharge for the purpose of preventing or minimizing the discharge; and
 - .2 unless the owner, Company or officer in charge wilfully or recklessly caused damage; or
- 3 the uptake and discharge of Ballast Water and Sediments when being used for the purpose of avoiding or minimizing pollution incidents from the ship; or

- 4 the uptake and subsequent discharge on the high seas of the same Ballast Water and Sediments; or
- 5 the discharge of Ballast Water and Sediments from a ship at the same location where the whole of that Ballast Water and those Sediments originated and provided that no mixing with unmanaged Ballast Water and Sediments from other areas has occurred. If mixing has occurred, the Ballast Water taken from other areas is subject to Ballast Water Management in accordance with this Annex.

Regulation A-4 *Exemptions*

1 A Party or Parties, in waters under their jurisdiction, may grant exemptions to any requirements to apply regulations B-3 or C-1, in addition to those exemptions contained elsewhere in this Convention, but only when they are:

- .1 granted to a ship or ships on a voyage or voyages between specified ports or locations; or to a ship which operates exclusively between specified ports or locations;
- .2 effective for a period of no more than five years subject to intermediate review;
- .3 granted to ships that do not mix Ballast Water or Sediments other than between the ports or locations specified in paragraph 1.1; and
- .4 granted based on the Guidelines on risk assessment developed by the Organization.

2 Exemptions granted pursuant to paragraph 1 shall not be effective until after communication to the Organization and circulation of relevant information to the Parties.

3 Any exemptions granted under this regulation shall not impair or damage the environment, human health, property or resources of adjacent or other States. Any State that the Party determines may be adversely affected shall be consulted, with a view to resolving any identified concerns.

4 Any exemptions granted under this regulation shall be recorded in the Ballast Water record book.

Regulation A-5 *Equivalent compliance*

Equivalent compliance with this Annex for pleasure craft used solely for recreation or competition or craft used primarily for search and rescue, less than 50 metres in length overall, and with a maximum Ballast Water capacity of 8 cubic metres, shall be determined by the Administration taking into account Guidelines developed by the Organization.

SECTION B – MANAGEMENT AND CONTROL REQUIREMENTS FOR SHIPS

Regulation B-1 *Ballast Water Management Plan*

Each ship shall have on board and implement a Ballast Water Management plan. Such a plan shall be approved by the Administration taking into account Guidelines developed by the Organization. The Ballast Water Management plan shall be specific to each ship and shall at least:

- 1 detail safety procedures for the ship and the crew associated with Ballast Water Management as required by this Convention;
- 2 provide a detailed description of the actions to be taken to implement the Ballast Water Management requirements and supplemental Ballast Water Management practices as set forth in this Convention;
- 3 detail the procedures for the disposal of Sediments:
 - .1 at sea; and
 - .2 to shore;
- 4 include the procedures for coordinating shipboard Ballast Water Management that involves discharge to the sea with the authorities of the State into whose waters such discharge will take place;
- 5 designate the officer on board in charge of ensuring that the plan is properly implemented;
- 6 contain the reporting requirements for ships provided for under this Convention; and
- 7 be written in the working language of the ship. If the language used is not English, French or Spanish, a translation into one of these languages shall be included.

Regulation B-2 *Ballast Water Record Book*

- 1 Each ship shall have on board a Ballast Water record book that may be an electronic record system, or that may be integrated into another record book or system and, which shall at least contain the information specified in Appendix II.
- 2 Ballast Water record book entries shall be maintained on board the ship for a minimum period of two years after the last entry has been made and thereafter in the Company's control for a minimum period of three years.
- 3 In the event of the discharge of Ballast Water pursuant to regulations A-3, A-4 or B-3.6 or in the event of other accidental or exceptional discharge of Ballast Water not otherwise exempted by this Convention, an entry shall be made in the Ballast Water record book describing the circumstances of, and the reason for, the discharge.
- 4 The Ballast Water record book shall be kept readily available for inspection at all reasonable times and, in the case of an unmanned ship under tow, may be kept on the towing ship.
- 5 Each operation concerning Ballast Water shall be fully recorded without delay in the Ballast Water record book. Each entry shall be signed by the officer in charge of the operation concerned and each completed page shall be signed by the master. The entries in the Ballast Water record book shall be in a working language of the ship. If that language is not English, French or Spanish, the entries shall contain a translation into one of those languages. When entries in an official national language of the State whose flag the ship is entitled to fly are also used, these shall prevail in case of a dispute or discrepancy.

6 Officers duly authorized by a Party may inspect the Ballast Water record book on board any ship to which this regulation applies while the ship is in its port or offshore terminal, and may make a copy of any entry, and require the master to certify that the copy is a true copy. Any copy so certified shall be admissible in any judicial proceeding as evidence of the facts stated in the entry. The inspection of a Ballast Water record book and the taking of a certified copy shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

Regulation B-3 *Ballast Water Management for Ships*

- 1 A ship constructed before 2009:
 - .1 with a Ballast Water Capacity of between 1,500 and 5,000 cubic metres, inclusive, shall conduct Ballast Water Management that at least meets the standard described in regulation D-1 or regulation D-2 until 2014, after which time it shall at least meet the standard described in regulation D-2;
 - .2 with a Ballast Water Capacity of less than 1,500 or greater than 5,000 cubic metres shall conduct Ballast Water Management that at least meets the standard described in regulation D-1 or regulation D-2 until 2016, after which time it shall at least meet the standard described in regulation D-2.
- 2 A ship to which paragraph 1 applies shall comply with paragraph 1 not later than the first intermediate or renewal survey, whichever occurs first, after the anniversary date of delivery of the ship in the year of compliance with the standard applicable to the ship.
- 3 A ship constructed in or after 2009 with a Ballast Water Capacity of less than 5,000 cubic metres shall conduct Ballast Water Management that at least meets the standard described in regulation D-2.
- 4 A ship constructed in or after 2009, but before 2012, with a Ballast Water Capacity of 5,000 cubic metres or more shall conduct Ballast Water Management in accordance with paragraph 1.2.
- 5 A ship constructed in or after 2012 with a Ballast Water Capacity of 5000 cubic metres or more shall conduct Ballast Water Management that at least meets the standard described in regulation D-2.
- 6 The requirements of this regulation do not apply to ships that discharge Ballast Water to a reception facility designed taking into account the Guidelines developed by the Organization for such facilities.
- 7 Other methods of Ballast Water Management may also be accepted as alternatives to the requirements described in paragraphs 1 to 5, provided that such methods ensure at least the same level of protection to the environment, human health, property or resources, and are approved in principle by the Committee.

Regulation B-4 *Ballast Water Exchange*

- 1 A ship conducting Ballast Water exchange to meet the standard in regulation D-1 shall:
 - .1 whenever possible, conduct such Ballast Water exchange at least 200 nautical miles from the nearest land and in water at least 200 metres in depth, taking into account the Guidelines developed by the Organization;
 - .2 in cases where the ship is unable to conduct Ballast Water exchange in accordance with paragraph 1.1, such Ballast Water exchange shall be conducted taking into account the Guidelines described in paragraph 1.1 and as far from the nearest land as possible, and in all cases at least 50 nautical miles from the nearest land and in water at least 200 metres in depth.
- 2 In sea areas where the distance from the nearest land or the depth does not meet the parameters described in paragraph 1.1 or 1.2, the port State may designate areas, in consultation with adjacent or other States, as appropriate, where a ship may conduct Ballast Water exchange, taking into account the Guidelines described in paragraph 1.1.
- 3 A ship shall not be required to deviate from its intended voyage, or delay the voyage, in order to comply with any particular requirement of paragraph 1.
- 4 A ship conducting ballast water exchange shall not be required to comply with paragraphs 1 or 2, as appropriate, if the master reasonably decides that such exchange would threaten the safety or stability of the ship, its crew, or its passengers because of adverse weather, ship design or stress, equipment failure, or any other extraordinary condition.
- 5 When a ship is required to conduct ballast water exchange and does not do so in accordance with this regulation, the reasons shall be entered in the Ballast Water record book.

Regulation B-5 *Sediment Management for Ships*

- 1 All ships shall remove and dispose of Sediments from spaces designated to carry Ballast Water in accordance with the provisions of the ship's Ballast Water Management plan.
- 2 Ships described in regulation B-3.3 to B-3.5 should, without compromising safety or operational efficiency, be designed and constructed with a view to minimize the uptake and undesirable entrapment of Sediments, facilitate removal of Sediments, and provide safe access to allow for Sediment removal and sampling, taking into account guidelines developed by the Organization. Ships described in regulation B-3.1 should, to the extent practicable, comply with this paragraph.

Regulation B-6 *Duties of Officers and Crew*

Officers and crew shall be familiar with their duties in the implementation of Ballast Water Management particular to the ship on which they serve and shall, appropriate to their duties, be familiar with the ship's Ballast Water Management plan.

SECTION C – SPECIAL REQUIREMENTS IN CERTAIN AREAS

Regulation C-1 *Additional Measures*

- 1 If a Party, individually or jointly with other Parties, determines that measures in addition to those in Section B are necessary to prevent, reduce, or eliminate the transfer of Harmful Aquatic Organisms and Pathogens through ships' Ballast Water and Sediments, such Party or Parties may, consistent with international law, require ships to meet a specified standard or requirement.
- 2 Prior to establishing standards or requirements under paragraph 1, a Party or Parties should consult with adjacent or other States that may be affected by such standards or requirements.
- 3 A Party or Parties intending to introduce additional measures in accordance with paragraph 1 shall:
 - .1 take into account the Guidelines developed by the Organization.
 - .2 communicate their intention to establish additional measure(s) to the Organization at least 6 months, except in emergency or epidemic situations, prior to the projected date of implementation of the measure(s). Such communication shall include:
 - .1 the precise co-ordinates where additional measure(s) is/are applicable;
 - .2 the need and reasoning for the application of the additional measure(s), including, whenever possible, benefits;
 - .3 a description of the additional measure(s); and
 - .4 any arrangements that may be provided to facilitate ships' compliance with the additional measure(s).
 - .3 to the extent required by customary international law as reflected in the United Nations Convention on the Law of the Sea, as appropriate, obtain the approval of the Organization.
- 4 A Party or Parties, in introducing such additional measures, shall endeavor to make available all appropriate services, which may include but are not limited to notification to mariners of areas, available and alternative routes or ports, as far as practicable, in order to ease the burden on the ship.
- 5 Any additional measures adopted by a Party or Parties shall not compromise the safety and security of the ship and in any circumstances not conflict with any other convention with which the ship must comply.
- 6 A Party or Parties introducing additional measures may waive these measures for a period of time or in specific circumstances as they deem fit.

Regulation C-2 *Warnings Concerning Ballast Water Uptake in Certain Areas and Related Flag State Measures*

- 1 A Party shall endeavor to notify mariners of areas under their jurisdiction where ships should not uptake Ballast Water due to known conditions. The Party shall include in such notices the precise coordinates of the area or areas, and, where possible, the location of any alternative area or areas for the uptake of Ballast Water. Warnings may be issued for areas:

- .1 known to contain outbreaks, infestations, or populations of Harmful Aquatic Organisms and Pathogens (e.g., toxic algal blooms) which are likely to be of relevance to Ballast Water uptake or discharge;
- .2 near sewage outfalls; or
- .3 where tidal flushing is poor or times during which a tidal stream is known to be more turbid.

2 In addition to notifying mariners of areas in accordance with the provisions of paragraph 1, a Party shall notify the Organization and any potentially affected coastal States of any areas identified in paragraph 1 and the time period such warning is likely to be in effect. The notice to the Organization and any potentially affected coastal States shall include the precise coordinates of the area or areas, and, where possible, the location of any alternative area or areas for the uptake of Ballast Water. The notice shall include advice to ships needing to uptake Ballast Water in the area, describing arrangements made for alternative supplies. The Party shall also notify mariners, the Organization, and any potentially affected coastal States when a given warning is no longer applicable.

Regulation C-3 *Communication of Information*

The Organization shall make available, through any appropriate means, information communicated to it under regulations C-1 and C-2.

SECTION D – STANDARDS FOR BALLAST WATER MANAGEMENT

Regulation D-1 *Ballast Water Exchange Standard*

1 Ships performing Ballast Water exchange in accordance with this regulation shall do so with an efficiency of at least 95 percent volumetric exchange of Ballast Water.

2 For ships exchanging ballast water by the pumping-through method, pumping through three times the volume of each ballast water tank shall be considered to meet the standard described in paragraph 1. Pumping through less than three times the volume may be accepted provided the ship can demonstrate that at least 95 percent volumetric exchange is met.

Regulation D-2 *Ballast Water Performance Standard*

1 Ships conducting Ballast Water Management in accordance with this regulation shall discharge less than 10 viable organisms per cubic metre greater than or equal to 50 micrometres in minimum dimension and less than 10 viable organisms per millilitre less than 50 micrometres in minimum dimension and greater than or equal to 10 micrometres in minimum dimension; and discharge of the indicator microbes shall not exceed the specified concentrations described in paragraph 2.

2 Indicator microbes, as a human health standard, shall include:

- .1 Toxicogenic *Vibrio cholerae* (O1 and O139) with less than 1 colony forming unit (cfu) per 100 millilitres or less than 1 cfu per 1 gram (wet weight) zooplankton samples;

- .2 Escherichia coli less than 250 cfu per 100 millilitres;
- .3 Intestinal Enterococci less than 100 cfu per 100 milliliters.

Regulation D-3 *Approval Requirements for Ballast Water Management Systems*

1 Except as specified in paragraph 2, Ballast Water Management systems used to comply with this Convention must be approved by the Administration taking into account Guidelines developed by the Organization.

2 Ballast Water Management systems which make use of Active Substances or preparations containing one or more Active Substances to comply with this Convention shall be approved by the Organization, based on a procedure developed by the Organization. This procedure shall describe the approval and withdrawal of approval of Active Substances and their proposed manner of application. At withdrawal of approval, the use of the relevant Active Substance or Substances shall be prohibited within 1 year after the date of such withdrawal.

3 Ballast Water Management systems used to comply with this Convention must be safe in terms of the ship, its equipment and the crew.

Regulation D-4 *Prototype Ballast Water Treatment Technologies*

1 For any ship that, prior to the date that the standard in regulation D-2 would otherwise become effective for it, participates in a program approved by the Administration to test and evaluate promising Ballast Water treatment technologies, the standard in regulation D-2 shall not apply to that ship until five years from the date on which the ship would otherwise be required to comply with such standard.

2 For any ship that, after the date on which the standard in regulation D-2 has become effective for it, participates in a program approved by the Administration, taking into account Guidelines developed by the Organization, to test and evaluate promising Ballast Water technologies with the potential to result in treatment technologies achieving a standard higher than that in regulation D-2, the standard in regulation D-2 shall cease to apply to that ship for five years from the date of installation of such technology.

3 In establishing and carrying out any program to test and evaluate promising Ballast Water technologies, Parties shall:

- .1 take into account Guidelines developed by the Organization, and
- .2 allow participation only by the minimum number of ships necessary to effectively test such technologies.

4 Throughout the test and evaluation period, the treatment system must be operated consistently and as designed.

Regulation D-5 *Review of Standards by the Organization*

1 At a meeting of the Committee held no later than three years before the earliest effective date of the standard set forth in regulation D-2, the Committee shall undertake a review which includes a determination of whether appropriate technologies are available to achieve the standard, an assessment of the criteria in paragraph 2, and an assessment of the socio-economic effect(s) specifically in relation to the developmental needs of developing countries, particularly small island developing States. The Committee shall also undertake periodic reviews, as appropriate, to examine the applicable requirements for ships described in regulation B-3.1 as well as any other aspect of Ballast Water Management addressed in this Annex, including any Guidelines developed by the Organization.

2 Such reviews of appropriate technologies shall also take into account:

- .1 safety considerations relating to the ship and the crew;
- .2 environmental acceptability, i.e., not causing more or greater environmental impacts than they solve;
- .3 practicability, i.e., compatibility with ship design and operations;
- .4 cost effectiveness, i.e., economics; and
- .5 biological effectiveness in terms of removing, or otherwise rendering not viable, Harmful Aquatic Organisms and Pathogens in Ballast Water.

3 The Committee may form a group or groups to conduct the review(s) described in paragraph 1. The Committee shall determine the composition, terms of reference and specific issues to be addressed by any such group formed. Such groups may develop and recommend proposals for amendment of this Annex for consideration by the Parties. Only Parties may participate in the formulation of recommendations and amendment decisions taken by the Committee.

4 If, based on the reviews described in this regulation, the Parties decide to adopt amendments to this Annex, such amendments shall be adopted and enter into force in accordance with the procedures contained in Article 19 of this Convention.

SECTION E – SURVEY AND CERTIFICATION REQUIREMENTS FOR BALLAST WATER MANAGEMENT

Regulation E-1 *Surveys*

1 Ships of 400 gross tonnage and above to which this Convention applies, excluding floating platforms, FSUs and FPSOs, shall be subject to surveys specified below:

- .1 An initial survey before the ship is put in service or before the Certificate required under regulation E-2 or E-3 is issued for the first time. This survey shall verify that the Ballast Water Management plan required by regulation B-1 and any associated structure, equipment, systems, fitting, arrangements and material or processes comply fully with the requirements of this Convention.

- .2 A renewal survey at intervals specified by the Administration, but not exceeding five years, except where regulation E-5.2, E-5.5, E-5.6, or E-5.7 is applicable. This survey shall verify that the Ballast Water Management plan required by regulation B-1 and any associated structure, equipment, systems, fitting, arrangements and material or processes comply fully with the applicable requirements of this Convention.
 - .3 An intermediate survey within three months before or after the second Anniversary date or within three months before or after the third Anniversary date of the Certificate, which shall take the place of one of the annual surveys specified in paragraph 1.4. The intermediate surveys shall ensure that the equipment, associated systems and processes for Ballast Water Management fully comply with the applicable requirements of this Annex and are in good working order. Such intermediate surveys shall be endorsed on the Certificate issued under regulation E-2 or E-3.
 - .4 An annual survey within three months before or after each Anniversary date, including a general inspection of the structure, any equipment, systems, fittings, arrangements and material or processes associated with the Ballast Water Management plan required by regulation B-1 to ensure that they have been maintained in accordance with paragraph 9 and remain satisfactory for the service for which the ship is intended. Such annual surveys shall be endorsed on the Certificate issued under regulation E-2 or E-3.
 - .5 An additional survey either general or partial, according to the circumstances, shall be made after a change, replacement, or significant repair of the structure, equipment, systems, fittings, arrangements and material necessary to achieve full compliance with this Convention. The survey shall be such as to ensure that any such change, replacement, or significant repair has been effectively made, so that the ship complies with the requirements of this Convention. Such surveys shall be endorsed on the Certificate issued under regulation E-2 or E-3.
- 2 The Administration shall establish appropriate measures for ships that are not subject to the provisions of paragraph 1 in order to ensure that the applicable provisions of this Convention are complied with.
- 3 Surveys of ships for the purpose of enforcement of the provisions of this Convention shall be carried out by officers of the Administration. The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it.
- 4 An Administration nominating surveyors or recognizing organizations to conduct surveys, as described in paragraph 3 shall, as a minimum, empower such nominated surveyors or recognized organizations^① to:

① Refer to the guidelines adopted by the Organization by resolution A.739(18), as may be amended by the Organization, and the specifications adopted by the Organization by resolution A.789(19), as may be amended by the Organization.

- .1 require a ship that they survey to comply with the provisions of this Convention; and
- .2 carry out surveys and inspections if requested by the appropriate authorities of a port State that is a Party.

5 The Administration shall notify the Organization of the specific responsibilities and conditions of the authority delegated to the nominated surveyors or recognized organizations, for circulation to Parties for the information of their officers.

6 When the Administration, a nominated surveyor, or a recognized organization determines that the ship's Ballast Water Management does not conform to the particulars of the Certificate required under regulation E-2 or E-3 or is such that the ship is not fit to proceed to sea without presenting a threat of harm to the environment, human health, property or resources, such surveyor or organization shall immediately ensure that corrective action is taken to bring the ship into compliance. A surveyor or organization shall be notified immediately, and it shall ensure that the Certificate is not issued or is withdrawn as appropriate. If the ship is in the port of another Party, the appropriate authorities of the port State shall be notified immediately. When an officer of the Administration, a nominated surveyor, or a recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this regulation, including any action described in Article 9.

7 Whenever an accident occurs to a ship or a defect is discovered which substantially affects the ability of the ship to conduct Ballast Water Management in accordance with this Convention, the owner, operator or other person in charge of the ship shall report at the earliest opportunity to the Administration, the recognized organization or the nominated surveyor responsible for issuing the relevant Certificate, who shall cause investigations to be initiated to determine whether a survey as required by paragraph 1 is necessary. If the ship is in a port of another Party, the owner, operator or other person in charge shall also report immediately to the appropriate authorities of the port State and the nominated surveyor or recognized organization shall ascertain that such report has been made.

8 In every case, the Administration concerned shall fully guarantee the completeness and efficiency of the survey and shall undertake to ensure the necessary arrangements to satisfy this obligation.

9 The condition of the ship and its equipment, systems and processes shall be maintained to conform with the provisions of this Convention to ensure that the ship in all respects will remain fit to proceed to sea without presenting a threat of harm to the environment, human health, property or resources.

10 After any survey of the ship under paragraph 1 has been completed, no change shall be made in the structure, any equipment, fittings, arrangements or material associated with the Ballast Water Management plan required by regulation B-1 and covered by the survey without the sanction of the Administration, except the direct replacement of such equipment or fittings.

Regulation E-2 *Issuance or Endorsement of a Certificate*

1 The Administration shall ensure that a ship to which regulation E-1 applies is issued a Certificate after successful completion of a survey conducted in accordance with regulation E-1. A Certificate issued under the authority of a Party shall be accepted by the other Parties and regarded for all purposes covered by this Convention as having the same validity as a Certificate issued by them.

2 Certificates shall be issued or endorsed either by the Administration or by any person or organization duly authorized by it. In every case, the Administration assumes full responsibility for the Certificate.

Regulation E-3 *Issuance or Endorsement of a Certificate by Another Party*

1 At the request of the Administration, another Party may cause a ship to be surveyed and, if satisfied that the provisions of this Convention are complied with, shall issue or authorize the issuance of a Certificate to the ship, and where appropriate, endorse or authorize the endorsement of that Certificate on the ship, in accordance with this Annex.

2 A copy of the Certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.

3 A Certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a Certificate issued by the Administration.

4 No Certificate shall be issued to a ship entitled to fly the flag of a State which is not a Party.

Regulation E-4 *Form of the Certificate*

The Certificate shall be drawn up in the official language of the issuing Party, in the form set forth in Appendix I. If the language used is neither English, French nor Spanish, the text shall include a translation into one of these languages.

Regulation E-5 *Duration and Validity of the Certificate*

1 A Certificate shall be issued for a period specified by the Administration that shall not exceed five years.

2 For renewal surveys:

.1 Notwithstanding the requirements of paragraph 1, when the renewal survey is completed within three months before the expiry date of the existing Certificate, the new Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing Certificate.

.2 When the renewal survey is completed after the expiry date of the existing Certificate, the new Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of expiry of the existing Certificate.

- .3 When the renewal survey is completed more than three months before the expiry date of the existing Certificate, the new Certificate shall be valid from the date of completion of the renewal survey to a date not exceeding five years from the date of completion of the renewal survey.
- 3 If a Certificate is issued for a period of less than five years, the Administration may extend the validity of the Certificate beyond the expiry date to the maximum period specified in paragraph 1, provided that the surveys referred to in regulation E-1.1.3 applicable when a Certificate is issued for a period of five years are carried out as appropriate.
- 4 If a renewal survey has been completed and a new Certificate cannot be issued or placed on board the ship before the expiry date of the existing Certificate, the person or organization authorized by the Administration may endorse the existing Certificate and such a Certificate shall be accepted as valid for a further period which shall not exceed five months from the expiry date.
- 5 If a ship at the time when the Certificate expires is not in a port in which it is to be surveyed, the Administration may extend the period of validity of the Certificate but this extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. No Certificate shall be extended for a period longer than three months, and a ship to which such extension is granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having a new Certificate. When the renewal survey is completed, the new Certificate shall be valid to a date not exceeding five years from the date of expiry of the existing Certificate before the extension was granted.
- 6 A Certificate issued to a ship engaged on short voyages which has not been extended under the foregoing provisions of this regulation may be extended by the Administration for a period of grace of up to one month from the date of expiry stated on it. When the renewal survey is completed, the new Certificate shall be valid to a date not exceeding five years from the date of expiry of the existing Certificate before the extension was granted.
- 7 In special circumstances, as determined by the Administration, a new Certificate need not be dated from the date of expiry of the existing Certificate as required by paragraph 2.2, 5 or 6 of this regulation. In these special circumstances, the new Certificate shall be valid to a date not exceeding five years from the date of completion of the renewal survey.
- 8 If an annual survey is completed before the period specified in regulation E-1, then:
 - .1 the Anniversary date shown on the Certificate shall be amended by endorsement to a date which shall not be more than three months later than the date on which the survey was completed;
 - .2 the subsequent annual or intermediate survey required by regulation E-1 shall be completed at the intervals prescribed by that regulation using the new Anniversary date;

- .3 the expiry date may remain unchanged provided one or more annual surveys, as appropriate, are carried out so that the maximum intervals between the surveys prescribed by regulation E-1 are not exceeded.
- 9 A Certificate issued under regulation E-2 or E-3 shall cease to be valid in any of the following cases:
- .1 if the structure, equipment, systems, fittings, arrangements and material necessary to comply fully with this Convention is changed, replaced or significantly repaired and the Certificate is not endorsed in accordance with this Annex;
 - .2 upon transfer of the ship to the flag of another State. A new Certificate shall only be issued when the Party issuing the new Certificate is fully satisfied that the ship is in compliance with the requirements of regulation E-1. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration copies of the Certificates carried by the ship before the transfer and, if available, copies of the relevant survey reports;
 - .3 if the relevant surveys are not completed within the periods specified under regulation E-1.1; or
 - .4 if the Certificate is not endorsed in accordance with regulation E-1.1.

APPENDIX I

FORM OF INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE
INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

Issued under the provisions of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (hereinafter referred to as "the Convention") under the authority of the Government of

.....
(full designation of the country)

By
(full designation of the competent person or organization authorized under the provisions of the Convention)

Particulars of ship^①

Name of ship
Distinctive number or letters
Port of registry
Gross Tonnage
IMO number^②
Date of Construction
Ballast Water Capacity (in cubic metres)

Details of Ballast Water Management Method(s) Used

Method of Ballast Water Management used
Date installed (if applicable)
Name of manufacturer (if applicable)

The principal Ballast Water Management method(s) employed on this ship is/are:

- in accordance with regulation D-1
- in accordance with regulation D-2
(describe)
- the ship is subject to regulation D-4

① Alternatively, the particulars of the ship may be placed horizontally in boxes.
② IMO Ship Identification Number Scheme adopted by the Organization by resolution A.600(15).

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEY(S)

THIS IS TO CERTIFY that at a survey required by regulation E-1 of the Annex to the Convention, the ship was found to comply with the relevant provisions of the Convention:

Annual survey: Signed
(Signature of duly authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

Annual survey^①/Intermediate^① survey: Signed
(Signature of duly authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

Annual survey^①/Intermediate^① survey: Signed
(Signature of duly authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

Annual survey: Signed
(Signature of duly authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

① Delete as appropriate.

ANNUAL/INTERMEDIATE SURVEY IN ACCORDANCE WITH REGULATION E-5.8.3

THIS IS TO CERTIFY that, at an annual/intermediate^① survey in accordance with regulation E-5.8.3 of the Annex to the Convention, the ship was found to comply with the relevant provisions of the Convention:

Signed
(Signature of authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

**ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN 5 YEARS
WHERE REGULATION E-5.3 APPLIES**

The ship complies with the relevant provisions of the Convention, and this Certificate shall, in accordance with regulation E-5.3 of the Annex to the Convention, be accepted as valid until

Signed
(Signature of authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

**ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND
REGULATION E-5.4 APPLIES**

The ship complies with the relevant provisions of the Convention and this Certificate shall, in accordance with regulation E-5.4 of the Annex to the Convention, be accepted as valid until

Signed
(Signature of authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

① Delete as appropriate.

**ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL
REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE
REGULATION E-5.5 OR E-5.6 APPLIES**

This Certificate shall, in accordance with regulation E-5.5 or E-5.6^① of the Annex to the Convention,
be accepted as valid until

Signed
(Signature of authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

**ENDORSEMENT FOR ADVANCEMENT OF ANNIVERSARY DATE WHERE
REGULATION E-5.8 APPLIES**

In accordance with regulation E-5.8 of the Annex to the Convention the new Anniversary date is

Signed
(Signature of authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

In accordance with regulation E-5.8 of the Annex to the Convention the new Anniversary date is

Signed
(Signature of authorized official)
Place
Date

(Seal or stamp of the authority, as appropriate)

① Delete as appropriate.

APPENDIX II
FORM OF BALLAST WATER RECORD BOOK

**INTERNATIONAL CONVENTION FOR THE CONTROL AND MANAGEMENT OF SHIPS’
BALLAST WATER AND SEDIMENTS**

Period From: To:
Name of Ship
IMO number
Gross tonnage
Flag
Total Ballast Water capacity (in cubic metres)
The ship is provided with a Ballast Water Management plan
Diagram of ship indicating ballast tanks:

1 Introduction

In accordance with regulation B-2 of the Annex to the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, a record is to be kept of each Ballast Water operation. This includes discharges at sea and to reception facilities.

2 Ballast Water and Ballast Water Management

“Ballast Water” means water with its suspended matter taken on board a ship to control trim, list, draught, stability, or stresses of a ship. Management of Ballast Water shall be in accordance with an approved Ballast Water Management plan and taking into account Guidelines³ developed by the Organization.^①

3 Entries in the Ballast Water Record Book

Entries in the Ballast Water record book shall be made on each of the following occasions:

3.1 When Ballast Water is taken on board:

- .1 Date, time and location port or facility of uptake (port or lat/long), depth if outside port
- .2 Estimated volume of uptake in cubic metres
- .3 Signature of the officer in charge of the operation.

3.2 Whenever Ballast Water is circulated or treated for Ballast Water Management purposes:

① Refer to the Guidelines for the control and management of ships’ ballast water to minimize the transfer of harmful aquatic organisms and pathogens adopted by the Organization by resolution A.868(20).

- .1 Date and time of operation
 - .2 Estimated volume circulated or treated (in cubic metres)
 - .3 Whether conducted in accordance with the Ballast Water Management plan
 - .4 Signature of the officer in charge of the operation.
- 3.3 When Ballast Water is discharged into the sea:
- .1 Date, time and location port or facility of discharge (port or lat/long)
 - .2 Estimated volume discharged in cubic metres plus remaining volume in cubic metres
 - .3 Whether approved Ballast Water Management plan had been implemented prior to discharge
 - .4 Signature of the officer in charge of the operation.
- 3.4 When Ballast Water is discharged to a reception facility:
- .1 Date, time, and location of uptake
 - .2 Date, time, and location of discharge
 - .3 Port or facility
 - .4 Estimated volume discharged or taken up, in cubic metres
 - .5 Whether approved Ballast Water Management plan had been implemented prior to discharge
 - .6 Signature of officer in charge of the operation.
- 3.5 Accidental or other exceptional uptake or discharges of Ballast Water:
- .1 Date and time of occurrence
 - .2 Port or position of the ship at time of occurrence
 - .3 Estimated volume of Ballast Water discharged
 - .4 Circumstances of uptake, discharge, escape or loss, the reason therefore and general remarks
 - .5 Whether approved Ballast Water Management plan had been implemented prior to discharge
 - .6 Signature of officer in charge of the operation.

4 Volume of Ballast Water

The volume of Ballast Water onboard should be estimated in cubic metres. The Ballast Water record book contains many references to estimated volume of Ballast Water. It is recognized that the accuracy of estimating volumes of ballast is left to interpretation.

RECORD OF BALLAST WATER OPERATIONS

SAMPLE BALLAST WATER RECORD BOOK PAGE

Name of Ship:

Distinctive number or letters

Date	Item (number)	Record of operations/signature of officers in charge

Signature of master