# Implementation of Ballast Water Management (BWM) Convention - Singapore's Experience

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# BWM Convention Framework

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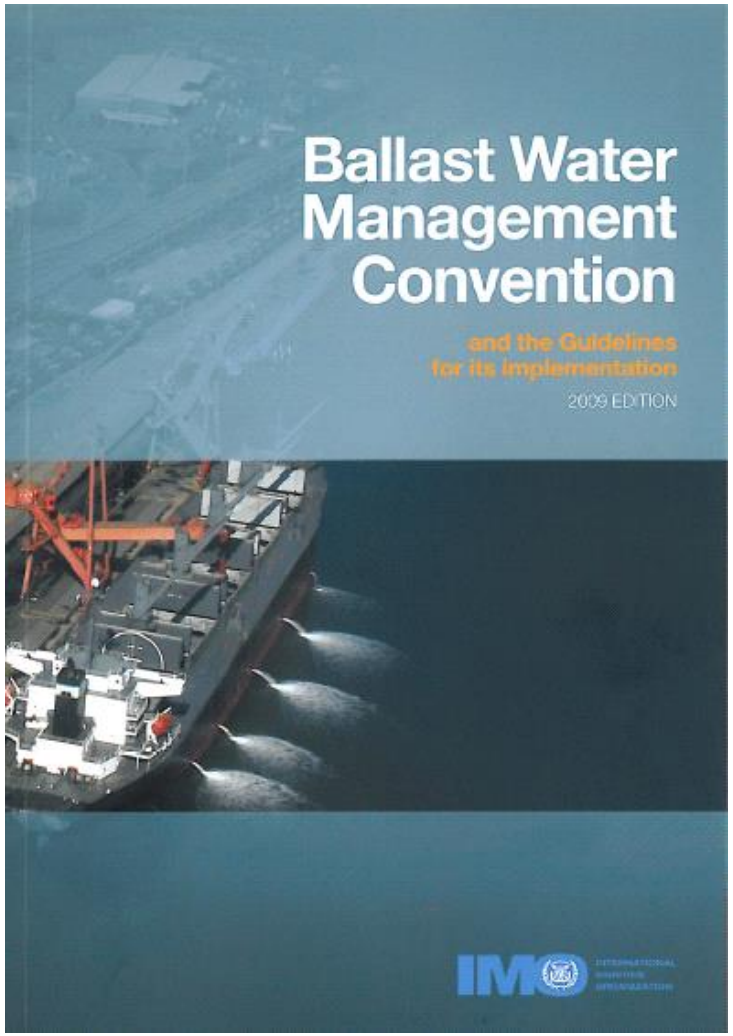


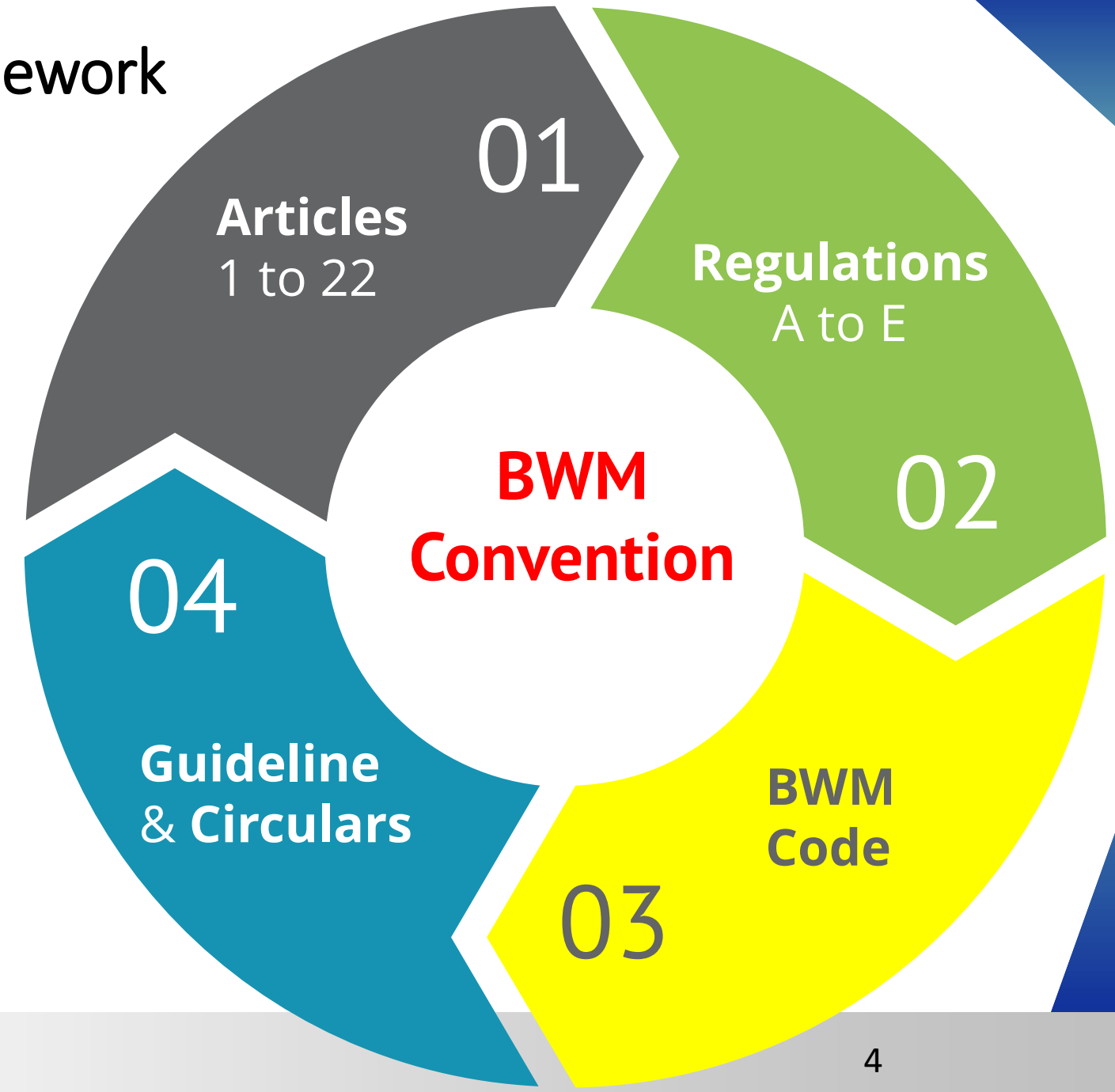

# Timeline for the Application of BWMC

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**All Ship must have:**
- BWMP
- BWRB
- IBWMC

**Existing ships**

Built prior to 8 September 2017 must meet the D1 standard until their D2 compliance Date

**2017**

**New Ships**

Built on or after 08 September 2017 must meet the D2 standard.

**Existing ships**

Renewal survey between 08 September 2017 and 08 September 2019

Case 1: if previous renewal survey was between 08 September 2014 and 08 September 2017 must comply with D2 by this renewal survey

Case 2: if previous renewal survey was before 08 September 2014 – then compliance with D@ must be by the next renewal survey

**2019**

**Existing ships**

Renewal survey after 08 September 2019 must meet D2 standard by this renewal survey

**All Ships**

All ships must meet D2 standard by 08 September 2024

**08 September 2024**

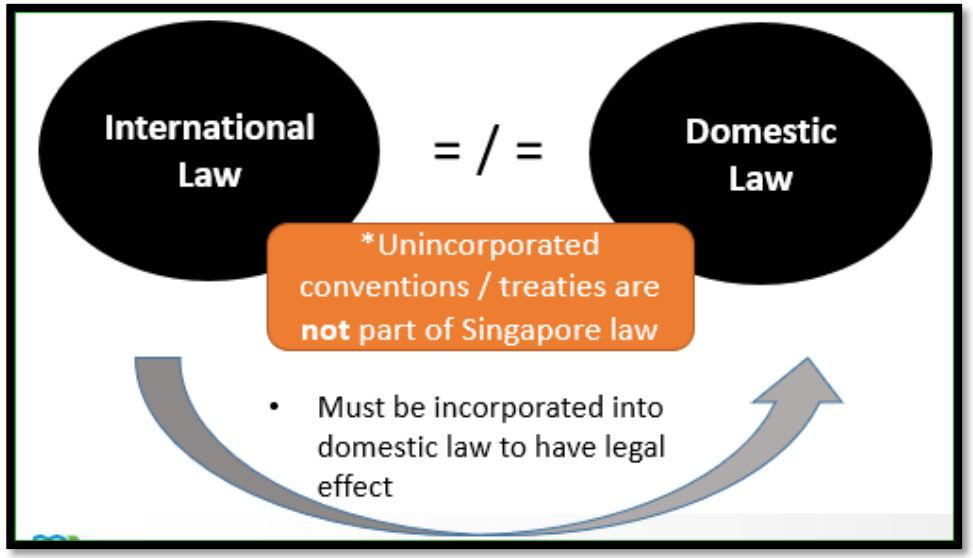
# Implementation of BWMC

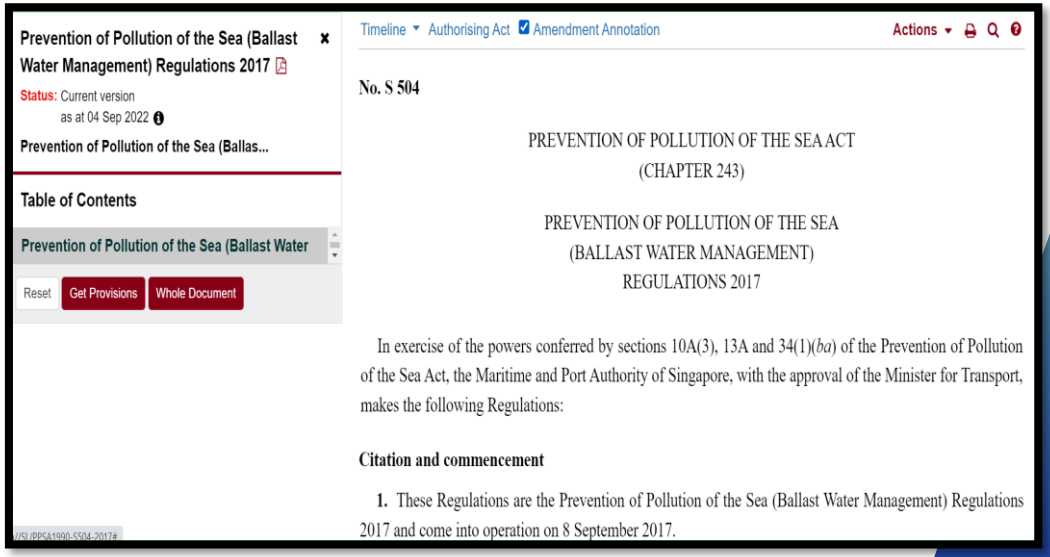
- Singapore's National Legislation
- Application of Article 3
- Requirements for BWMS Installed onboard Singapore-registered ships
- BWMS Commissioning Testing
- Contingency Measures
- BWM Code Reg.A-4 Exemptions "Same Risk Area"

# Singapore's National Legislation

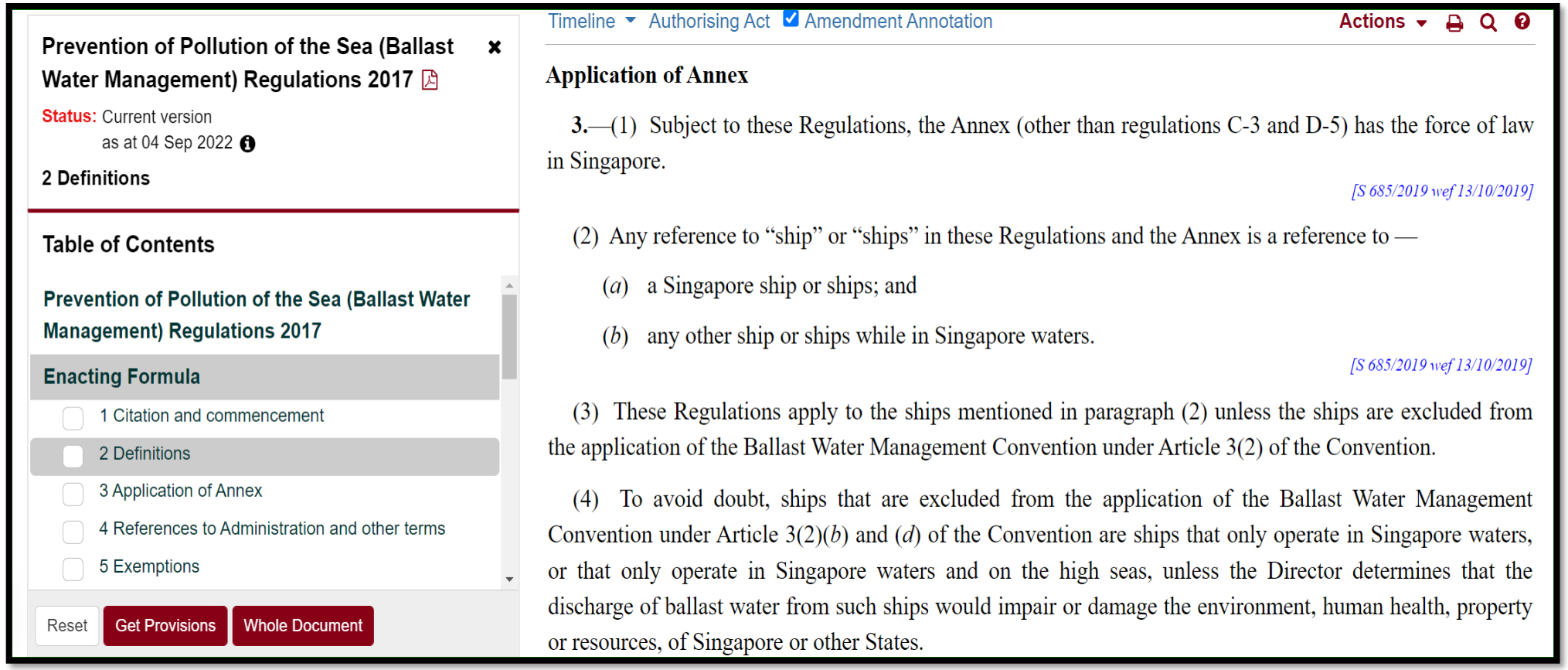
**International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004**

**Prevention of Pollution of the Sea (Ballast Water Management) Regulations**



# Singapore's National Legislation




*Note: This regulations are applicable to a Singapore ship or ships, and any other ship or ship while in Singapore waters*

# Implementation of BWMC

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# Article 3 - Application

Article 3(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.

**Singapore has authorized eight Recognized Organizations (ROs) to carry out survey and certification of Singapore-registered ships**

# Article 3 - Application

Article 3(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;

# Article 3 - Application

2 This Convention shall not apply to:

(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 of 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.

# Article 3 - Application

- Singapore-registered ships (SRS) owner/operator/ISM Company may request to certify that BWM Convention does not apply to the ship if:
  - The ship is not designed or constructed to carry Ballast Water (Article 3.2(a)) ; or
  - The ship is carrying permanent ballast (Article 3.2(f)).

- RO is authorised to carry out the following function on our behalf:
  - At the request of the shipowners, issue "statement of fact" to the ship after verifying the arrangements onboard. This "statement of fact" serves to assist the shipowners in providing clarification to external parties such as PSC, on why/how the BWM Convention does not apply to the ship.
  - When modifications are carried out to an SRS, ROs are responsible to ensure that any modifications to SRS shall be reviewed and carried out in compliance with relevant Statutory requirement or class rules. This includes the points stated in Para. 19 of the Shipping Circular No.8 of 2017 for modifications in relation to the BWM Convention. ROs shall notify MPA when any deviation from statutory requirement have been observed.

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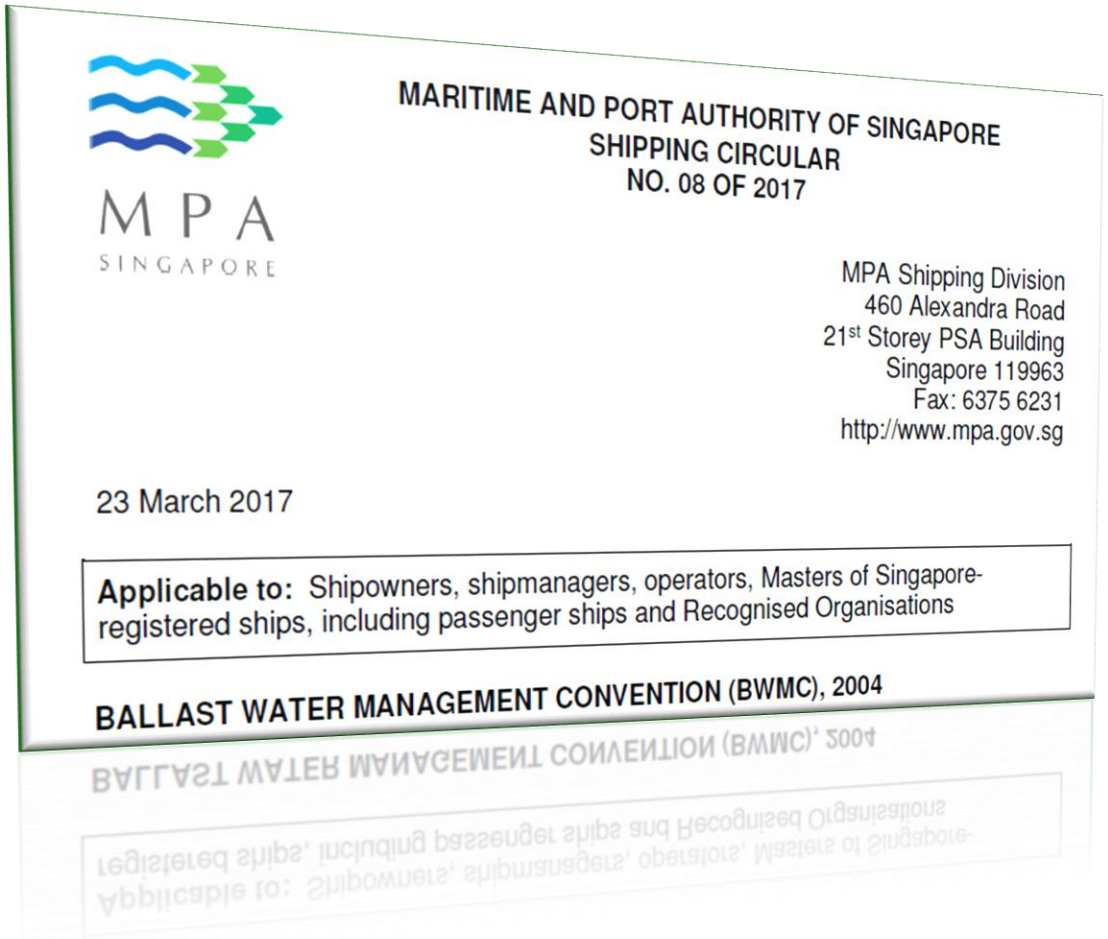
# Singapore's Requirement for the BWMS Installed Onboard



MPA
SINGAPORE

MARITIME AND PORT AUTHORITY OF SINGAPORE
SHIPPING CIRCULAR
NO. 08 OF 2017

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Singapore 119963
Fax: 6375 6231
http://www.mpa.gov.sg

23 March 2017

**Applicable to:** Shipowners, shipmanagers, operators, Masters of Singapore-registered ships, including passenger ships and Recognised Organisations

**BALLAST WATER MANAGEMENT CONVENTION (BWMC), 2004**

**Shipping Circular No.8 of 2017**

- The country of manufacture of the BWMS has to approve the BWMS.
- If the country of manufacture does not approve the equipment, ROs need to seek our acceptance/approval on a case by case basis.

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# BWMS Commissioning Test

## Amendments to Regulations E-1 of the Convention* – Commissioning Test

- Entered into force on 1 June 2022
- Amendments to BWM convention concerning commissioning testing of ballast water management systems

**Adopted by RESOLUTION MEPC.325(75), and refer to the 2020 Guidance for the commissioning testing of ballast water management systems (BWM.2/Circ.70/Rev.1), as may be amended.*

**Regulation E-1**

Surveys

1 Paragraph 1.1 is replaced by the following:

".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. This survey shall confirm that a commissioning test has been conducted to validate the installation of any ballast water management system by demonstrating that its mechanical, physical, chemical and biological processes are working properly, taking into account the guidelines developed by the Organization.*"

2 Paragraph 1.5 is replaced by the following:

".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. When an additional survey is undertaken for the installation of any ballast water management system, this survey shall confirm that a commissioning test has been conducted to validate the installation of the system by demonstrating that its mechanical, physical, chemical and biological processes are working properly, taking into account the guidelines developed by the Organization.*"

* Refer to the 2020 Guidance for the commissioning testing of ballast water management systems (BWM.2/Circ.70/Rev.1), as may be amended.

# BWMS Commissioning Test

## BWM.2/Circ.66/Rev.2

- Amendments to Regulations E-1 of the Convention – Commissioning Test

***Interpretation:***

1.1 Irrespective of new ships under construction subject to regulation E-1.1.1 or existing ships retrofitting ballast water management system(s) (BWMS) on board subject to regulation E-1.1.5, the commissioning testing of individual BWMS taking into account the guidelines developed by the Organization* should be conducted if the initial or additional survey is completed on or after 1 June 2022. If the initial or additional survey is completed before 1 June 2022, the commissioning testing of individual BWMS remains subject to the specific requirements of the Administration(s).

* Refer to the *2020 Guidance for the commissioning testing of ballast water management systems* (BWM.2/Circ.70/Rev.1), as amended.

# BWMS Commissioning Test

## Early Implementation applicable to Singapore-registered ships

MPA SINGAPORE

**MARITIME AND PORT AUTHORITY OF SINGAPORE**
**SHIPPING CIRCULAR**
**NO. 09 OF 2019**

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http://www.mpa.gov.sg

01st July 2019

**Applicable to:** Shipowners, ship managers, operators, Masters of Singapore-registered ships, Recognised Organisations (ROs), ballast water management equipment manufacturers, testing labs and shipyards

**COMMISSIONING TESTING OF BALLAST WATER MANAGEMENT SYSTEMS**

1. This circular is to inform the industry on the application of BWM.2/Circ.70 on "**Guidance for the commissioning testing of ballast water management systems**" for Singapore-registered ships (SRS).

3. The purpose of the commissioning test is to verify that the mechanical, physical, chemical and biological processes of the installed BWMS are working properly, taking into account guidelines developed by the IMO (i.e. the BWM.2/Circ.70, as may be amended). The commissioning test is not intended to validate the type approval of the BWMS.

4. The commissioning test shall be carried out for BWMS that is installed on board applicable SRS[2] of 400GT and above after **8 September 2019**. Applicable SRS of less than 400GT may undergo the commission test voluntarily.

5. The commissioning test shall be carried out to the satisfaction of the attending RO surveyor after a complete installation of the BWMS, and after all ballasting equipment (e.g. pumps and piping) has been fully tested as appropriate.

*Note: The shipping circular was removed after commissioning testing of BWMS has been made mandatory through BWM Convention.*

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# Contingency Measures

- BWM.2/Circ.62 - Guidance on contingency measures under the BWM Convention

- Contingency measure means a process undertaken on a case-by-case basis after a determination that ballast water to be discharged from a ship is not compliant, in order to allow ballast water to be managed such that it does not pose any unacceptable risks to the environment, human health, property and resources.

# Contingency Measures (Contd’)

- In the case of non-compliant ballast water, communication between the ship and the port State should occur. The ship and the port State should consider the following as possible contingency measures:

  I. actions predetermined in the Ballast Water Management plan of the ship;

  II. discharging ballast water to another ship or to an appropriate shipboard or land-based reception facility, if available;

  III. managing the ballast water or a portion of it in accordance with a method acceptable to the port State;

  IV. ballast water exchange carried out to an approved plan in accordance with regulation B-4 to meet the standard in regulation D-1. The ship and the port State should consider the potential disruption to the cargo handling operation plan of the ship and the potential impact to relating parties including port operators and cargo owners; or

  V. operational actions, such as modifying sailing or ballast water discharge schedules, internal transfer of ballast water or the retention of ballast water on board the ship. The port State and the ship should consider any safety issues and avoid possible undue delays.

# Contingency Measures (Contd’)

- Having considered all of the options above, the ballast water may be discharged in the port or any suitable area, as acceptable to the port State. Port State consideration may include environmental, safety, operational and logistical implications of allowing or disallowing the discharge. The discharge of ballast water is subject to any conditions of the port State. The port State should report information on the use of contingency measures in accordance with the experience building phase (EBP) associated with the BWM Convention (resolution MEPC.290(71)).
- In any case, the ship is required to do its best to correct malfunction of the Ballast Water Management system as soon as possible and submit its repair plan to the port State control authorities and the flag State.
- The port State, the flag State and the ship should work together to agree on the most appropriate solution to allow for the discharge of ballast water found to be non-compliant.
- The ship and the port State should take appropriate measures, bearing in mind that ballast water sampling is still under development, as noted in the Guidance on ballast water sampling and analysis for trial use in accordance with the BWM Convention and Guidelines (G2) (BWM.2/Circ.42/Rev.2) and the agreement on non-penalization during the EBP (MEPC.290(71)).

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# BWM Code Reg.A-4 Exemptions “Same Risk Area”

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.

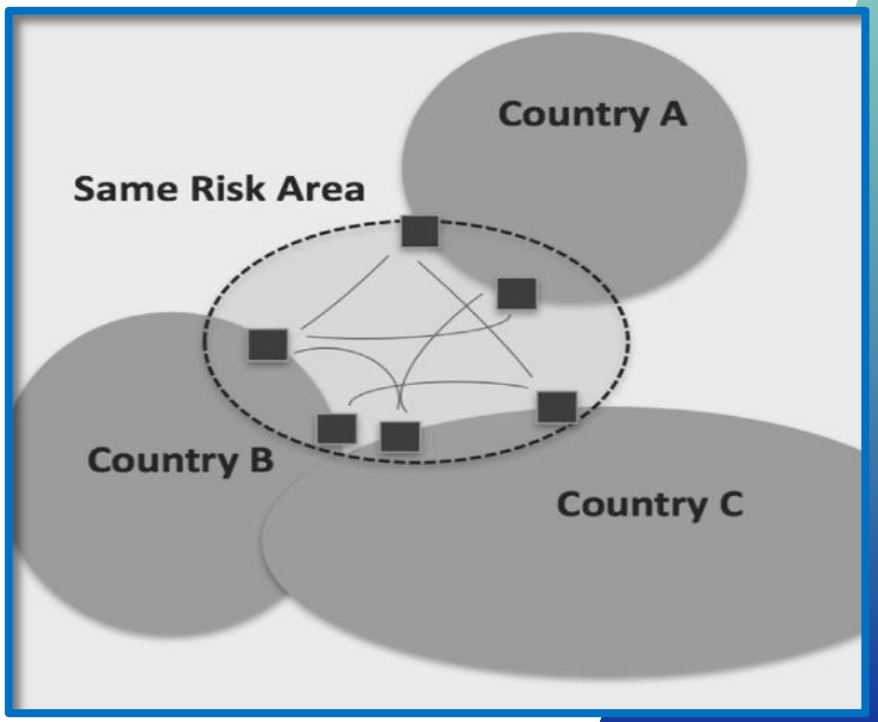
# BWM Code Reg.A-4 Exemptions “Same Risk Area”

- Accepted by IMO – G7 guidelines amended and the SRA was included in the “2017 G7 Risk Assessment Guidelines” (Res. MEPC. 289(71))

- Defined as – “an agreed geographical area” based on a completion of a risk assessment carried out in line with G7 guidelines

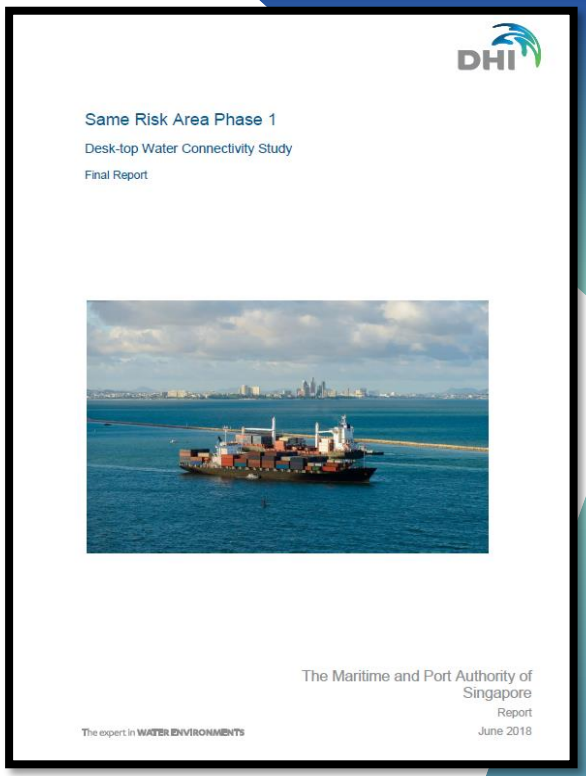
- Singapore is working together with neighbouring countries for the possibility of establishment of SRA:

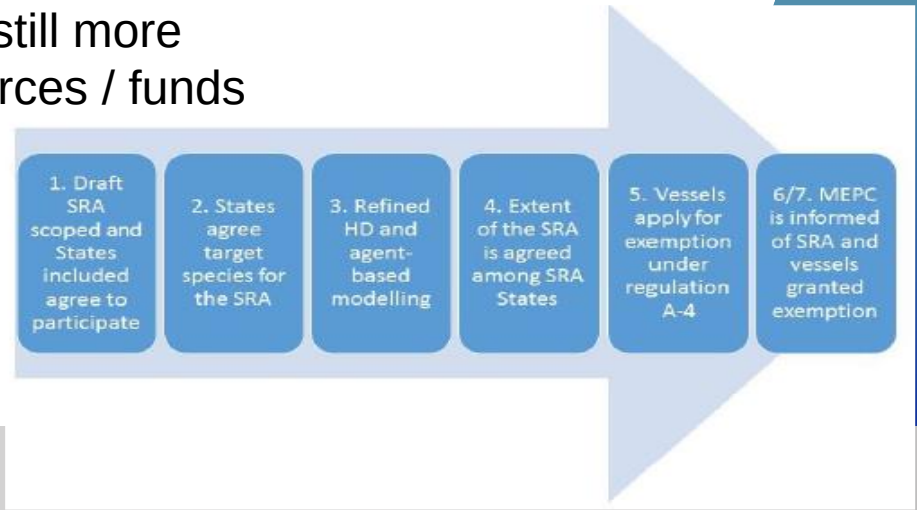
  - Prepare the list of target species for an SRA
  - Based on the target species the scale and cost of the study could be determined for budgetary purpose
  - If required, SRA work can start for the area covered in the study and increased progressively



# BWM Code Reg.A-4 Exemptions “Same Risk Area”

- MPA commissioned a Water Connectivity Study in 2018
- Scope of the study:
  - Water quality characteristics of the numerous ports
  - 3D hydrodynamic modelling of the Study Area
  - Flushing model for waters around Singapore till 50 nautical miles
- The aim of the study was to facilitate Step 1 of the SRA process to instill more confidence for the affected States to participate and commit on resources / funds

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# Challenges for the implementation of BWMC

# Challenges for the implementation of BWMC - Ports with Challenging Water Quality (PCWQ)

- Challenging water quality (CWQ) generally refers to ambient uptake water having quality parameters (including but not limited to high total suspended solids, or turbidity) that cause a properly installed, maintained and operated BWMS to be temporarily inoperable owing to reaching an operational limitation or inability to meet operational demands. However, temperature and salinity are not parameters that define CWQ. (Being discussed at MEPC)

- Ballast Water Review Group at MEPC 79 created a list of elements that should be taken into account in the development of any future guidance. (Annex 4 of MEPC.79/WP.6)

- An overarching theme throughout the conversation was the need to ensure a holistic approach in the guidance to ensure that consideration was given to other environmental implications of challenging uptake water and BWE+BWT, such as the impact on air emissions or a ship's CII rating and should align with other work within IMO.

- There is a need to improve BWMS performance in challenging waters with a view to avoiding these impacts, which underscores the need for guidance to be time limited.

# Challenges for the implementation of BWMC - Temporary Storage of Treated Sewage/Grey Water in Ballast Tanks

- There is an increase in ports prohibiting the discharge of treated sewage and grey water in their port waters.

- MEPC 79 endorsed the Ballast Water Review Group's view that the BWM Convention does not preclude the temporary storage of grey water or treated sewage in ballast tanks, and, furthermore, that this storage should be permitted, and that guidance should be developed.

- It is necessary to provide options for ships that cannot operate their sewage treatment plants and do not have dedicated holding tanks.

- New ships should follow future guidelines or the amendment to MARPOL Annex IV, such as to install dedicated treated sewage and/or grey water tanks within a safe area of the ship.

# Challenges for the implementation of BWMC - Application of BWM Convention to Unmanned Non-Self-Propelled (UNSP) Barges

- UNSP barge is unmanned during transits, does not have its own propulsion system and must be towed or pushed by tugboats to its designation

- UNSP barge is primarily used for the carriage of a wide range of cargo, structures or equipment on open deck

- Singapore and Denmark co-sponsored a paper MEPC 72/4/9 identifying the technical and operational challenges faced by UNSP barges fitted with ballast water tanks in complying with the BWM Convention:
  - UNSP barges are not fitted with machineries nor ballast system (pumps and piping).
  - UNSP barges are unmanned during transit, and to carry out BWE at sea requires movements of crew from tug boat to barge which is deemed to be unsafe.

- MEPC 72/4/9 proposes that the information provided be taken into consideration and given further attention during the Experience Building Phase (EBP)

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# For information