

A Guide to Canada's *Ballast Water Control and Management Regulations*

<p>Responsible Authority</p> <p>The Director Operations and Environmental Programs is responsible for this document, including any change, correction, or update.</p>	<p>Approval</p> <hr/> <p>Director Operations and Environmental Programs</p> <p>Date signed:</p>
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Date Issued: January 1, 2000

Date Revised: March 9, 2001

June 8, 2001

June 28, 2006

Last Review: November 2005

Next Review: November 2006

DOCUMENT INFORMATION

DOCUMENT INFORMATION			
Title	A Guide to Canada's Ballast Water Control and Management Regulations		
TP No.	13617 E	Edition	
RDIMS No.	1412517	ISBN/ISSN	
Originator	Environmental Protection (AMSEE) Tower C, Place de Ville 330 Sparks Street, 10th Floor Ottawa, Ontario - K1A 0N8	Telephone	613-991-3170
		Fax	613-993-8196
		E-mail	MarineSafety@tc.gc.ca
		URL	http://www.tc.gc.ca/MarineSafety

REVISION CHART

Last Review	November 2005			
Next Review	November 2006			
Revision No.	Date of Issue	Affected Sections	Author(s)	Brief Description of Change
1	March 9, 2001	1.2 and 1.3 of Annex V		Revised contact for submitting forms
2	June 8, 2001	4.1 and 9.1.2		Application section amended to make clearer. Correction made to 9.1.2
3	June 28, 2006	All		Document rewritten as a Guide to the new Ballast Water Control and Management Regulations

Important Notices and Disclaimers

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Preface

The purpose of this guide is to provide information on the application of the *Ballast Water Control and Management Regulations* (the Regulations) made pursuant to the *Canada Shipping Act*. The purpose of the Regulations is to protect waters under Canadian jurisdiction from non-indigenous aquatic organisms and pathogens that can be harmful to ecosystems. When a new organism is introduced to an ecosystem, negative and irreversible changes may result including a change in biodiversity. Ballast water may have been associated with the unintentional introduction of a number of organisms into Canadian waters; several of which may have been extremely harmful to both the ecosystem and the economic well being of the nation. The *Ballast Water Control and Management Regulations* are intended to minimize the probability of future introductions of harmful aquatic organisms and pathogens from ships' ballast water while protecting the safety of ships. This guide is to be used as a companion document to the Regulations and should not be seen as adding to or detracting from existing statutory or regulatory requirements that will prevail in the case of conflict with this guide.

Voluntary provisions for ballast water exchange were first introduced in Canada in 1989 for ships traveling to the Great Lakes. Since that time, a number of significant developments have been made, including the following:

- in 1991 ballast exchange guidelines were introduced by the International Maritime Organization (IMO) - these were revised in 1997 as resolution A.868(20), Guidelines for the Control and Management of Ships Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens;
- in 1993 the US Coast Guard introduced mandatory regulations that required ballast exchange for ships traveling to the Great Lakes – these were amended in 2004 to make reporting mandatory for all US waters and again in 2005 to make ballast water management mandatory in all US waters;
- in 2000 the application of the Canadian guidelines was expanded to cover all waters under Canadian jurisdiction and they were renamed to the *Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction, TP 13617*;
- in 2002 the St. Lawrence Seaway Management Corp., under agreement with the St. Lawrence Seaway Development Corp., amended their joint Practices and Procedures, to make compliance with best management practices a mandatory prerequisite for transit of the Seaway system; and
- in 2004 the IMO finalized the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 – this new Convention introduced a performance standard for ballast water treatment and calls for the eventual phasing out of ballast water exchange, but is not yet in force.

The new *Ballast Water Control and Management Regulations* are harmonized to the maximum extent possible with current U.S. and international provisions, including the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

1.0 Interpretation

1.1 For the purposes of this Guide:

“exclusive economic zone” consists of an area of the sea beyond and adjacent to the territorial sea of Canada that has as its inner limit the outer limit of the territorial sea of Canada and as its outer limit the line every point of which is at a distance of 200 nautical miles from the nearest point of the baselines of the territorial sea of Canada or as specified in the Oceans Act,

“IMO” means the International Maritime Organization

2.0 Ballast Water Management Plan

2.1 Recognizing the importance of pre-planning in order to conduct any ballast water management procedure in a safe and effective manner, sections 11 and 12 of the Regulations outline the requirement for the preparation and carriage of a ballast water management plan.

2.2 A Canadian ship registered under the *Canada Shipping Act* is required to submit four copies of its ballast water management plan to the Board of Steamship Inspection.

2.3 Plans carried on Canadian and non-Canadian ships should be reviewed by the national Administration, but do not have to be approved.

2.4 Ballast water management plans must include the information listed in section 11 of the Regulations. The following documents may be useful in preparing a ballast water management plan:

.1 IMO Resolution A.868(20), Guidelines for the Control and Management of Ships Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens, in particular section 7.1

.2 the Model Ballast Water Management Plan developed by the International Chamber of Shipping (ICS) and the International Association of Independent Tanker Owners (INTERTANKO)

.3 Regulation B-1 of the IMO’s Regulations for the Control and Management of Ships’ Ballast Water and Sediments (not yet in force)

.4 Part B of the Annex to Resolution MEPC.127(53), Guidelines for Ballast Water Management and Development of Ballast Water Management Plans which is included as Schedule 1 of this Guide.

2.5 Ships that conduct best management practices in accordance with section 5 of the Regulations and section 7 of this Guide should incorporate these practices into their ballast water management plan.

3.0 Ballast Water Exchange

3.1 With the exception of ships specifically exempted from the provision of the Regulations, all ships are expected to exchange or treat their ballast prior to discharge in waters under Canadian jurisdiction.

3.2 When conducting ballast water exchange in order to meet the provisions of the Regulations, Part A of the IMO Guidelines For Ballast Water Management and Development of Ballast Water Management Plans and the IMO Guidelines for Ballast Water Exchange should be followed. The IMO Guidelines are included as Schedule 1 and 2 to this Guide.

3.3 The Regulations specify the procedures that must be followed for ships on transoceanic and non-transoceanic voyages, including the recognition that under certain circumstances, for reasons of safety, equipment failure or practicality, the preferred option for management of ballast water may not always be possible. In these cases, those alternatives that are acceptable have been identified, particular to specific voyages. Situations where exchanging ballast would be impractical would include cases where the voyage was not of sufficient length in waters suitable for exchange or where exchange could only be conducted in waters of another country and that country did not permit the exchange.

3.4 In cases where the preferred option or alternatives are not complied with, the Master should be able to provide clear proof of why compliance was not possible.

3.5 In dealing with the exceptional circumstance where a ship can not comply with the specific provisions of the Regulations, the ship will be required to comply with one or more of the provisions listed in subsection 13(5) of the Regulations. At a minimum, ships would be required to discharge only the amount of ballast water operationally necessary for cargo operations. The Master may wish to suggest suitable measures to Transport Canada for consideration.

3.6 If when verifying compliance through an onboard inspection it is determined that the ship does not comply with the Regulations (for example the salinity of the ballast is found to be below 30 parts per thousand as required in paragraph 8(2)(b) of the Regulations) or it is determined that the reasons provided for not complying were unjustified, then Transport Canada will treat the ship the same as an exceptional circumstance and require the ship to comply with one or more of the provisions listed in subsection 13(5) of the Regulations.

3.7 A ship shall not be required to deviate from its intended voyage, or delay the voyage, in order to conduct an exchange beyond 200 nautical miles from shore or beyond 50 nautical miles from shore as referred to in sections 6(1), 6(2), 6(4)(b), 7(1), 7(2) and 7(3)(b) of the Regulations. A ship may however be required to deviate from its intended voyage or delay its voyage in order to conduct an exchange within waters under Canadian jurisdiction, as referred to in sections 6(3), 6(4)(a), 6(4)(c), 6(4)(d), 6(5), 7(3)(c) and 7(3)(d) of the Regulations.

3.8 In addition to the mandatory provisions in the Regulations, for ships traveling to and from ports in the Bay of Fundy, it is recommended that exchange occur in the Gulf of Maine in waters greater than 100 metres deep, as indicated in Figure 1. It is also recommended that ship traffic crossing the Gulf of Maine and using a coastal route along the Scotian Shelf should exchange in the Gulf of Maine in waters deeper than 100 metres.

3.9 Figure 1 also indicates the alternate exchange zone for transoceanic voyages to east coast ports referred to in paragraph 6(4)(a) of the Regulations and for non-transoceanic voyages along the east coast of North America referred to in paragraph 7(3)(a) of the Regulations.

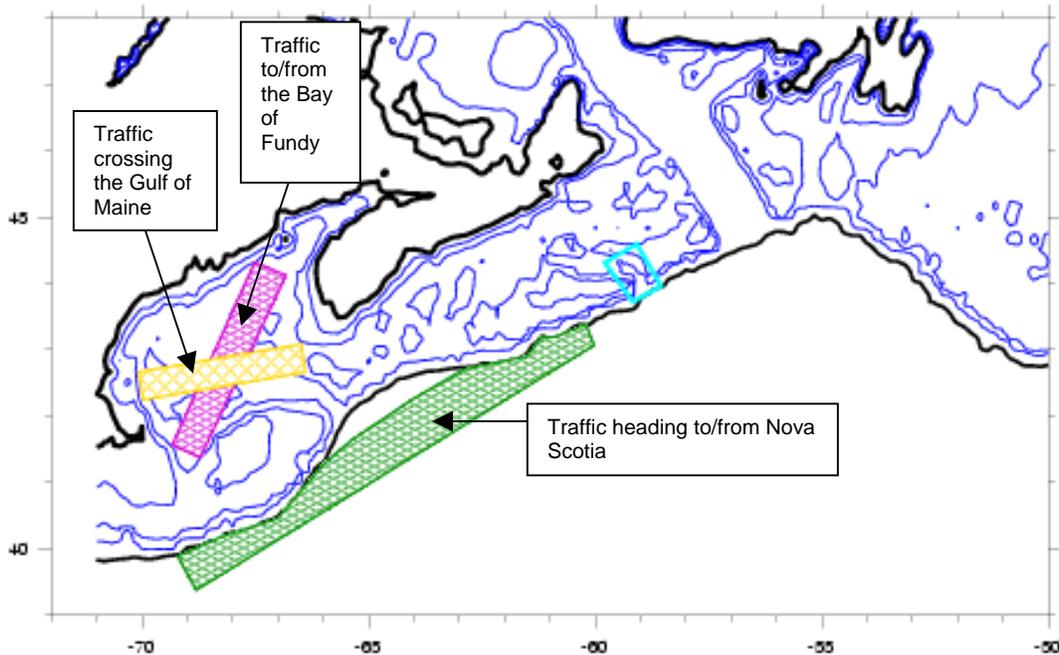


Figure 1. Recommended ballast water exchange zones on the Scotian Shelf and Gulf of Maine

The magenta zone indicates that traffic transiting to/from the Bay of Fundy should exchange in the Gulf of Maine, in water deeper than 100 m. The yellow zone indicates that traffic crossing the Gulf of Maine and using a coastal route on the Scotia Shelf should exchange in the Gulf of Maine, in water deeper than 100 m.

The green zone is the exchange zone for on-shelf traffic heading to/from Nova Scotia, plus ships following a shelfbreak path. Ships should exchange in waters deeper than 1000 m, west of Sable Island and the Gully and away from the entrance to N.E. Channel.

4.0 Ballast Water Treatment

4.1 For ships choosing to use a treatment method other than ballast water exchange, the method will be acceptable if the ballast water, after treatment, meets the standard specified in section 9 of the Regulations. This standard is the same as the Ballast Water Performance Standard specified in Regulation D-2 of the IMO's Regulations for the Control and Management of Ships' Ballast Water and Sediments. It should be pointed out that the purpose of section 9 of the Regulations is to acknowledge that the use of IMO treatment systems is acceptable for ships coming to Canada, but there is no obligation at this time for any ship to fit such systems.

4.2 Treatment systems shall be installed and certified in accordance with the IMO Guidelines for Approval of Ballast Water Management Systems (Resolution MEPC.125(53)) and, in the case of systems that use an active substance, the IMO Procedure for Approval of Ballast Water Management Systems that make use of Active Substances (Resolution MEPC.126(53)).

4.3 In the case of prototype systems being tested and evaluated, this should be done in accordance with the procedures in the IMO Guidelines for Approval and Oversight of Prototype Ballast Water Treatment Technology Programmes (Resolution MEPC.140(54)).

4.4 The use of a treatment system that does not meet the standard specified in section 9 of the Regulations may also be acceptable if it is at least equivalent to ballast water exchange, but such systems would have to be evaluated and accepted by Transport Canada on a case by case basis.

5.0 Reporting Requirements

5.1 If a ship is unable to manage its ballast water as required under section 4 of the Regulations, subsection 13(1) requires them to notify the Minister of Transport at least 96 hours before entry into the territorial sea of Canada. Where this is not possible because the ship is not aware that it is unable to manage its ballast water, notification should be made as soon as possible. Notification should be made to the appropriate Centre listed in section 5.3 of this Guide and should provide the following information:

- .1 an explanation as to the inability to carry out exchange, and

- .2 what equivalent process the ship intends to carry out to minimize the threat of introduction of aquatic invasive species potentially entrained in the ballast water prior to entry into waters under Canadian jurisdiction.

5.2 As required by subsection 14(1) of the Regulations, the Master of a ship destined for a Canadian port, shall provide as soon as possible after a management process is performed or a measure determined by the Minister is implemented a fully completed ballast water reporting form as set out in section 10 of this Guide by e-mail transmission, or by other means described in section 5.3. It is requested that whenever possible the form be submitted prior to entry into waters under Canadian jurisdiction.

5.3 The Master of the ship shall provide the completed ballast water reporting form as follows:

- .1 for ships proceeding to ports on the East Coast, in Quebec or in Ontario (Great Lakes):

by Email to: atlanticballastwater@tc.gc.ca

or,

to Marine Communication and Traffic Services (ECAREG)

Facsimile: (902) 426-4483
Phone: (902) 426-4956
Telex: 019 22510

- .2 for ships proceeding to ports in Eastern Canada North of 60 degrees North Latitude:

by Email to: atlanticballastwater@tc.gc.ca

or,

to Marine Communication and Traffic Services (NORDREG)

Facsimile: (867) 979-4236
Phone: (867) 979-5724

- .3 for ships proceeding to ports on the West Coast:

by Email to: rmic-pacific@pac.dfo-mpo.gc.ca

or,

to Marine Communication and Traffic Services Centre, Regional Marine Information Centre

Facsimile: (604) 666-8453

Phone: (604) 666-6011

5.4 Ships subject to the Regulations that have not submitted a fully completed form in accordance with section 14 of the Regulation will be requested to provide the appropriate Marine Communication and Traffic Services Centre with the following information as part of the MCTS interrogative:

(i) Whether a ballast water reporting form signed by the Master has been provided by facsimile to the appropriate agency (i.e. Transport Canada Marine Safety, port authorities or the U.S. Coast Guard) or has been submitted by electronic or other acceptable means.

(ii) Whether ballast water is being carried.

(iii) If the answer to (ii) is affirmative:

(iv) Whether the ship has a Ballast Water Management Plan appropriate to that ship.

(v) Whether the Ballast Water Management Plan has been reviewed by a classification society or flag administration.

(vi) Whether ballast water management procedures have been performed prior to entering Canada's exclusive economic zone

(vii) If the answer to (vi) is negative:

(viii) What is the reason for non performance?

(ix) What procedures, are proposed to protect Canada's waters prior to discharge of ballast?

5.5 Under section 562.19 of the Canada Shipping Act it is an offence to refuse to provide information, or to knowingly provide false information to a marine communication and traffic services officer, where such information is requested for the promotion of environmental protection.

6.0 Pleasure Craft and Search and Rescue Vessels

6.1 Under subsection 2(2) of the Regulations ships used for search and rescue operations or pleasure craft that are less than 50 m in overall length and that have a

maximum ballast water capacity of 8 m³ are exempted from the application of the Regulations.

6.2 If carrying ballast, these vessels should, insofar as practicable, either comply with the requirements of the Regulations or meet the provisions of the IMO Guidelines for Ballast Water Management Equivalent Compliance contained in Resolution MEPC.123(53). The IMO Guidelines are included as Schedule 3 to this Guide.

7.0 Sediment Management and Ships with No Ballast On Board (NOBOB Ships)

7.1 Subsection 4(3) of the regulations confirms that it is necessary to manage ballast water taken on board the ship in waters under Canadian jurisdiction, the United States waters of the Great Lakes Basin or in the French waters of the islands of St. Pierre and Miquelon if that ballast water is mixed with other ballast water that was taken on board the ship outside waters under Canadian jurisdiction and previously not subjected to exchange or treatment. Since NOBOB ships coming from outside waters under Canadian jurisdiction will carry some residual ballast water (including sediment settled out of the ballast water), ships destined to the Great Lakes Basin declaring no ballast on board shall ensure that the ship complies with the following best management practices, as indicated in section 5 of the Regulations:

.1 The St Lawrence Seaway Authorities' mandatory requirement contained in subsection 30(2) of the Seaway Practices and Procedures (<http://www.greatlakes-seaway.com/en/navigation/handbook.html>) which indicates that to obtain clearance to transit the Seaway every ship entering the Seaway after operating beyond the exclusive economic zone must agree to comply with the "Code of Best Practices for Ballast Water Management" of the Shipping Federation of Canada (see Seaway Notice No. 6 – 2002 at <http://www.greatlakes-seaway.com/en/navigation/notice20020322e.html>); or

.2 The ship shall conduct mid-ocean ballast water exchange during ballast-laden voyages in an area 200 nautical miles from any shore and in water 2000 meters deep whenever possible, prior to entering waters under Canadian jurisdiction. Ships unable to conduct midocean ballast water exchange during ballast laden voyages shall conduct saltwater flushing of their empty ballast water tanks in an area 200 nautical miles from any shore, whenever possible. Saltwater flushing is defined as the addition of mid-ocean water to empty ballast water tanks; the mixing of the flush water with residual water and sediment through the motion of the ship; and the discharge of the mixed water, such that the resultant residual water remaining in the tank has as high a salinity as possible, and preferably is greater than 30 parts per thousand (ppt). The ship should take on as much

mid-ocean water into each tank as is safe (for the ship and crew) in order to conduct saltwater flushing. The master of the ship is responsible for ensuring the safety of the ship, crew, and passengers. Ships declaring NOBOB should take particular care to conduct saltwater flushing on the transit to the Great Lakes so as to eliminate fresh and or brackish water residuals in ballast tanks.

7.2 Ships unable to comply with section 7.1 above, shall notify the Minister of Transport, who may, if found that the ship did not comply with best management practices, in consultation with the Master, request that the any ballast water taken aboard in the St Lawrence River or Great Lakes, be retained on board, treated on board or discharged to a reception facility and the ship may be subject to inspection and detention if found to have detainable deficiencies.

7.3 Ships that operate within the Great Lakes and St. Lawrence River should comply with the “Voluntary Management Practices to Reduce the Transfer of Aquatic Nuisance Species Within the Great Lakes by U.S. and Canadian Domestic Shipping” of the Lake Carriers’ Association and the Canadian Shipowners Association while operating anywhere within the Great Lakes and the Seaway (see Seaway Notice No. 6 – 2002 at <http://www.greatlakes-seaway.com/en/navigation/notice20020322e.html>).

8.0 Ships Operating Only in Waters Under Canadian Jurisdiction Subsequent to Operating Outside Waters Under Canadian Jurisdiction

8.1 Subsection 2(1) of the Regulations provides an exemption for ships operating exclusively in waters under Canadian jurisdiction or certain adjacent waters. Since ships that have operated outside these waters may carry harmful aquatic organisms or pathogens in their residual ballast, the exemption is not applicable to any ship that has made a voyage outside these waters.

8.2 Where a ship that has operated outside the waters mentioned in subsection 2(1) of the Regulations and subsequently operates only in these waters (for example an existing ship brought into Canadian registry, a ship on the coasting trade or a Canadian ship employed elsewhere and returning to the Canadian trade) and carries residual ballast that might be discharged directly or after being mixed with other waters, Transport Canada will initially treat the ship the same as an exceptional circumstance and require the ship to comply with one or more of the provisions listed in subsection 13(5) of the Regulations. Transport Canada will determine how long these provisions must be complied with before it can be considered that the ship is no longer discharging ballast taken on board the ship outside of waters under Canadian jurisdiction – at this point the requirements of sections 6 and 7 of the Regulations would no longer be applicable and ballast water management would no longer be necessary.

9.0 Research

9.1 In addition to any inspections to verify compliance with the provisions of the Regulations, ships may be boarded and samples of ballast water may be collected for scientific analysis in order to further research the effectiveness of ballast water management.

10.0 Ballast Water Reporting Form

1. VESSEL INFORMATION

2. BALLAST WATER

Vessel Name:	Type:	IMO Number:	Specify Units: m ³ , MT, LT, ST
Owner:	GT:	Call Sign:	Total Ballast Water on Board:
Flag:	Arrival Date:	Agent:	
Last Port and Country:	Arrival Port:		Total Ballast Water Capacity:
Next Port and Country:			

3. BALLAST WATER TANKS

BALLAST WATER MANAGEMENT PLAN ON BOARD? YES ___ NO ___ HAS THIS BEEN IMPLEMENTED? YES ___ NO ___

TOTAL NO. OF TANKS ON BOARD _____

NO. OF TANKS IN BALLAST _____ IF NONE IN BALLAST GO TO NO. 5

NO. OF TANKS EXCHANGED _____

NO. OF TANKS NOT EXCHANGED _____

4. BALLAST WATER HISTORY: RECORD ALL TANKS THAT WILL BE DEBALLASTED IN PORT STATE OF ARRIVAL; IF NONE GO TO NO. 5

Tanks/Holds (List multiple sources/tanks separately)	BW SOURCE				BW EXCHANGE Circle one: Empty/Refill or Flow Through					BW DISCHARGE			
	DATE DD/MM/YY	PORT or LAT. LONG.	VOLUME (units)	TEMP (units)	DATE DD/MM/YY	ENDPOINT LAT. LONG.	VOLUME (units)	% EXCH.	SEA Hgt. (m)	DATE DD/MM/YY	PORT or LAT. LONG.	VOLUME (units)	SALINITY (units)

BALLAST WATER TANK CODES: FOREPEAK = FP, AFTERPEAK = AP, DOUBLE BOTTOM = DB, WINGTANK = WT, TOPSIDE = TS, CARGO HOLD = CH, OTHER = O

IF EXCHANGES WERE NOT CONDUCTED, STATE OTHER CONTROL ACTION(S) TAKEN: _____

IF NONE, STATE REASON WHY NOT: _____

5. WILL WATER BE ADDED TO ANY TANKS CONTAINING ONLY RESIDUAL BALLAST AND SEDIMENT, AND THEN SUBSEQUENTLY DISCHARGED WHILE IN WATERS UNDER CANADIAN JURISDICTION? YES ___ NO ___

6. IF THE ANSWER TO 5 IS YES:

A) HAS THE SHIP COMPLIED WITH BEST MANAGEMENT PRACTICES? YES ___ NO ___

B) HAS THE RESIDUAL BALLAST WATER BEEN EXPOSED TO SALINITY CONDITIONS EQUIVALENT TO BALLAST EXCHANGE? YES ___ NO ___

RESPONSIBLE OFFICER'S NAME, TITLE (PRINTED), AND SIGNATURE _____

Schedule 1

Guidelines For Ballast Water Management and Development of Ballast Water Management Plans (G4)

RESOLUTION MEPC.127(53)

Adopted on 22 July 2005

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on Ballast Water Management for Ships held in February 2004 adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Ballast Water Management Convention) together with four Conference resolutions,

NOTING that Regulation A-2 of the Ballast Water Management Convention requires that discharge of ballast water shall only be conducted through Ballast Water Management in accordance with the provisions of the Annex to the Convention,

NOTING FURTHER that Regulation B-1 of the Annex to the Ballast Water Management Convention provides that each ship shall have on board and implement a ballast water management plan approved by the Administration, taking into account Guidelines developed by the Organization,

NOTING ALSO that resolution 1 adopted by the International Conference on Ballast Water Management for Ships invites the Organization to develop these Guidelines as a matter of urgency,

HAVING CONSIDERED the draft Guidelines for ballast water management and development of ballast water management plans developed by the Ballast Water Working Group and the recommendation made by the Sub-Committee on Bulk Liquids and Gases at its ninth session, 1.

1. ADOPTS the Guidelines for ballast water management and development of ballast water management plans, as set out in the Annex to this resolution;
2. INVITES Governments to apply the Guidelines as soon as possible, or when the Convention becomes applicable to them; and
3. AGREES to keep the Guidelines under review.

ANNEX

GUIDELINES FOR BALLAST WATER MANAGEMENT AND DEVELOPMENT OF BALLAST WATER MANAGEMENT PLANS

1 INTRODUCTION

1.1 Ballast water is essential to control trim, list, draught, stability, or stresses of the ship. However, ballast water may contain aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into fresh water courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas.

1.2 The selection of appropriate methods of ballast water management should take into account the need ensure that Ballast Water Management practices used to comply with this Convention do not cause greater harm than they prevent to the environment, human health, property or resources of any States and the safety of ships.

1.3 The objectives of these Guidelines are to assist Governments, appropriate authorities, ships masters, operators and owners, and port authorities, as well as other interested parties, in preventing, minimizing and ultimately eliminating the risk of introducing harmful aquatic organisms and pathogens from ships' ballast water and associated sediments while protecting ships' safety in applying the International Convention for the Control and Management of Ships' Ballast Water and Sediments (hereinafter referred to as the "Convention").

1.4 These guidelines consist of two parts:

- Part A – "Guidelines for Ballast Water Management", which contains guidance on the general principles of Ballast Water Management; and
- Part B – "Guidelines for the development of Ballast Water Management Plans", which contains guidance on the structure and content of Ballast Water Management Plans required by Regulation B-1 of the Convention.

2 DEFINITIONS

2.1 For the purposes of these Guidelines, the definitions in the Convention apply.

2.2 Ballast Water Tank means any tank, hold, or space used for the carriage of ballast water.

3 APPLICATION

3.1 The Guidelines apply to all ships and to Flag Administrations, port States, coastal States, ship owners, ship operators, ships' personnel involved in Ballast Water Management, ship designers, ship builders, classification societies as well as other interested parties.

PART A – GUIDELINES FOR BALLAST WATER MANAGEMENT

1 SHIP OPERATIONAL PROCEDURES

1.1. Precautionary practices

Avoiding unnecessary discharge of ballast water

1.1.1 If it is necessary to take on and discharge ballast water in the same port to facilitate safe cargo operations, care should be taken to avoid unnecessary discharge of ballast water that has been taken up in another port.

1.1.2 Managed ballast water which is mixed with unmanaged ballast water is no longer in compliance with Regulations D-1 and D-2 of the Annex to the Convention.

Minimizing the uptake of harmful aquatic organisms, pathogens and sediments

1.1.3 When loading ballast, every effort should be made to avoid the uptake of potentially harmful aquatic organisms, pathogens, and sediment that may contain such organisms. The uptake of ballast water should be minimized or, where practicable, avoided in areas and situations such as:

- .1 in areas identified by the port State in connection with advice provided by ports under paragraph 2.2.2;
- .2 in darkness when organisms may rise up in the water column;
- .3 in very shallow water;
- .4 where propellers may stir up sediment; or
- .5 where dredging is or recently has been carried out.

1.2 Ballast water management options

1.2.1 Ballast Water Exchange

1.2.1.1 Ballast water exchange is to be conducted in accordance with Regulation B-4 of the Convention and in accordance with the Guidelines for Ballast Water Exchange.

1.2.1.2 The voyage should be planned taking into account when ballast water exchange in accordance with Regulation B-4 of the Convention can be carried out.

1.2.1.3 Because of the possibility that partially exchange may encourage re-growth of organisms, ballast water exchange should only be commenced in any tank if there is sufficient time to complete the exchange to comply with the standard in Regulation D-1 and the ship can comply with the distance from land and minimum water depth criteria in Regulation B-4. As many

complete tanks should be exchanged to the standard in Regulation D-1 as the time allows, if for any tank the standard in Regulation D-1 can not be fully met the exchange should not be commenced for that tank.

1.2.1.4 If ballast water exchange is not undertaken for the reasons in Regulation B-4.4, i.e. 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, then details of the reasons ballast water exchange was not undertaken are to be recorded in the Ballast Water Record Book.

1.2.1.5 A port State may designate areas in which exchange may be conducted taking into account the Guidelines on designation of areas for ballast water exchange. Designated areas should only be used for those ballast water tanks that are intended to be discharged in the port of that State and that could not be exchanged in accordance with Regulation B-4.1 of the Convention.

1.2.2 Ballast Water Management Systems

1.2.2.1 Ballast Water Management Systems installed for compliance with Regulation B-3 are to be approved in accordance with Regulation D-3. Such systems are to be operated in accordance with the system design criteria and the manufacturer's operational and maintenance instructions. The use of such systems should be detailed in the ship's Ballast Water Management Plan. All failures and malfunctions of the system are to be recorded in the Ballast Water Record Book.

1.2.3 Discharge to ballast water reception facilities

1.2.3.1 If ballast water reception facilities provided by a port State are utilized, Regulation B-3.6 applies.

1.2.4 Prototype ballast water treatment technologies

1.2.4.1 Prototype ballast water treatment technologies should be used within a programme approved by the Administration in accordance with Regulation D-4.

1.3 Sediment management

1.3.1 Regulation B-5 requires that all ships shall remove and dispose of sediments from spaces designated to carry ballast water in accordance with the ballast water management plan.

1.3.2 All practical steps should be taken during ballast uptake to avoid sediment accumulation, however, it is recognized that sediment will be taken on board and will settle on tank surfaces. When sediment has accumulated, consideration should be given to flushing tank bottoms and other surfaces when in suitable areas, i.e. areas complying with the minimum depth and distance described by Regulations B-4.1.1 and B-4.1.2.

1.3.3 The volume of sediment in a ballast tank should be monitored on a regular basis.

1.3.4 Sediment in ballast tanks should be removed in a timely basis in accordance with the Ballast Water Management Plan and as found necessary. The frequency and timing of removal will depend on factors such as sediment build up, ship's trading pattern, availability of reception facilities, work load of the ship's personnel and safety considerations.

1.3.5 Removal of sediment from ballast tanks should preferably be undertaken under controlled conditions in port, at a repair facility or in dry dock. The removed sediment should preferably be disposed of in a sediment reception facility if available, reasonable and practicable.

1.3.6 When sediment is removed from the ship's ballast tanks and is to be disposed of by that ship at sea, such disposal should only take place in areas outside 200 nm from land and in water depths of over 200 m.

1.3.7 Regulation B-5 requires that ships constructed in or after 2009 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 the Guidelines for sediment control on ships (G12). This also applies to ships constructed prior to 2009, to the extent practicable.

1.4 Additional Measures

1.4.1 Ships to which additional measures apply, under Regulation C-1, should take them into account in the ships voyage planning. Actions taken to comply with any additional measures should be recorded in the Ballast Water Record Book.

1.5 Exemptions

1.5.1 Regulation A-4 provides that an exemption may be granted from the requirements of Regulations B-3 or C-1 by a Party or Parties to a ship in specific circumstances. Applications for and the granting of such exemptions should be completed in accordance with the Guidelines for risk assessment under Regulation A-4 (G7).

1.5.2 Ships granted an exemption referred to in paragraph 1.5.1 above should record the exemption in the Ballast Water Record Book and what actions have been taken with regards to the ships ballast water.

2 RECORDING PROCEDURES

2.1 Procedures for ships

2.1.1 To facilitate the administration of ballast water management and treatment procedures on board each ship, a responsible officer is to be designated in accordance with Regulation B-1 to ensure the maintenance of appropriate records and to ensure that ballast water management and/or treatment procedures are followed and recorded.

2.1.2 When carrying out any ballast water operation the details are to be recorded in the Ballast Water Record Book together with any exemptions granted in accordance with Regulation B-3 or C-1.

2.1.3 Where a port State requires information on ships ballast operations, relevant documentation, which takes account of the information requirements of the Convention, should be made available to the port State.

2.2 Procedures for port States

2.2.1 Port States should provide ships with details of their requirements concerning ballast water management including:

- .1 the location and terms of use of areas designated for ballast water exchange under Regulation B-4.2 of the Convention;
- .2 any additional measures determined under Regulation C-1 of the Convention;
- .3 warnings concerning ballast uptake and any other port contingency arrangements in the event of emergency situations; and
- .4 the availability, location, capacities of reception facilities that are provided for the environmentally safe disposal of ballast water and/or sediments, under Article 5 and Regulation B-3.6.

2.2.2 To assist ships in applying the precautionary practices described in section 1.1 of Part A, port States are required by Regulation C-2 of the Convention to endeavour to notify mariners of area(s), where ships should not uptake Ballast Water due to known conditions. Similar notification should be given for areas where the uptake of ballast water should be minimized, such as:

- .1 areas with outbreaks, infestations or known populations of harmful organisms and pathogens;
- .2 areas with current phytoplankton blooms (algal blooms, such as red tides);
- .3 nearby sewage outfalls;
- .4 areas where a tidal stream is known to be the more turbid;
- .5 areas where tidal flushing is known to be poor;
- .6 nearby dredging operations; and
- .7 nearby or in sensitive or estuarine sea areas.

3 TRAINING AND EDUCATION

3.1 Regulation B-6 requires that officers and crew shall be familiar with their duties in the implementation of Ballast Water Management particular to the ship on which they serve. Owners, managers, operators, and others involved in officer and crew training for ballast water management should consider the following:

3.2 Training for ships' masters and crews as appropriate should include instructions on the requirements of the Convention, the ballast water and sediment management procedures and the Ballast Water Record Book particularly having regard to matters of ship safety and maintenance of records in accordance with the information contained in these Guidelines.

3.3 The Ballast Water Management Plan should include training and education on ballast water management practices and the systems and procedures used on board the ship.

PART B – GUIDELINES FOR THE DEVELOPMENT OF BALLAST WATER MANAGEMENT PLANS

1 INTRODUCTION

1.1 These Guidelines have been developed to assist with the preparation of a ship's Ballast Water Management Plan (hereafter referred to as the "Plan"). The Plan must be approved by the Administration in accordance with Regulation B-1 of the Convention.

1.2 This Part is comprised of three primary sections:

- .1 General: this section provides the objectives and a general overview of the subject matter and introduces the reader to the basic concept of the Guidelines and the Plan that is expected to be developed from them. This section also contains guidance on updating and use of the Plan.
- .2 Mandatory provisions: this section provides guidance to ensure that the mandatory provisions of Regulation B-1 of the Annex to the Convention are met.
- .3 Non-mandatory provisions: this section provides guidance concerning the inclusion of other information in the Plan. This information, although not required under Regulation B-1 of the Convention, may be found useful by local authorities in ports visited by the ship, or may provide additional assistance to the ship's master.

1.3 The format for a Ballast Water Management Plan is given in the Appendix.

2 GENERAL

2.1 Concept of the Guidelines

2.1.1 These Guidelines are intended to provide a basis for the preparation of the Plans for individual ships. The broad spectrum of ships for which Plans are required makes it impractical to

provide specific guidelines for each ship type. For a Plan to be effective and to comply with Regulation B-1 of the Annex of the Convention, it must be carefully tailored to the particular ship for which it is intended. Properly used, the Guidelines will ensure that all appropriate issues that may be applicable to a particular ship are considered in developing the Plan.

2.1.2 The issues that may require consideration include but are not limited to: type and size of ship, volume of ballast carried and total capacity of tanks used for ballast, ballast pumping capacity, ship and crew safety issues, voyage type and length, the ship's typical operational requirements, and ballast water management techniques used on board.

2.2 Concept of the Plan

2.2.1 The Plan is required to be onboard the ship and available to guide personnel in safe operation of the Ballast Water Management system employed on a particular ship. Effective planning ensures that the necessary actions are taken in a structured, logical, and safe manner.

2.2.2. For the Plan to accomplish its purpose, it must be:

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

2.2.3 The Plan envisioned by Regulation B-1 of the Annex to the Convention is intended to be a simple document. Inclusion of extensive background information on the ship, its structure, etc., should be avoided, as this is generally available elsewhere. If such information is relevant, it should be kept in annexes, or an existing document or manual reference should be made to the location of the information.

2.2.4 The Plan is a document to be used on board by the ship's personnel engaged in ballast water management. The Plan must therefore be available in a working language of the ship's personnel. A change in the personnel and or the, working language or would require the issuance of the Plan in the new language(s).

2.2.5 The Plan should be readily available for inspection by officers authorized by a Party to the Convention.

2.3 Exemptions

2.3.1 Regulation A-4 allows that exemption may be granted to a ship from Regulation B-3 or C-1.

2.3.2 Details of exemptions should be retained with the Plan.

2.3.3 Any exemption granted is to be recorded in the Ballast Water Record Book.

2.4 Additional Measures

2.4.1 The Convention, in Regulation C-1 Additional Measures, gives a Party individually or jointly with other Parties, the right to introduce measures in addition to those in Section B. Such Additional Measures are to be communicated to the Organization at least 6 months prior to the projected date of implementation.

2.4.2 The Plan should be accompanied by a most recent list of Additional measures, as communicated by the Organization relevant to the ship's trade. The Plan should contain details and advice on the actions a ship must take to comply with any additional measures that may be required in accordance with Regulation C-1 and for any emergency or epidemic situations.

2.5 Review of the Plan

2.5.1 Regular review of the Plan by the owner, operator, or master should be conducted to ensure that the information contained is accurate and updated. A feedback system should be employed which will allow quick capture of changing information and incorporation of it into the Plan.

2.5.2 Changes to the provisions of this Plan will need Administration approval.

3 MANDATORY PROVISIONS

3.1 This section provides individual guidelines for the seven mandatory provisions of Regulation B-1 of the Annex to the Convention. In addition, it provides information to assist ships personnel in managing ballast water and sediments.

3.2 Regulation B-1 of the Annex to the Convention provides that the 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 the Convention;
- .2 provide a detailed description of the actions to be taken to implement the Ballast Water Management practices required by the Convention;
- .3 detail the procedures for the disposal of sediments at sea and to shore;
- .4 include the procedures for co-ordinating 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 designates the officer on board in charge of ensuring that the Plan is properly implemented;

- .6 contain the reporting requirements for ships provided for under the 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 should be provided.

3.3 The Ballast Water Management Plan should give guidance on the ballast handling procedures to be followed, including:

- .1 uptake of ballast water;
- .2 step-by-step procedures and sequences for the Ballast Water Management System used; and
- .3 any operational or safety restrictions including those associated with the Ballast Water Management System used. This will also assist ship's personnel when responding to enquiries from inspection officers authorized by a Party.

3.4 Safety aspects of the Ballast Water Management system used should include, as applicable, guidance on:

- .1 stability to be maintained at all times to values not less than those recommended by the Organization (or required by the Administration);
- .2 approved longitudinal stress and, where applicable, torsional stress values are to be maintained within permitted values;
- .3 transfer or exchange of ballast that can generate significant structural loads by sloshing action in partially-filled tanks. If these operations include partially-filled tanks, consideration should be given to carrying out the operation in favourable sea and swell conditions such that the risk of structural damage is minimized;
- .4 wave-induced hull vibrations when carrying out ballast water exchange;
- .5 forward and aft draughts and trim, with particular reference to bridge visibility, slamming and minimum forward draft;
- .6 the effects of any potential hazards and occupational health that may affect ship's personnel shall also be identified together with any safety precautions that need to be taken; and
- .7 the possible effects of tank over pressurization.

3.5 If a ship is able to complete at least 95 per cent volumatic exchange in less than three pumped volumes, documentation indicating that this ballast water exchange process has been approved under Regulation D-1.2 should be provided in the Plan.

3.6 The Plan should also include procedures for the disposal of sediments and in particular:

- .1 on the sediment removal or reduction at sea, and when cleaning of the ballast tanks to remove sediments;
- .2 regarding the safety consideration to be taken if tank entry is required to remove sediments; and
- .3 regarding the use of port reception facilities for sediments.

3.7 The Plan should clearly identify the officer in charge of ballast water management and outline his/her duties which should include:

- .1 ensuring that the Ballast Water Management performed follows the procedures in the Plan;
- .2 ensuring that the Ballast Water Record Book and any other necessary documentation are maintained; and
- .3 being available to assist the inspection officers authorized by a Party for any sampling that may need to be undertaken.

3.8 The Plan should contain guidance on the recording requirements according to ship's Ballast Water Record Book provided for under this Convention including details of exemptions granted to the ship.

3.9 In addition to the above, the Plan should include the following:

- .1 A foreword which should provide the ship's crew with explanations on the need for ballast water management and for record keeping. The foreword should include a statement that, "This Plan must be kept available for inspection on request by an authorized authority".
- .2 Ship particulars including at least:
 - .1 ships' name, flag, port of registry, Gross Tonnage, IMO number*, length (BP), beam, international call sign; deepest ballast drafts (normal and heavy weather);
 - .2 the total ballast capacity of the ship in cubic meters and other units if applicable to the ship;
 - .3 a brief description of the main ballast water management method(s) used on the ship; and
 - .4 identification (rank) of the officer in charge for implementing the Plan.

- .3 Information on Ballast Water Management System used on board, including:
 - .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 on board, with references to 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.
- .4 Information on the ballast water sampling points, including:
 - .1 A list or diagrams indicating the location of sampling and access points in pipelines and ballast water tanks, to enable crew members to assist the authorized officers of a Party that have reason to obtain samples.
 - .2 This section should make clear that sampling of ballast water is primarily a matter for the authorized inspection officers, 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 inspection officers.
 - .3 The authorized inspection officers should be advised of all safety procedures to be observed when entering enclosed spaces.
- .5 Provisions for crew training and familiarization, including:
 - .1 requirements of a general nature regarding Ballast Water Management;
 - .2 training and information on ballast water management practices;
 - .3 ballast water exchange;
 - .4 ballast water treatment systems;
 - .5 general safety considerations;
 - .6 the Ballast Water Record Book and maintenance of records;

- .7 the operation and maintenance of installed ballast water treatment systems;
- .8 safety aspects associated with the particular systems and procedures used onboard the ship which affect the safety or human health of crew and passengers and/or the safety of the ship;
- .9 precautions for entering tanks for sediment removal;
- .10 procedures for the safe handling and packaging of sediment; and
- .11 storage of sediment.

4 NON-MANDATORY INFORMATION

4.1 In addition to the provisions required by Articles and regulations of the Convention, the owner/operator may include in the Plan, as appendices, additional information such as: provision of additional diagrams and drawings, shipboard equipment and reference materials. National or regional requirements that differ from the Convention may also be recorded for reference.

4.2 Non-mandatory information may also include manufactures manuals (either as extracts or complete) or reference to the location on board of such manuals and other relevant material.

APPENDIX

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.

For guidance in preparing the plan the following information is to be included. The plan should be specific to each ship.

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 the Guidelines for Ballast Water Management and the Development of Ballast Water Management Plans resolution MEPC XX(Y Y) (The Guidelines). 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.

Note: The Plan is to be written in the working language of the crew, if the text is not in English, French, or Spanish, the plan is to include a translation into one of these languages.

SHIP PARTICULARS

At least the following details should be included:

Ships' name;
Flag;
Port of registry;
Gross Tonnage;
IMO number*;

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

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.

INDEX

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

PURPOSE

Should contain a brief introduction 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.

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 co-ordinating 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.

Schedule 2

Guidelines for Ballast Water Exchange (G6)

RESOLUTION MEPC.124(53)

Adopted on 22 July 2005

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on Ballast Water Management for Ships held in February 2004 adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Ballast Water Management Convention) together with four Conference resolutions,

NOTING that Regulation A-2 of the Ballast Water Management Convention requires that discharge of ballast water shall only be conducted through Ballast Water Management in accordance with the provisions of the Annex to the Convention,

NOTING FURTHER that Regulation B-4 of the Annex to the Ballast Water Management Convention addresses the conditions under which ballast water exchange should be conducted, taking into account Guidelines developed by the Organization,

NOTING ALSO that resolution 1 adopted by the International Conference on Ballast Water Management for Ships invites the Organization to develop these Guidelines as a matter of urgency,

HAVING CONSIDERED the draft Guidelines for ballast water exchange developed by the Ballast Water Working Group and the recommendation made by the Sub-Committee on Bulk Liquids and Gases at its ninth session,

1. ADOPTS the Guidelines for ballast water exchange, as set out in the Annex to this resolution;
2. INVITES Governments to apply the Guidelines as soon as possible, or when the Convention becomes applicable to them; and
3. AGREES to keep the Guidelines under review.

ANNEX

GUIDELINES FOR BALLAST WATER EXCHANGE (G6)

1 INTRODUCTION

1.1 The purpose of these Guidelines is to provide shipowners and operators with general guidance on the development of ship specific procedures for conducting ballast water exchange. Whenever possible ship owner and operators should enlist the assistance of classification societies or qualified marine surveyors in tailoring ballast exchange practices for various conditions of weather, cargo and stability. The application of processes and procedures concerning ballast water management are at the core of the solution to prevent, minimize and ultimately eliminate the introduction of harmful aquatic organisms and pathogens. Ballast water exchange offers a means, when used in conjunction with good ballast water management practices, to assist in achieving this solution.

1.2 Ballast water exchange introduces a number of safety issues, which affect both the ship and its crew. These Guidelines are intended to provide guidance on the safety and operational aspects of ballast water exchange at sea.

1.3 Given that there are different types of ships, which may be required to undertake ballast water exchange at sea, it is impractical to provide specific guidelines for each ship type. Shipowners are cautioned that they should consider the many variables that apply to their ships. Some of these variables include type and size of ship, ballast tank configurations and associated pumping systems, trading routes and associated weather conditions, port State requirements and manning.

Application

1.4 The Guidelines apply to all those involved with ballast water exchange including, shipowners and operators, designers, classification societies and shipbuilders. Operational procedures and guidance reflecting the issues rose in these Guidelines should be reflected in the ships ballast water management plan.

2 DEFINITIONS

2.1 For the purposes of these Guidelines, the definitions in the International Convention for the Control and Management of Ships' Ballast Water and Sediments (the Convention) apply and:

- .1 "Ballast Water Tank" – means any tank, hold, or space used for the carriage of ballast water.

3 RESPONSIBILITIES

3.1 Shipowners and operators should ensure, prior to undertaking ballast water exchange, that all the safety aspects associated with the ballast water exchange method or methods used onboard

have been considered 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 should be undertaken at regular intervals.

3.2 The Ballast Water Management Plan is to include the duties of key shipboard control personnel undertaking ballast water exchange at sea. Such personnel should be fully conversant with the safety aspects of ballast water exchange and in particular the method of exchange used on board their ship and the particular safety aspects associated with the method used.

3.3 In accordance with Regulation B-4.4 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 shall not be required to comply with Regulations B-4.1 and B-4.2.

- .1 When a ship does not undertake ballast water exchange for the reasons stated in paragraph above, the reasons shall 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 (G13).

4 BALLAST WATER EXCHANGE REQUIREMENTS

4.1 Exchange of ballast water in deep ocean areas or open seas offers a means of limiting the probability that harmful aquatic organisms and pathogens be transferred in ships ballast water.

4.2 Regulation D-1 of the Convention requires that:

- .1 ships performing ballast water exchange in accordance with this regulation shall do so with an efficiency of at least 95 per cent volumetric exchange of ballast water; and
- .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 per cent volumetric exchange is met.

4.3 There are three methods of Ballast Water exchange which have been evaluated and accepted by the Organization. The three methods are the sequential method, the flow-through method and the dilution method. The flow-through method and the dilution method are considered as "pump through" methods.

4.4 The three accepted methods can be described as follows:

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.

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.

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 through out the ballast exchange operation.

5 SAFETY PRECAUTIONS ASSOCIATED WITH BALLAST WATER EXCHANGE

5.1 Three methods of carrying out ballast water exchange at sea have been identified as acceptable by the Organization. Each has particular safety aspects associated with it that should be considered when selecting the method(s) to be used on a particular ship.

5.2 When identifying the ballast water exchange method(s) for the first time for a particular ship, an evaluation should 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 should also be taken of the loading conditions and the envisaged ballast water exchange method or methods to be used;
- .2 the ballast pumping and piping system taking account of the number 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.

5.3 Particular account should be taken of the following:

- .1 stability which is to be maintained at all times and not less than those values recommended by the Organization or required by the Administration;
- .2 longitudinal stress, and where applicable torsional stress values, not to exceed permitted values with regard to prevailing sea conditions;

- .3 exchange of ballast in tanks where significant structural loads may be generated by sloshing action in the partially filled tank to be carried out in favourable sea and swell conditions such that the risk of structural damage is minimized;
- .4 wave-induced hull vibrations when carrying out ballast water exchange;
- .5 limitations of the available methods of ballast water exchange in respect of sea and weather conditions;
- .6 forward and aft draughts and trim, with particular reference to bridge visibility, slamming, propeller immersion and minimum forward draft; and
- .7 additional work loads on the master and crew.

5.4 Having undertaken an evaluation for a particular ship and the exchange method or methods to be used, the ship should be provided with procedures, advice and information appropriate to the exchange method(s) identified and ship type in the Ballast Water Management Plan. The procedures, advice, and information in the Ballast Water Management Plan, may include but is not limited to the following:

- .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 maintain adequate intact stability in accordance with an approved trim and stability booklet;
- .4 permissible seagoing strength limits of shear forces and bending moments in accordance with 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 should include pumps, levels in tanks, line and pump pressures, stability and stresses;
- .17 a list of circumstances in which ballast water exchange should not 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 should be avoided in freezing weather conditions. However, when it is deemed absolutely necessary, particular attention should 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 build up 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.

5.5 During ballast water exchange sequences there may be times when, for a transitory period, one or more of the following criteria cannot be fully met or are found to be difficult to maintain:

- .1 bridge visibility standards (SOLAS V/22);
- .2 propeller immersion; and
- .3 minimum draft forward.

5.6 As the choice of acceptable ballast water exchange sequences is limited for most ships, it is not always practicable to dismiss from consideration those sequences where transitory noncompliance may occur. The practical alternative would be to accept such sequences provided an appropriate note is placed in the Ballast Water Management Plan to alert the ship's master. The

note would advise the master of the nature of the transitory non-compliance, that additional planning may be required and that adequate precautions need to be taken when using such sequences.

5.7 In planning a ballast water exchange operation that includes sequences which involve periods when the criteria for propeller immersion, minimum draft and / or trim and bridge visibility cannot be met, the Master should assess:

- .1 the duration(s) and time(s) during the operation that any of the criteria will not be met;
- .2 the effect(s) on the navigational and manoeuvring capabilities of the ship; and
- .3 the time to complete the operation.

5.8 A decision to proceed with the operation should only be taken when it is anticipated that:

- .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 look out forward with adequate communications with the navigation bridge;
- .4 the manoeuvrability of the vessel will not be unduly impaired by the draft and trim and or propeller immersion during the transitory period; and
- .5 the general weather and sea state conditions will be suitable and unlikely to deteriorate.

5.9 On oil tankers, segregated ballast and clean ballast may be discharged below the water line at sea by pumps if the ballast water exchange is performed under the provisions of Regulation D-1.1 of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, provided that the surface of the ballast water has been examined either visually or by other means immediately before the discharge to ensure that no contamination with oil has taken place.

6 CREW TRAINING AND FAMILIARIZATION

6.1 Appropriate training for ships' masters and crews should include instructions on the safety issues associated with ballast water exchange based upon the information contained in these Guidelines. Instruction should be provided on the ships' Ballast Water Management Plan including the completion of required records.

6.2 Ships' officers and crew engaged in ballast water exchange at sea should be trained in and be familiar with the following as appropriate:

- .1 the ship's ballast pumping and piping arrangements, positions of associated air and sounding pipes, positions of all compartment and tank suctions and pipelines connecting them to ship's ballast pumps and, in the case of use of the flow through method of ballast water exchange, the openings used for release of water from the top of the tank together with overboard discharge arrangements;
- .2 the method of ensuring that sounding pipes are clear, and that air pipes and their non-return devices are in good order;
- .3 the different times required to undertake the various ballast water exchange operations including the time to complete individual tanks;
- .4 the method(s) in use for ballast water exchange at sea if applicable with particular reference to required safety precautions; and
- .5 the need to continually monitor ballast water exchange operations.

7 FUTURE CONSIDERATIONS IN RELATION TO BALLAST WATER EXCHANGE

7.1 These Guidelines may be revised and updated in the light of possible technical evolutions with the ballast water exchange methods and of new ballast water management options.

Schedule 3

Guidelines for Ballast Water Management Equivalent Compliance (G3)

RESOLUTION MEPC.123(53)

Adopted on 22 July 2005

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the International Conference on Ballast Water Management for Ships held in February 2004 adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Ballast Water Management Convention) together with four Conference resolutions,

NOTING that Regulation A-2 of the Ballast Water Management Convention requires that discharge of ballast water shall only be conducted through Ballast Water Management in accordance with the provisions of the Annex to the Convention,

NOTING FURTHER that Regulation A-5 of the Annex to the Ballast Water Management Convention provides that equivalent compliance with its provisions 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,

NOTING ALSO that resolution 1 adopted by the International Conference on Ballast Water Management for Ships invites the Organization to develop these Guidelines as a matter of urgency,

HAVING CONSIDERED the draft Guidelines for ballast water management equivalent compliance developed by the Ballast Water Working Group and the recommendation made by the Sub-Committee on Bulk Liquids and Gases at its ninth session,

1. ADOPTS the Guidelines for ballast water management equivalent compliance, as set out in the annex to this resolution;
2. INVITES Governments to apply the Guidelines as soon as possible, or when the Convention becomes applicable to them; and
3. AGREES to keep the Guidelines under review.

ANNEX

**GUIDELINES FOR BALLAST WATER MANAGEMENT
EQUIVALENT COMPLIANCE (G3)**

1 Administrations shall take these Guidelines into account in determining whether ships satisfy the requirements of *Regulation A-5, Equivalent compliance* of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004. Ships subject to these Guidelines should, insofar as practicable, comply with the Convention, and if that is not practicable, shall achieve equivalent compliance in accordance with Regulation A-5 and these Guidelines.

Definitions

2 For the purpose of these Guidelines the definitions in the Convention apply.

Application

3 These Guidelines apply to pleasure craft used solely for recreation or competition or craft used primarily for search and rescue less than 50 metres in overall length and with a maximum ballast water capacity of eight cubic metres. Overall length means the length of the hull excluding bowsprits, booms, bumpkins, pulpits, etc.

Exceptions

4 These Guidelines do not apply to the uptake or discharge of ballast water and sediments:

- .1 necessary for the purpose of ensuring the safety of a ship in emergency situations or saving life at sea;
- .2 when being used for the purpose of avoiding or minimizing pollution incidents from the ship; and
- .3 on the high seas of the same ballast water and sediments.

5 In addition, these Guidelines do not apply to:

- .1 the accidental discharge or ingress of ballast water and sediments resulting from damage to a ship or its equipment 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 the owner or the person in charge did not willfully cause such damage;
- .2 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 provided that no mixing with unmanaged ballast water from other areas has occurred. In the context

of these Guidelines, “same location” shall be taken to mean the same harbour, mooring or anchorage; and

- .3 the discharge of ballast water and sediments if the master reasonably decides that compliance with these Guidelines 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.

Precautionary practices to minimize the uptake or transfer of harmful aquatic organisms and pathogens

Uptake of ballast water

6 Wherever possible, ballast water should be taken up outside of port waters and as far from the coast as practicable. In addition, consideration should be given to the use of dockside water supplies (e.g. water not taken directly from the harbour; such as fresh water, potable water, etc.) as the source for ballast water.

7 When loading ballast water, every effort should be made to avoid the uptake of potentially harmful aquatic organisms, pathogens and sediments that may contain such organisms. The uptake of ballast water should be minimized or, where practicable, avoided in areas and situations such as:

- .1 in areas identified by the port State in connection with warnings provided by ports concerning ballast uptake and any other port contingency arrangements in the event of emergency situations;
- .2 in darkness when organisms may rise up in the water column;
- .3 in very shallow water;
- .4 where propellers may stir up sediment;
- .5 areas with current large phytoplankton blooms (algal blooms, such as red tides);
- .6 nearby sewage outfalls;
- .7 where a tidal stream is known to be more turbid;
- .8 where tidal flushing is known to be poor; or
- .9 in areas close to aquaculture.

8 If it is necessary to take on and discharge ballast water in the same location, care should be taken to avoid unnecessary discharge of ballast water that has been taken up in another location.

Discharge of ballast water

9 To prevent, minimize and ultimately eliminate the transfer of harmful aquatic organisms and pathogens to the maximum extent practicable taking into account the nature of the ship Ballast Water should either be exchanged prior to discharge in accordance with Regulation B-4 or otherwise managed in accordance with the requirements of the Administration. Any chemical treatment shall only use Active Substances approved by the Organization pursuant to Regulation D-3 of the Convention.

Sediment control

10 Where practicable, routine cleaning of the ballast tank to remove sediments should be carried out under controlled arrangements, and suitable arrangements made for the environmentally sound disposal of any resulting sediments.

Compliance with other guidelines

11 Nothing in these Guidelines shall prevent a ship to which these Guidelines apply from using any method of Ballast Water Management approved under any other Guidelines issued by the Organization. If suitable new and emergent treatments and technologies prove viable, these should be evaluated with a view to be incorporated, as appropriate, into these Guidelines.