European Maritime Safety Agency

The role of the FS in the implementing the BWMC.

Training on implementation & Compliance with BWM Convention

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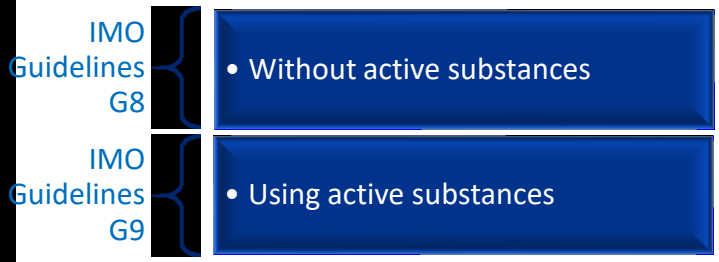
Unit 1.3 Capacity Building

Tekirdağ / 20 -21 February 2020

EMSA

Content

- Regulation D-3 Approval Requirements for BWM Systems
- Type approval process of the BWMS
- BWM certificate and documentation

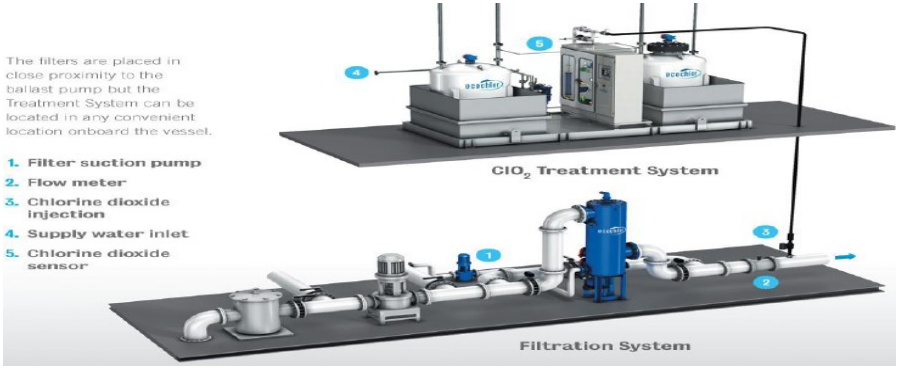


Regulation D-3 Approval Requirements for BWM Systems:

- BWM systems must be approved by the Administration taking into account of the IMO guidelines (G8 & G9)

- For systems using active substances (reg. A-1.7 definition) must be approved by IMO (G9 guidelines) before approval by the Administration.

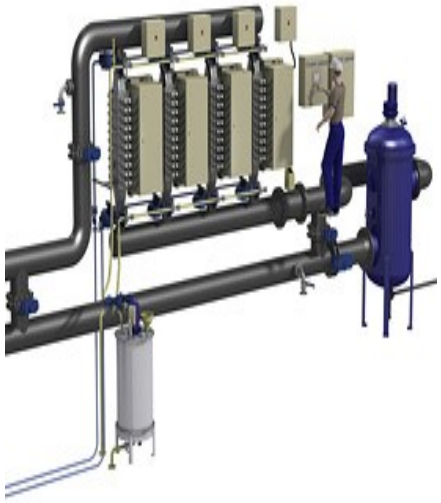
- Systems must be safe for ship, equipment and crew (BWM.2/Circ.20)



Reg. D2 performance standard for BWMS

In which way Administration can assess whether BWMS meet the standard set out in Regulation D-2

- ~~IMO Resolution MEPC.125(53) adopted in 2005 G8~~
- IMO Resolution MEPC.174(58) adopted in 2008
- IMO Resolution MEPC.279(70) adopted in 2016 (amends the previous one)



As agreed during MEPC.71 to be converted into a **mandatory Code (BWMS Code)** through IMO **Res. MEPC.300(72) - (EIF 13 Oct 2019)**

Transition period

Before 28 Oct 2020	After 28 Oct 2020
Those systems approved taking into account MEPC.174(58) may be installed on board	Shall be approved taking into account the BWMS Code

Type approval process BWMS – Some definitions

SDL (System design limitations) the water quality and operational parameters, determined in addition to the required type approval testing parameters, that are important to achieve the performance standard of regulation D-2.

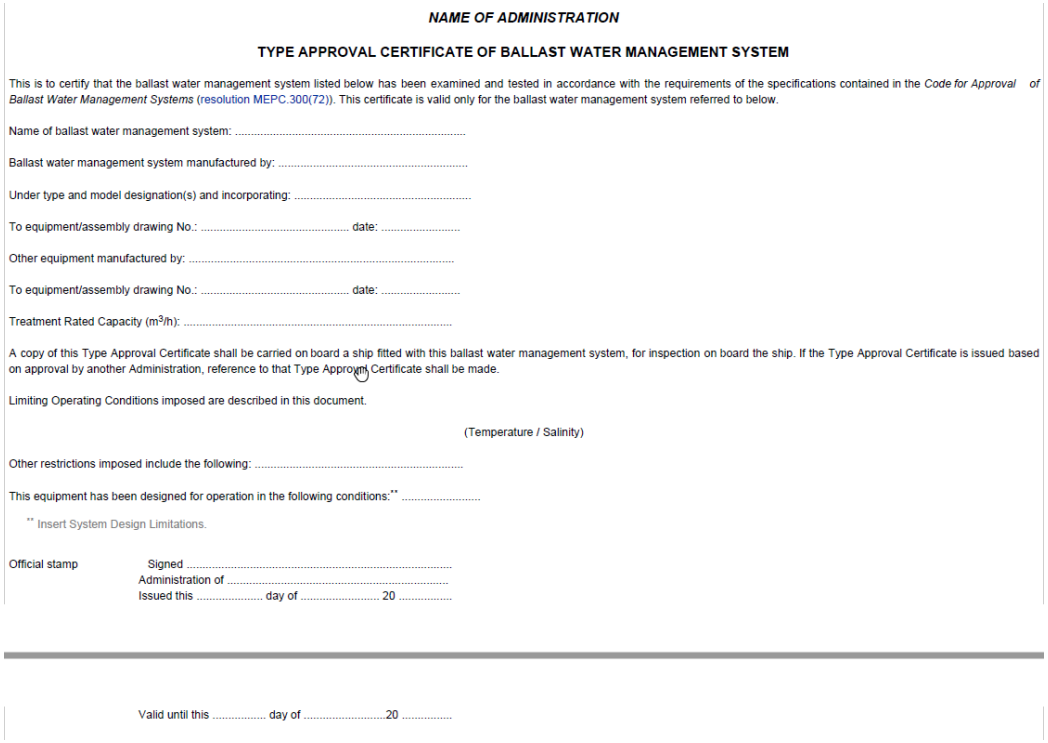
Land-based testing means a test of the BWMS carried out in a laboratory, equipment factory or pilot plant including a moored test barge or test ship, according to Parts 2 and 3 of the annex to this Code, to confirm that the BWMS meets the ballast water performance standard described in regulation D-2 of the Convention.

Shipboard testing: a full-scale test of a complete BWMS carried out on board a ship according to part 2 of the annex to this Code, to confirm that the system meets the standards set by regulation D-2 of the Convention.

Type approval process – Some definitions

The approval shall take the form of a **Type Approval Certificate** of BWMS, specifying the main particulars of the BWMS and validated SDL.

Such certificates shall be issued in accordance with Part 7 of the annex in the **format shown in the appendix**.



NAME OF ADMINISTRATION

TYPE APPROVAL CERTIFICATE OF BALLAST WATER MANAGEMENT SYSTEM

This is to certify that the ballast water management system listed below has been examined and tested in accordance with the requirements of the specifications contained in the *Code for Approval of Ballast Water Management Systems* (resolution MEPC.300(72)). This certificate is valid only for the ballast water management system referred to below.

Name of ballast water management system: .....

Ballast water management system manufactured by: .....

Under type and model designation(s) and incorporating: .....

To equipment/assembly drawing No.: ..... date: .....

Other equipment manufactured by: .....

To equipment/assembly drawing No.: ..... date: .....

Treatment Rated Capacity (m^3/h): .....

A copy of this Type Approval Certificate shall be carried on board a ship fitted with this ballast water management system, for inspection on board the ship. If the Type Approval Certificate is issued based on approval by another Administration, reference to that Type Approval Certificate shall be made.

Limiting Operating Conditions imposed are described in this document.

(Temperature / Salinity)

Other restrictions imposed include the following: .....

This equipment has been designed for operation in the following conditions:** .....

** Insert System Design Limitations.

Official stamp

Signed .....
Administration of .....
Issued this ..... day of ..... 20 .....

Valid until this ..... day of .....20 .....

Type approval process – Some definitions

A **Type Approval Certificate** of a BWMS shall be issued by the Administration based on satisfactory compliance with all the requirements described in Parts 1, 2, 3 and 4 of the annex.

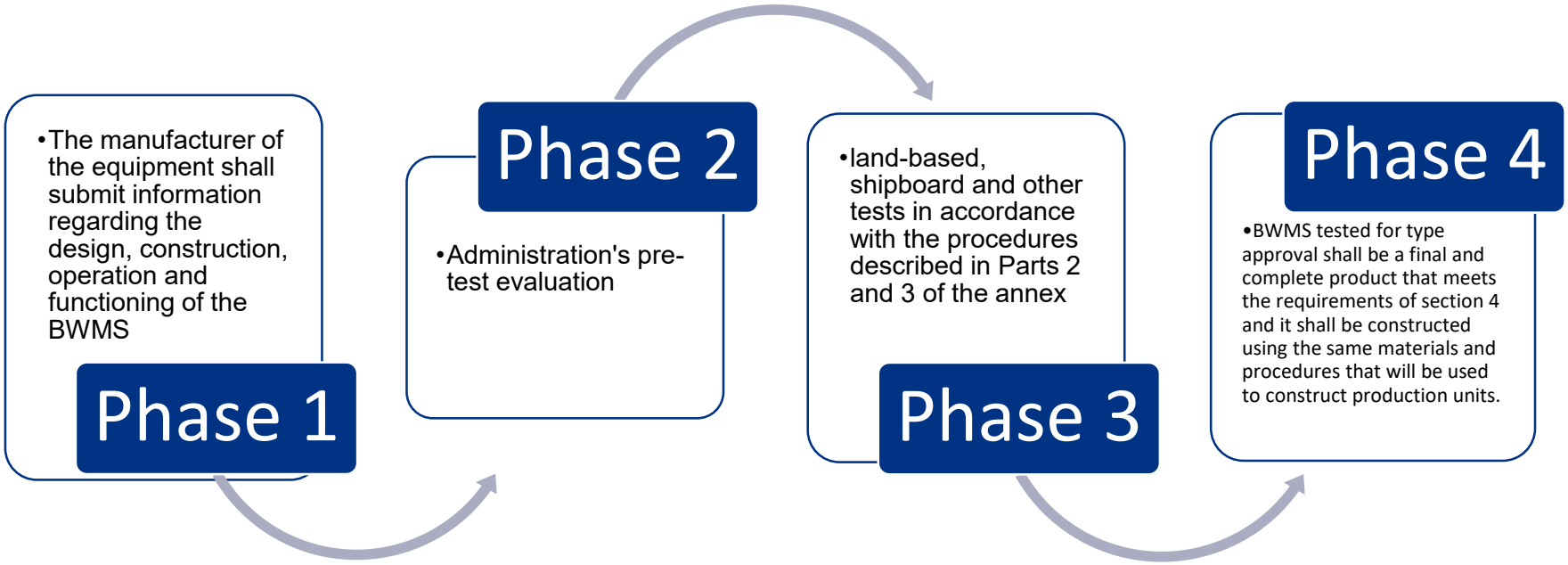
Part 1: Specifications for pre-test evaluation of system documentation provided by the manufacturer/developer

Part 2: Test and performance specifications for approval of BWMS (competency and quality control of test facility's shall be assessed by the Administration)

Part 3: Specification for environmental testing for approval of BWMS

Part 4: Sample analysis methods for the determination of biological constituents in ballast water

Type approval process (BWMC Code para 5)



Type approval process (BWMC Code para 5)

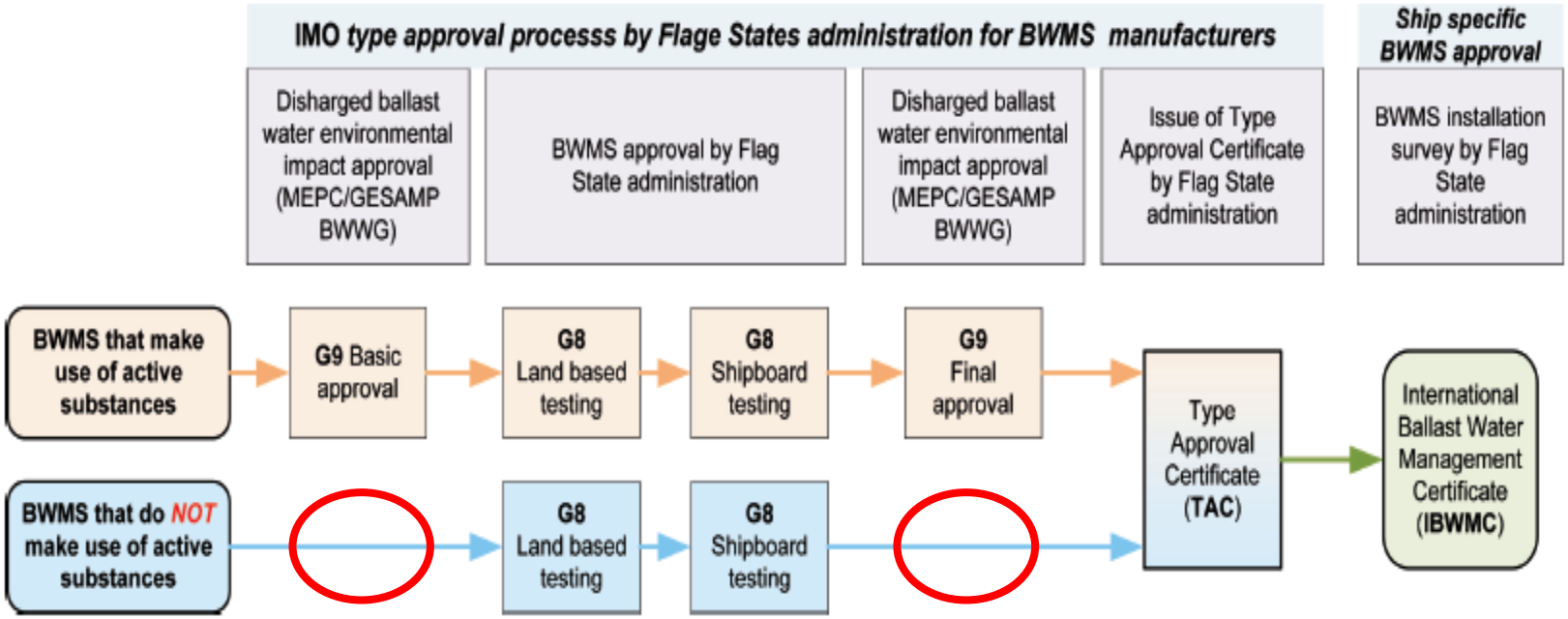


Figure 1 *IMO procedure for obtaining BWTS TAC and IBWMC* [authors]

Key Ballast Water Management Regulations With a View on Ballast Water Management Systems Type Approval Process, Čampara, Slišković, Jelić Mrčelić 2019

Part 1 (PRE-TEST EVALUATION OF SYSTEM DOCUMENTATION)

I) Evaluating the readiness of the BWMS for undergoing approval testing

II) Evaluating the manufacturer's proposed SDL and validation procedures

Readiness evaluation

Design & construction.

Adequate risk assessment done by the Adm

Adequate info on installation, calibration and maintenance req. needed to identify any potential H or Env safety problems

Individuation of major components (new test if they change)

Manufacturer's proposed SDL and validation procedures

Assessment of SDL have been considered and detailed

Suitability and reliability of the methods proposed for validating the claimed low and/or high values for each SDL.

Quality Assurance & Quality Control Procedures of Testing Facility

- Test facility to demonstrate the competency in conducting valid TA test
  - ✓ by implementing a rigorous QC & QA programme approved, certified and audited by an independent accreditation body;
  - ✓ by demonstrating its ability to conduct valid test cycles with appropriate challenge water, sample collection, sample analysis and method detection limits.
- Test facility's quality control/quality assurance programme shall consist
  - ✓ Quality Management Plan (QMP) addressing the quality control management structure and policies of the testing body (including subcontractors and outside laboratories);
  - ✓ Quality Assurance Project Plan (QAPP) which defines the methods, procedures, and quality assurance and quality control (QA/QC) protocols used by the test facility
- Shipboard tests
- Land based tests
- Reporting of test results submitted to the Administration (para 2.56) with info on test design, methodology of analysis & results showing that D2 standards have been met in all test cycles.

Taking onto account international test specifications for type approval (IACS UR E10 Rev 7 – Test Spec for TA)

Vibration Tests

Acceleration Tests

Temperature Tests

Humidity Tests

Test for protection against heavy seas

Fluctuation in power supply (voltage variations etc..)

Inclination test

Electronic and electrical reliability

Part 4 –Sample Analysis Methods for Determination of Biological Constituents in BW

Sample processing & analysis (widely accepted standards methods for the collection, handling, storage and analysis should be used)

D2 standards determination

Species and Viability of organisms

A treatment test cycle

Eco-toxicological acceptability of Discharge (ref to par. 5.2.3 to 5.2.7 of G9)

TA certification

The type approval certificate will be on a format as set forth in the Appendix of BWMS Code.

The TA Certificate and the TA report (including their entire contents and all annexes, appendices or other attachments) shall be accompanied by a translation into English, French or Spanish if not written in one of those languages.

The type approval certificate is valid for 5 Years IMO MSC.1/Circ.1221“Validity of type approval certification for marine products”

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

1. Certificates relating to Survey and Inspection
   - International Ballast Water Management Certificate
   - Endorsement for Annual/Intermediate Surveys
   - Endorsement for Annual/Intermediate Surveys in line with E.5.8.3
   - Endorsement in accordance with Regulation E.5.3 (less than 5 years)
   - Endorsement in accordance with Regulation E.5.4 (renewal survey – no time for issuing certificate)
   - Endorsement in accordance with Regulation E.5.5/6 (ship not in port/short sea shipping)
   - Endorsement in accordance with Regulation E.5.8 (early survey)
   - Exemptions
2. Ballast Water Record Book
3. Ballast Water Management Plan *Guidelines* for ballast water management and development of *ballast water management plans* (G4).

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APPENDIX I

FORM OF INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

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

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

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

Particulars of ship[1]

Name of ship .....

Distinctive number or letters .....

Port of registry .....

Gross Tonnage .....

IMO number[2] .....

Date of Construction .....

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

Details of Ballast Water Management Method(s) Used

Method of Ballast Water Management used .....

Date installed (if applicable) .....

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

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

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)

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEY(S)

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

Annual survey: Signed .....
(Signature of duly authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

Annual*/Intermediate survey*: Signed .....
(Signature of duly authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

Annual*/Intermediate survey*: Signed .....
(Signature of duly authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

Annual survey: Signed .....
(Signature of duly authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate.

**ANNUAL/INTERMEDIATE SURVEY
IN ACCORDANCE WITH REGULATION E-5.8.3**

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

Signed .....
(Signature of authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

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

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

Signed .....
(Signature of authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

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

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

Signed .....
(Signature of authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate

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

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

Signed .....
(Signature of authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

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

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

Signed .....
(Signature of authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

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

Signed .....
(Signature of duly authorized official)

Place .....

Date.....

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate

NAME OF ADMINISTRATION

European Maritime Safety Agency

TYPE APPROVAL CERTIFICATE OF BALLAST WATER MANAGEMENT SYSTEM

This is to certify that the ballast water management system listed below has been examined and tested in accordance with the requirements of the specifications contained in the *Code for Approval of Ballast Water Management Systems* (resolution MEPC.300(72)). This certificate is valid only for the ballast water management system referred to below.

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Ballast water management system manufactured by: .....

Under type and model designation(s) and incorporating: .....

To equipment/assembly drawing No.: ..... date: .....

Other equipment manufactured by: .....

To equipment/assembly drawing No.: ..... date: .....

Treatment Rated Capacity (m^3/h): .....

A copy of this Type Approval Certificate shall be carried on board a ship fitted with this ballast water management system, for inspection on board the ship. If the Type Approval Certificate is issued based on approval by another Administration, reference to that Type Approval Certificate shall be made.

Limiting Operating Conditions imposed are described in this document.

(Temperature / Salinity)

Other restrictions imposed include the following: .....

This equipment has been designed for operation in the following conditions:** .....

** Insert System Design Limitations.

Official stamp

Signed .....
Administration of .....
Issued this ..... day of ..... 20 .....

Valid until this ..... day of .....20 .....

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Ballast Water Management Statement of Compliance

This Statement of Compliance is issued for the information of interested parties to indicate compliance with 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 by Lloyd's Register Asia.

	Particulars of ship
Name of ship	-
Distinctive numbers or letters	
Port of registry	**Kobenhavn**
Gross tonnage	**20,151**
IMO number	
Date of construction	**17 January 2017**
Ballast water capacity (in cubic metres)	**11058**
	Details of ballast water management method(s) used
Method of Ballast water management used	**Treatment, exchange (sequential)**
Date installed (if applicable)	**30 November 2016**
Name of manufacturer (if applicable)	**PANASIA Glotn-Patrol**

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) **UV Treatment method used.**

☐ 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 **16 January 2022** 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: **17 January 2017**

Issued at **Anhae** on **17 January 2017**

Lloyd's Register Asia
O. Dalmatov

O.Dalmatov
Surveyor to Lloyd's Register Asia

a member of the Lloyd's Register group.

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