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Ballast Water Legislation: IMO IBWMC & USCG Final Rule

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Outline

- Ballast water Convention
  - Ballast water Management Plan
  - Ballast Water Record Book
  - Initial Survey
  - Port State Control
- USCG Final Rule
  - New Circular
  - EPA-VGP How to Comply?

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IMO

IMO

International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWMC)

Entry into force: 8 September 2017

13 YEARS

Address Aquatic Invasive Species in Ballast water

Adoption: 13 February 2004

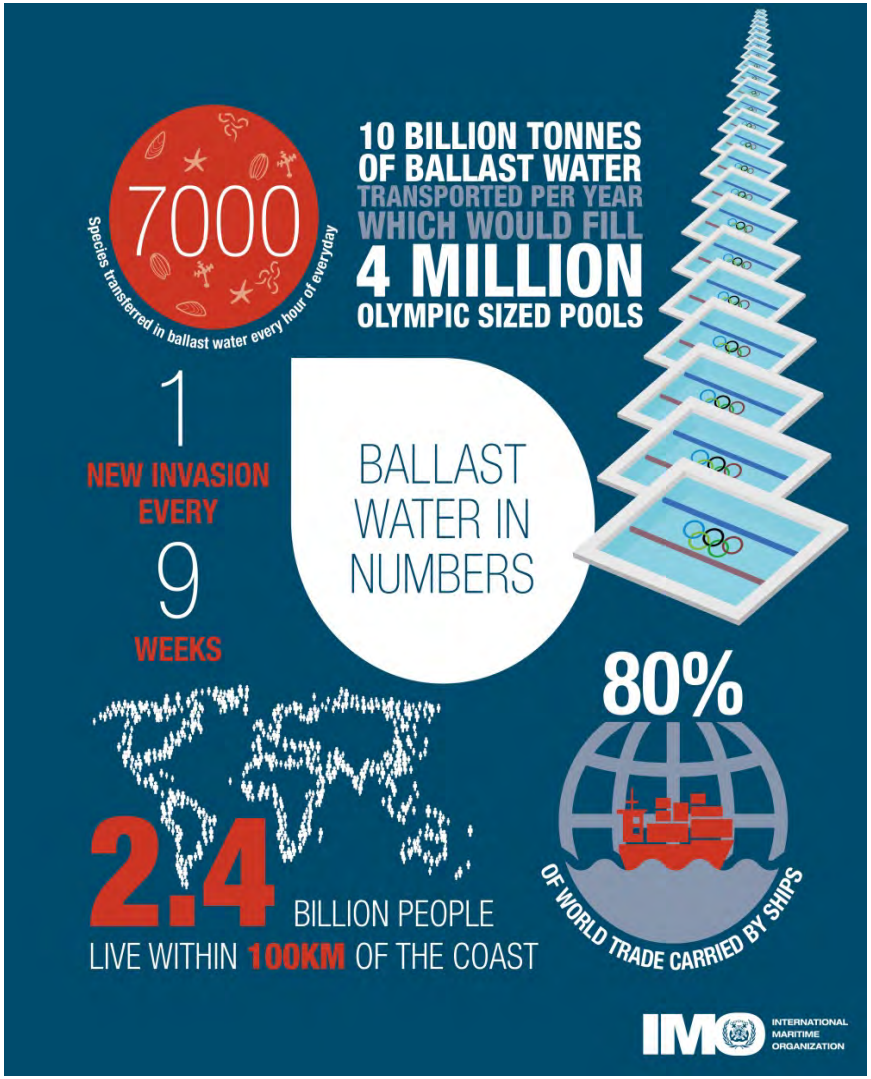
Condition: 30 IMO Member States = 35% World tonnage

Finland ratified on September 8, 2016 bringing totals to 52 countries (35.14%)

As per 07 June 2018, No of Contracting Countries is 73 (75.35%)

(Reference: http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/StatusOfTreaties.pdf)

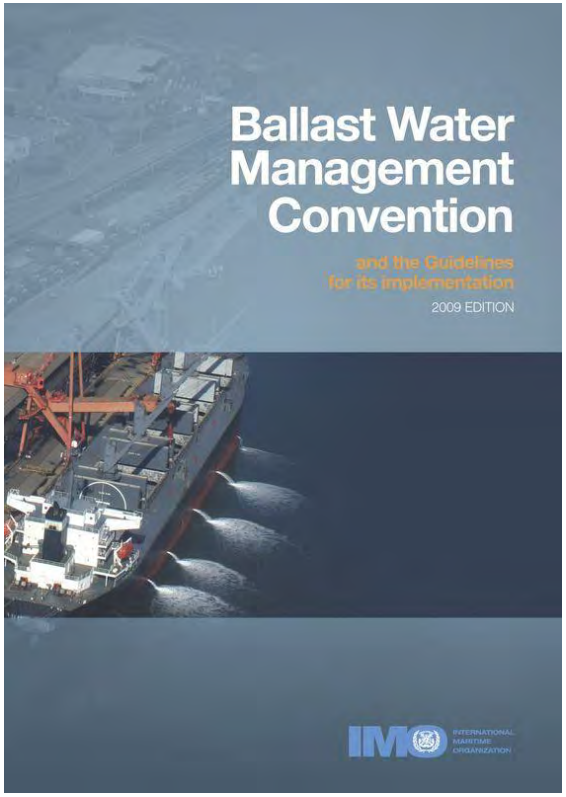
IMO



Scope : Ballast Water Management Convention - BWMC

Aims to end the transfer of non – indigenous species travelling in the ballast water to new aquatic ecosystems causing serious economic and environmental impacts

IMO



The Convention is divided into Articles **(22 Items)** and an Annex with **Section A-E** which includes technical standards and requirements

Under the Convention, all ships in international traffic are required to manage their ballast water and sediments to a certain **Standard**, according to a **Ship-specific Ballast Water Management Plan**

All ships will also have to carry
- **Ballast Water Record Book**
- **International Ballast Water Management Certificate**

Ships not Regulated by BWMC
- Without ballast water
- Sealed or permanent ballast water tanks
- War ships/naval auxiliary and other government ships

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IMO Convention

Article 1 Definitions
Article 2 *General Obligations*
Article 3 *Application*
Article 4 *Control of the Transfer of Harmful Aquatic Organisms and Pathogens Through Ships' Ballast Water and Sediments*
Article 5 *Sediment Reception Facilities*
Article 6 *Scientific and Technical Research and Monitoring*
Article 7 *Survey and certification*
Article 8 *Violations*
Article 9 *Inspection of Ships*
Article 10 *Detection of Violations and Control of Ships*
Article 11 *Notification of Control Actions*
Article 12 *Undue Delay to Ships*
Article 13 *Technical Assistance, Co-operation and Regional Co-operation*
Article 14 *Communication of information*
Article 15 *Dispute Settlement*
Article 16 *Relationship to International Law and Other Agreements*
Article 17 *Signature, Ratification, Acceptance, Approval and Accession*
Article 18 *Entry into Force*
Article 19 *Amendments*
Article 20 *Denunciation*
Article 21 *Depositary*
Article 22 *Languages*

ANNEX

Section A General Provisions
Section B Management and Control Requirements for Ships
Section C Additional measures
Section D Standards for Ballast Water Management
Section E Survey and Certification Requirements for Ballast Water Management

when

Complying with the Ballast Water Management Convention

Stopping the spread of invasive aquatic species

IMO

D1 standard requiring ships to exchange ballast water in open seas, away from coastal areas. Few organisms survive.

D2 standard specifying the maximum amount of viable organisms allowed to be discharged, including specified indicator microbes harmful to human health. Usually involves installing ballast water management system.

BACKGROUND INFO

- All new ships must conform to the D2 standard.
- Until the date when they have to meet the D2 standard, existing ships should exchange ballast water mid-ocean, to meet the D1 standard.
- Over time, all ships will have to meet the D2 standard.
- 'Renewal survey' refers to the IOPPC renewal survey under MARPOL Annex I

All ships must have:
- ballast water management plan
- ballast water record book
- International Ballast Water Management Certificate

2017

Existing ships built prior to 8 September 2017 must meet the D1 standard until their D2 compliance date.

New ships built on or after 8 September 2017 must meet the D2 standard.

2019

Existing ships with renewal survey between 8 September 2017 and 8 September 2019

Case 1: if previous renewal survey was between 8 September 2014 and 8 September 2017 – must comply with D2 by this renewal survey.

Case 2: if previous renewal survey was before 8 September 2014 – then compliance with D2 must be by the next renewal survey.

Existing ships with renewal survey after 8 September 2019 must meet D2 standard by this renewal survey.

2024

All ships must meet D2 standard by 8 September 2024.

D2 STANDARD

D1 STANDARD

IMO

Ballast Water Standard

There is a ballast water exchange standard and a ballast water performance standard.

IMO

Regulation D-1

Ballast Water Exchange Standard - Ships performing Ballast Water exchange shall do so with an efficiency of 95% volumetric exchange of Ballast Water

The ballast water management standards will be phased in over a period of time
As an intermediate solution, ships should exchange ballast water mid-ocean

Most ships will need to install an on-board ballast water treatment system

H O W

Regulation D-2 Ballast Water Performance Standard - Ships conducting ballast water management shall discharge:

Organisms > 50 microns : < 10 viable organisms / m^3

Organisms 10-50 microns : < 10 viable organisms / ml

Indicator microbes (human health standard) include:

a. Toxicogenic Vibrio cholerae (O1 and O139): <1 colony forming unit (cfu) / 100 ml or less than 1 cfu per 1 gram (wet weight) zooplankton samples ;

b. Escherichia coli <250 cfu / 100 ml;

c. Intestinal Enterococci < 100 cfu per 100 ml

Ballast Water Comply with **Regulation D-1**

Keep Note For Exchange

The BWMC states “A ship shall not be required to deviate from its intended voyage, or delay the voyage, in order to comply” with BWE.

The Shipmaster can decide not to do an exchange due to:

- Heavy weather conditions
- Ships safety or stability in danger
- Extraordinary operational impracticality

IMPORTANT: Make an entry in the BWRB stating the reasons. Inform Port State Control (PSC) before arrival. BWE areas may change.

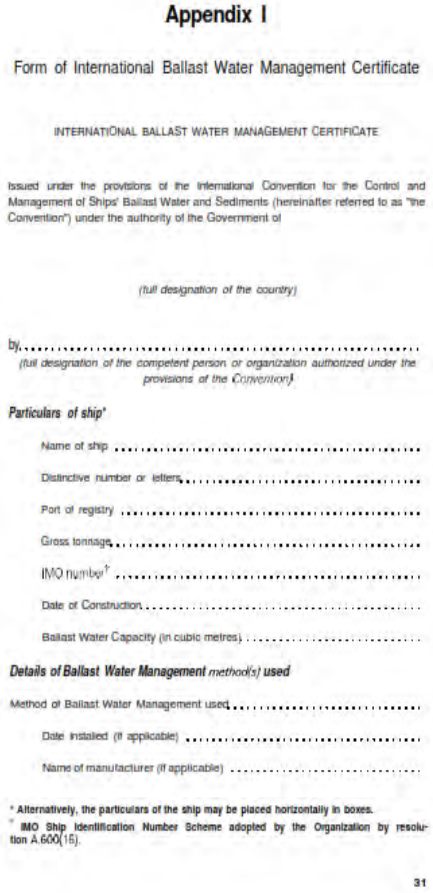
Ballast Water Comply with **Regulation D-2**

Keep Note For Treatment

Once the vessel has to comply with the D-2 standard it must have onboard

- IBWMC confirming compliance with D-2 standard
- A type approved BWMS installed
- An IMO type approval certificate
- An approved Ballast Water Management Plan
- Operational and safety manual for the BWMS
- An installation survey report to confirm compliance if type approval requires

International Ballast Water Management Certificate (IBWMC)



Appendix I

Form of International Ballast Water Management Certificate

INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

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

(full designation of the country)

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

Particulars of ship*

Name of ship .....

Distinctive number or letters.....

Port of registry .....

Gross tonnage.....

IMO number† .....

Date of Construction.....

Ballast Water Capacity (in cubic metres) .....

Details of Ballast Water Management** method(s) **used

Method of Ballast Water Management used.....

Date installed (if applicable) .....

Name of manufacturer (if applicable) .....

* Alternatively, the particulars of the ship may be placed horizontally in boxes.

† IMO Ship Identification Number Scheme adopted by the Organization by resolution A.600(15).

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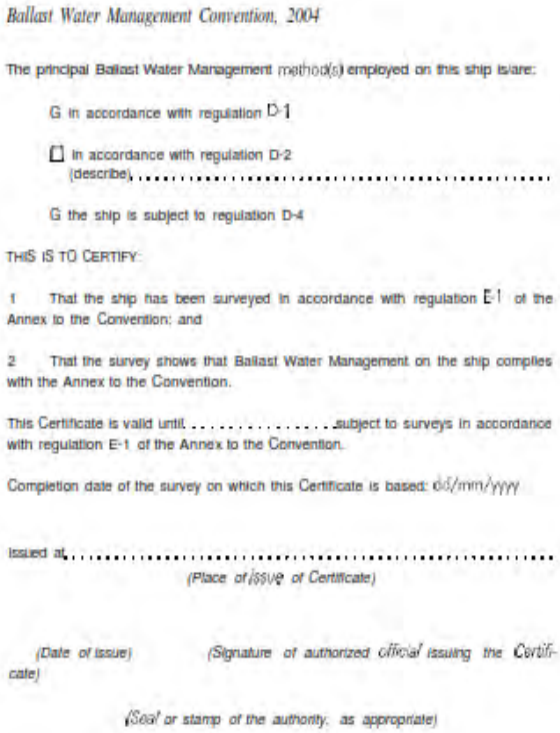


Ballast Water Management Convention, 2004

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

☐ in accordance with regulation D-1

☐ in accordance with regulation D-2
(describe).....

☐ the ship is subject to regulation D-4

THIS IS TO CERTIFY:

1 That the ship has been surveyed in accordance with regulation E-1 of the Annex to the Convention; and

2 That the survey shows that Ballast Water Management on the ship complies with the Annex to the Convention.

This Certificate is valid until .....subject to surveys in accordance with regulation E-1 of the Annex to the Convention.

Completion date of the survey on which this Certificate is based: dd/mm/yyyy

Issued at.....
(Place of issue of Certificate)

(Date of issue) *(Signature of authorized official issuing the Certificate)*

(Seal or stamp of the authority, as appropriate)

What are the requirements?

Ship Survey under Regulation E-1

Who Issues Certificate?
Administration FSA or contracted Parties

IBWMC per vessel

Ballast water Management Plan

Regulation B-1
Ballast Water Management plan

Each ship shall have on board and implement a Ballast Water Management plan. Such a plan shall be approved by the Administration taking into account

Keep Note BWMP

This document is ship specific and must now include BWMC relevant issues including compliance with D-1, D-2 or exception/exemption regime

.4 include the procedures for coordinating shipboard Ballast Water Management that involves discharge to the sea with the authorities of the State into whose waters such discharge will take place;

.5 designate the officer on board in charge of ensuring that the plan is properly implemented;

.6 contain the reporting requirements for ships provided for under this Convention; and

.7 be written in the working language of the ship. If the language used is not English, French or Spanish, a translation into one of these languages shall be included.

Ballast water Record Book

Regulation B-2
Ballast Water record book

1 Each ship shall have on board *a* Ballast Water record book that may be an electronic record system, or that may be integrated into another record

Keep Note BWRB

This document must now include BWMC relevant issues and is the place to record accidental or exceptional discharges and the circumstances justifying them

shall be signed by the master. The entries in the Ballast Water record book shall be in a working language of the ship. If that language is not English, French or Spanish the entries shall contain a translation into one of those languages. When entries in an official national language of the State whose flag the ship is entitled to fly are also used, these shall prevail in case of a dispute or discrepancy.

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

National Ballast water management requirements

National

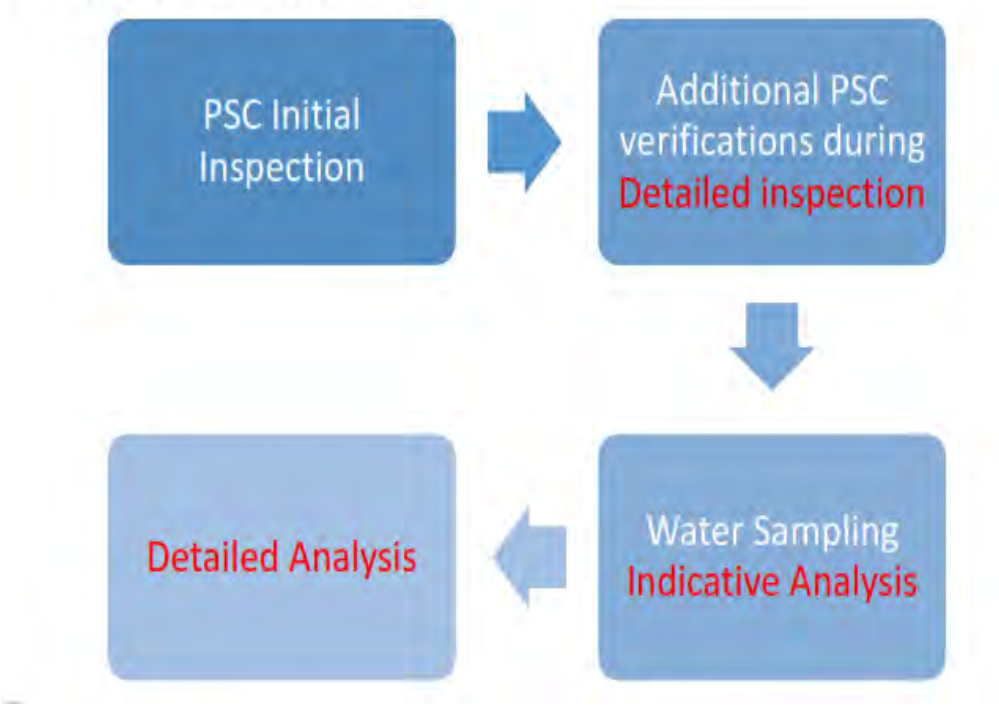
- Argentina
- Buenos Aires
- Australia
- Victoria
- Brazil
- Canada
- Chile
- Georgia
- Israel
- South Korea
- Būtingės naftos terminalas
- New Zealand
- Norway
- Panama
- Peru
- United Kingdom
- United States

Regional

- Persian Gulf
- Mediterranean Sea
- Baltic Sea
- Antarctica

Individual country authorities should be consulted before entering their jurisdiction, to **ensure compliance** with any relevant ballast water regulations.

Port State Control in 4 STAGES



Read For PSC

Article 9 of BWM Convention: Inspection of Ships (Stage 1+2)

Guidance BWM.2/Circ.42.Rev.1 & G2, G8 Guidelines (Stage 3+4)

Prepare for Port State Control: Stage 1 and 2

PSC Officer will

a) Inspect Documentation
   I. Certifications
   II. BWMP
   III. BWRB

b) Check familiarity of the responsible officer and crew with the BWMS

Keep Note for Inspection:
Update BWMP
Maintain BWRB
Training to crew
Ballast Water Officer on board

Prepare for Port State Control Stage 3 and 4

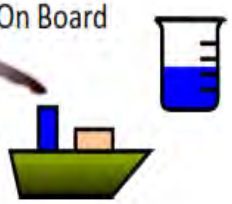
Indicative and Detailed Analysis

Indicative

Rules: G2 and BWM.2/Circ.42

- Visual counts
- Visual inspection
- Portable instruments

PLACE: On Board



Detailed

Rules: G2, G8 & BWM.2/Circ.42

- Visual counts
- Visual inspection
- Culture methods

PLACE: On Shore

Keep Note for Sampling Best Practices:

Follow Testing Protocol as per G2

Follow up Latest IMO & USCG procedures for sampling and Guidelines

Enhance crew awareness on sampling issues

Procedures for indicative analysis

Operator's routine exercise (proactive action)

Always request a QAPP for sampling procedures and protocol from Shore labs (detailed analysis)

IMO

IMO BWM Convention ⟷ Prevent alien species from invading

- ❑ Familiarize with the Convention
- ❑ Compliance Date Of the Ship
- ❑ Install a BWTS on Board
- ❑ Initial Survey
- ❑ Ballast Water International Certificate
- ❑ Update Ballast water Management Plan
- ❑ Keep Ballast water Record Book
- ❑ Train the Crew
- ❑ Have a Ballast water Officer on Board

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USA

USCG Ballast Water Program

US is not a signatory to the Convention and has a separate national legislation on ballast water

The USCG regulations on ballast water treatment are defined in the Code of Federal Regulations (CFR) in the 2012 ballast 'final rule'.

- ❑ U.S. BWM regulations remain the same after the BWC came into force
- ❑ Compliance options for U.S. regulation
- ❑ Same discharge as per IMO

USCG

Options for Compliance

1. No BW Discharge

2. Coast Guard Approved Ballast Water Management System

3. Discharge to Facility Onshore or to Another Vessel for Purpose of Treatment

4. Use only water from a U.S. Public Water System

Two Temporary Compliance Alternatives

1. Alternate Management System (AMS) – Temporary Designation for up to 5 years

2. Receive an Extension to Vessel's Compliance Date - extension period will vary depending upon TA system availability

USCG

The USCG regulations also contain some additional requirements regarding a ship operational procedures that go beyond the IMO's requirements.

- ✓ Maintain a BWMP covering US requirement (need not be approved)
- ✓ Submit a Reporting Form before calling at an US port
- ✓ Plans for Management of Biofouling and Sediment must be available, e.g. in the BWMP, and records of ballast, sediment and fouling management must be kept

Additional requirements are found in the Vessel General Permit (VGP) for periodical sampling of the discharge

EPA VGP 2013

National Pollutant Discharge Elimination System (NPDES)
Relies heavily on self-reporting

The 2013 Vessel General Permit (VGP) issued on 28 March 2013 covers discharges **incidental** to the normal operation of a vessel, including ballast water, into waters of the US.

Effluent limits and requirements are established for ballast water that aligns with USCG requirements.

The 2013 VGP became effective **19 December 2013** and expires on 1**8 December 2018**.
In general, the 2013 VGP works in conjunction with the USCG ballast water regulations in the US and includes additional definitions, exclusions and management requirements for vessels

Similarities and Differences USCG/EPA

Similarities

- Ballast Water Discharge Standard is the same
- EPA accepts, but does not require BWMS to be AMS accepted or U.S. Type Approved
- Allows the same 5 methods for ballast water management
- Requires similar Ballast Water Management Plan
- Requires compliance with Best Management Practices

Differences

- Must apply for Permit Coverage (eNOI)
- Must conduct BWE + BWT for certain vessels entering the Great Lakes
- Must conduct biological efficacy monitoring
  - Twice/year for AMS, US TA'ed, or some foreign administration TA
  - Four times/year for all others
- Functional Monitoring, monthly
- Must conduct residual biocide monitoring for vessels using active substances
- Must submit annual report
- No allowance for extensions

MARINE SAFETY CENTER (MSC)

ORGANIZATION
- HULL DIVISION (MSC-1)
- ENGINEERING DIVISION (MSC-2)
- TANK VESSEL/OFFSHORE DIVISION (MSC-3)
- TONNAGE DIVISION (MSC-4)
- VESSEL SECURITY DIVISION (MSC-5)

SERVICES
- SALVAGE ENGINEERING RESPONSE TEAM (SERT)
- BALLAST WATER MANAGEMENT

REFERENCES
- MSC TECHNICAL NOTES
- PLAN REVIEW GUIDELINES / DESIGN VERIFICATION GUIDES
- TONNAGE GUIDES
- USEFUL LINKS (E-CFRS, CGMIX, ETC)
- MSC INFORMATION BULLETINS

CONTACT MSC

U.S. COAST GUARD MARINE SAFETY CENTER

WASHINGTON, D.C

Ballast Water Management System Switchboard

Ballast Water Management Type Approval Information

Approved BWMS and Status of Applications	MSC provides a listing of BWMSs under review, and their current type approval status.
Type Approval Certificates	In response to widespread interest from industry, the Coast Guard posts copies of BWMS type approval certificates here.
FAQs	Frequently asked questions regarding ballast water, including useful discussion on the specifics of the type approval process.
Marine Safety Center Ruling on Most Probable Number (MPN)	Four BWMS manufacturers requested to use the MPN method as an alternative to the required testing standards. The Marine Safety Center denied the requests. Due to significant public interest, the response letters are available for viewing.

Supportive media

IMO official Website

IMO / English / Our Work / Marine Environment / Ballast Water Management

Ballast Water Management

Since the introduction of steel-hulled vessels, water has been used as ballast to stabilize vessels at sea. Ballast water is pumped in to maintain safe operating conditions throughout a voyage. This practice reduces stress on the hull, provides transverse stability, improves propulsion and manoeuvrability, and compensates for weight changes in various cargo load levels and due to fuel and water consumption.

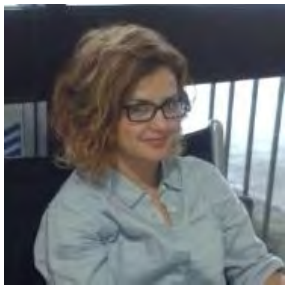
While ballast water is essential for safe and efficient modern shipping operations, it may pose serious ecological, economic and health problems due to the multitude of marine species carried in ships' ballast water. These include bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species. The transferred species may survive to establish a reproductive population in the host environment, becoming invasive, out-competing native species and multiplying into pest proportions.

Scientists first recognized the signs of an alien species introduction after a mass occurrence of the Asian phytoplankton algae Odontella *(Biddulphia sinensis)* in the North Sea in 1903. But it was not until the 1970s that the scientific community began reviewing the problem in detail. In the late 1980s, Canada and Australia were among countries experiencing particular problems with invasive species, and they brought their concerns to the attention of IMO's Marine Environment Protection Committee (MEPC).

Related Links

- Relevant Guidelines and guidance documents
- GloBallast Partnerships Programme
- Clip "Invaders from the Sea" video

End of presentation



Thank you for your Attention

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***How inappropriate to call this planet Earth when it is clearly Ocean** (AC. Clarke)*