PSC Study

Ballast Water Management

September 2018

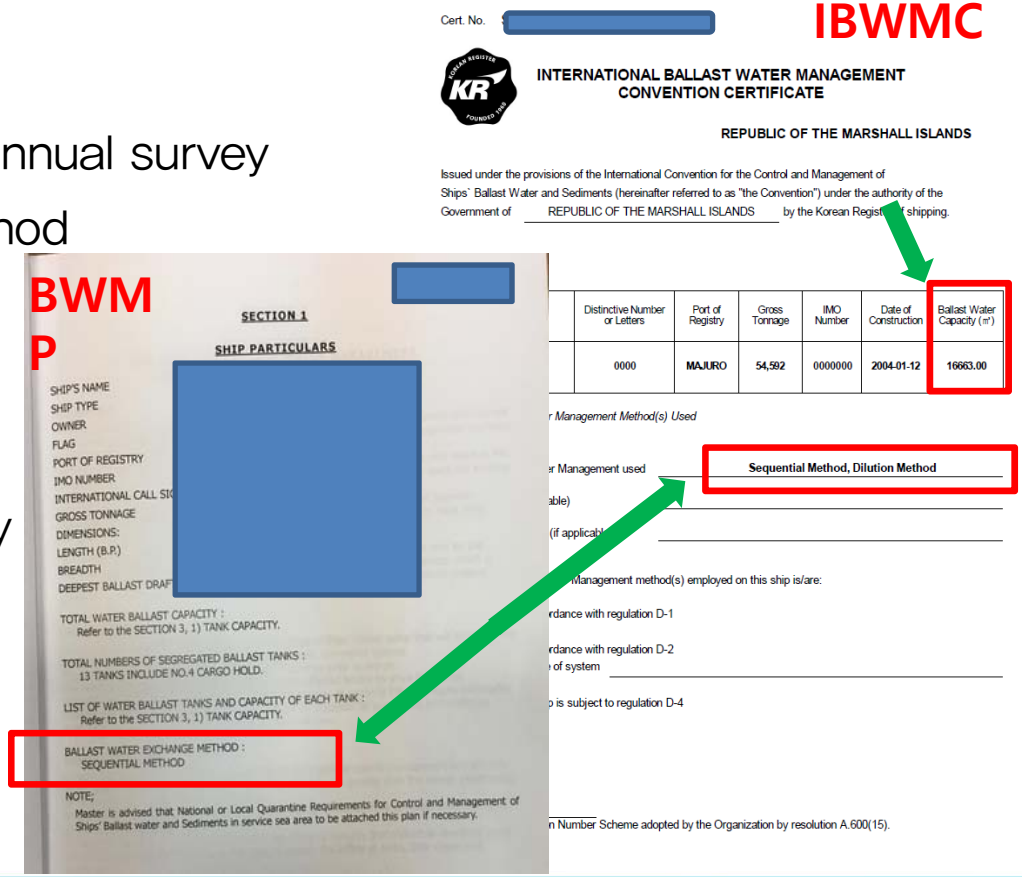
KR Survey Team

Contents

Ⅰ Reg.D-1 Ballast Water Exchange_Check Point

1. International Ballast Water Management Certificate (IBWMC)

- ✓ **(Check)** Confirming **IBWM certificate is on board.**
- ✓ **(Object)** Ships of 400 gross tonnage and above to which this Convention applies
- ✓ **(Deficiencies)**
  - ▷ Missed KR Endorsement after annual survey
  - ▷ Inconsistency of Exchange Method
    (ex) Cert_Sequential + Dilution
    BWMP_Dilution Method
  - ▷ No cert on board
  - ▷ Inconsistency of ballast capacity
    (ex) different with BWMP
    –〉 Capacity is based on stability booklet, and it shall be the same with Cert & BWMP.



2. Ballast Water Management Plan (BWMP)

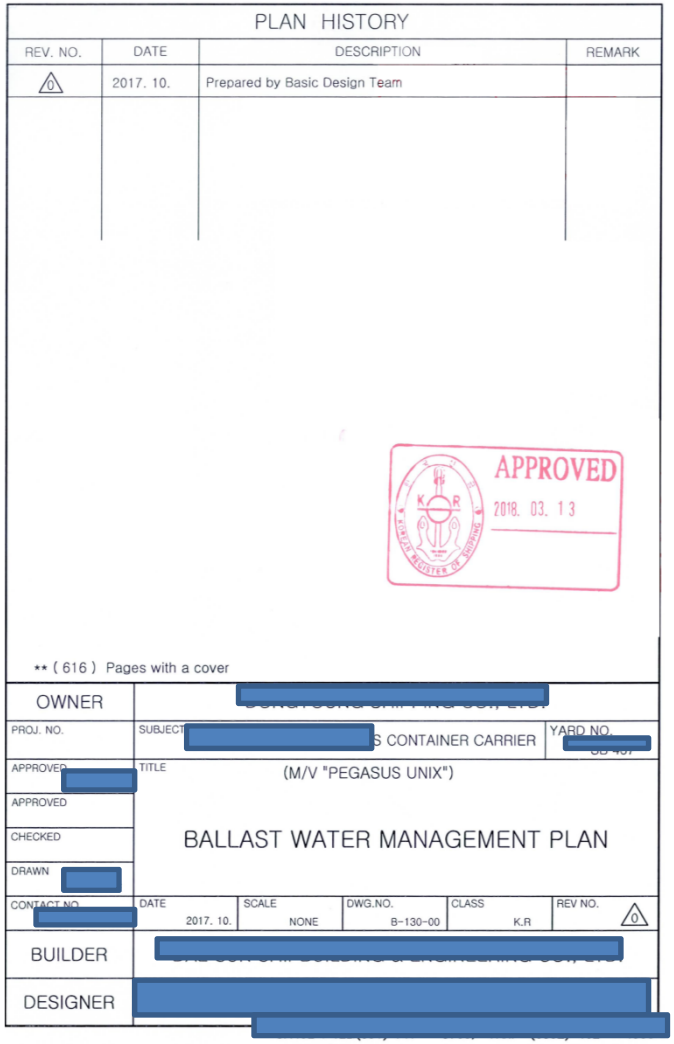
✓ **(Check)** Confirming **approved BWMP is on board.**

✓ **(Deficiencies)**

▷ Unapproved BWMP was on board
(ex) TOC vessel from other class –〉
Missed KR Endorsement

▷ No BWMP on board

▷ No designated officer has been nominated or familiarization
(ex) No familiarization on sediment control



PLAN HISTORY

REV. NO.	DATE	DESCRIPTION	REMARK
0	2017. 10.	Prepared by Basic Design Team	

APPROVED
2018. 03. 13

** (616) Pages with a cover

OWNER	[redacted]
PROJ. NO.	SUBJECT [redacted] S CONTAINER CARRIER YARD NO. [redacted]
APPROVED [redacted]	TITLE (M/V "PEGASUS UNIX")
APPROVED	BALLAST WATER MANAGEMENT PLAN
CHECKED	
DRAWN [redacted]	
CONTACT NO. [redacted]	DATE 2017. 10. / SCALE NONE / DWG.NO. B-130-00 / CLASS K.R / REV NO. 0
BUILDER	[redacted]
DESIGNER	[redacted]

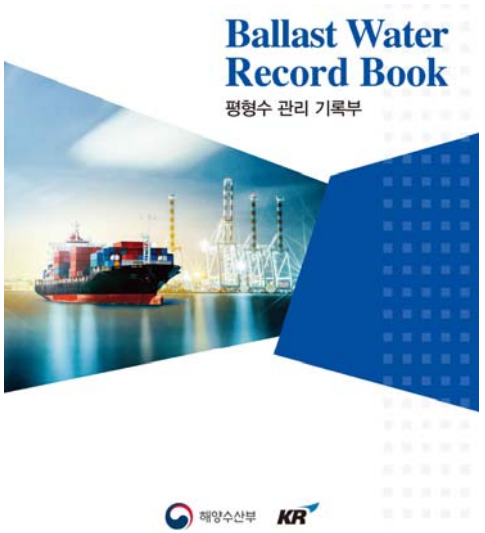
3. Ballast Water Record Book (BWRB)

✓ **(Check)**

▷ Confirming BWRB is on board
▷ Confirming entries for all ballast water operations
▷ Confirming signature by the officer in charge and Master is completed.
▷ Confirming BWRB shall be kept on board for min. two years after the last entry. (thereafter in the Company's control for a minimum period of three years)
▷ Confirming entries for sediment control

✓ **(Deficiencies)**

▷ Missed entries in BWRB
(ex) Btw Korea/Japan, no entries for ballast operations
▷ Entries in BWRB are not matched with BWM Convention.
(ex) Comparison of ballast water discharge time based on pump capacity and recorded discharge time
(Some PSCO check the recorded discharge time using pump capacity less than max. capacity indicated in pump cert)
▷ No signature
▷ No familiarization of the officer in charge



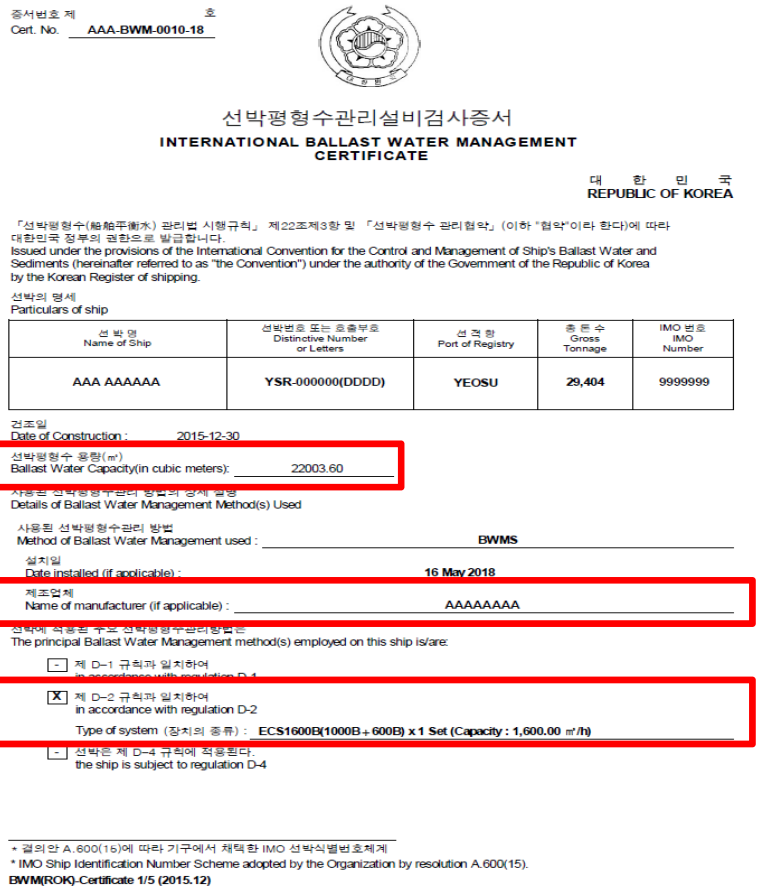
Ⅱ Reg.D-2 Ballast Water Management System _ Check Point

1. International Ballast Water Management Certificate (IBWMC)

- ✓ (Check) Confirming **IBWM certificate is on board.**
- ✓ **(Object)** Ships of 400 gross tonnage and above to which this Convention applies
- ✓ **(Deficiencies)**
  - ▷ Missed KR Endorsement after annual surv
  - ▷ No cert on board
  - ▷ Inconsistency of ballast capacity

    (ex) different with BWMP

    –〉 Capacity is based on stability booklet, and it shall be the same with Cert & BWMP.



증서번호 제 호
Cert. No. AAA-BWM-0010-18

선박평형수관리설비검사증서
INTERNATIONAL BALLAST WATER MANAGEMENT CERTIFICATE

대 한 민 국
REPUBLIC OF KOREA

「선박평형수(船舶平衡水) 관리법 시행규칙」 제22조제3항 및 「선박평형수 관리협약」(이하 "협약"이라 한다)에 따라 대한민국 정부의 권한으로 발급합니다.
Issued under the provisions of the International Convention for the Control and Management of Ship's Ballast Water and Sediments (hereinafter referred to as "the Convention") under the authority of the Government of the Republic of Korea by the Korean Register of shipping.

선박의 명세
Particulars of ship

선 박 명 Name of Ship	선박번호 또는 호출부호 Distinctive Number or Letters	선 적 항 Port of Registry	총 톤 수 Gross Tonnage	IMO 번호 IMO Number
AAA AAAAAA	YSR-000000(DDDD)	YEOSU	29,404	9999999

건조일
Date of Construction : 2015-12-30

선박평형수 용량(㎥)
Ballast Water Capacity(in cubic meters): 22003.60

사용된 선박평형수관리 방법의 상세 설명
Details of Ballast Water Management Method(s) Used

사용된 선박평형수관리 방법
Method of Ballast Water Management used : BWMS

설치일
Date installed (if applicable) : 16 May 2018

제조업체
Name of manufacturer (if applicable) : AAAAAAAA

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

- [ ] 제 D-1 규칙과 일치하여
- [X] 제 D-2 규칙과 일치하여
  in accordance with regulation D-2
  Type of system (장치의 종류) : ECS1600B(1000B + 600B) x 1 Set (Capacity : 1,600.00 ㎥/h)
- [ ] 선박은 제 D-4 규칙에 적용된다.
  the ship is subject to regulation D-4

* 결의안 A.600(15)에 따라 기구에서 채택한 IMO 선박식별번호체계
* IMO Ship Identification Number Scheme adopted by the Organization by resolution A.600(15).

BWM(ROK)-Certificate 1/5 (2015.12)

2. Ballast Water Management Plan (BWMP)

✓ **(Check)** Confirming **approved BWMP is on board.**

✓ **(Deficiencies)**

▷ Unapproved BWMP was on board

(ex) TOC vessel from other class –〉 Missed KR Endorsement

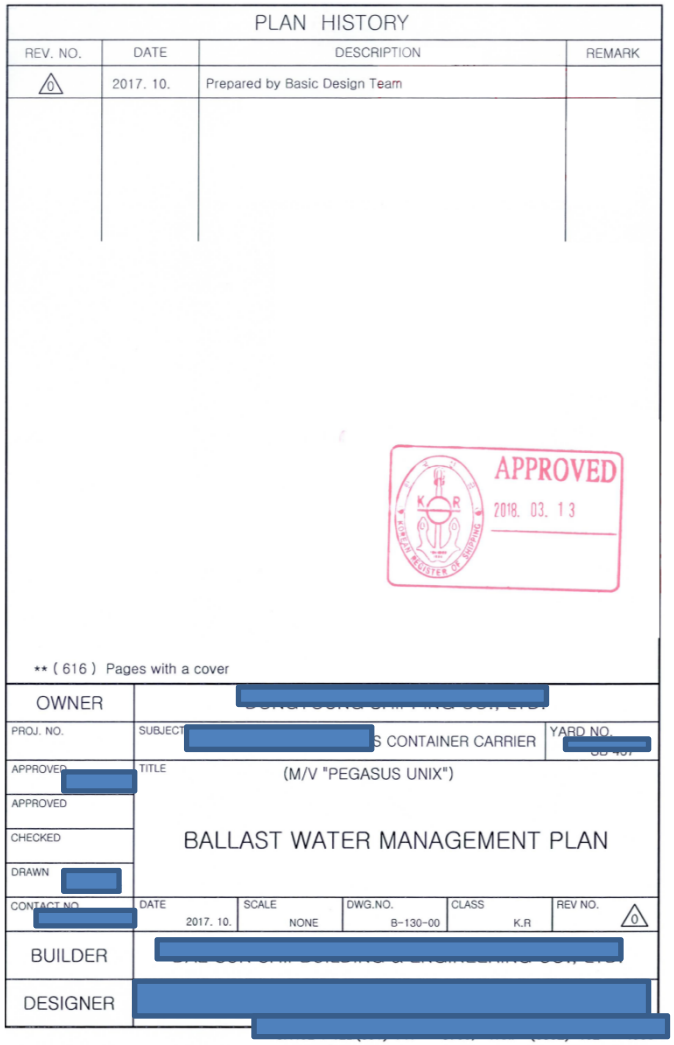
▷ No BWMP on board

▷ No designated officer has been nominated or familiarization

(ex) No familiarization on sediment control

▷ Management system(Reg.D-2) is not included

(ex) Although treatment system had been installed after being approved by using ballast exchange (Reg.D-1), Reg.D-2 contents have not been included in BWMP.



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3. Ballast Water Record Book (BWRB)

✓ **(Check)**

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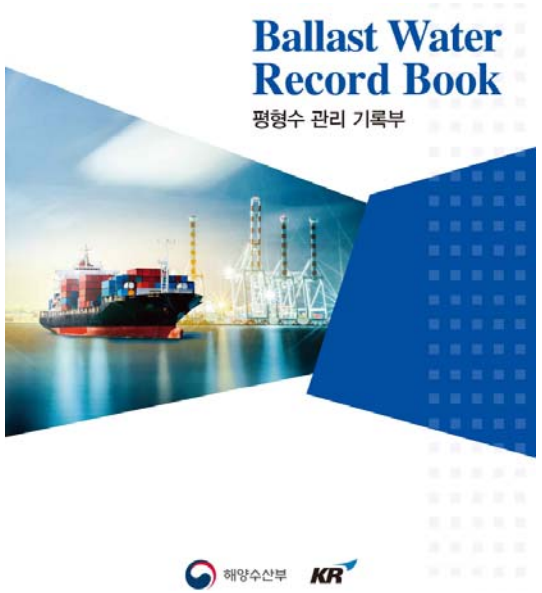
- ▷ Confirming entries for sediment control

✓ **(Deficiencies)**

- ▷ Missed entries in BWRB
- ▷ Entries in BWRB are not matched with BWM Convention.
  (ex) Comparison of ballast water discharge time based on treatment rated capacity and recorded discharge time
- ▷ No signature
- ▷ No familiarization of the officer in charge
- ▷ No entries for the malfunctioned equipments



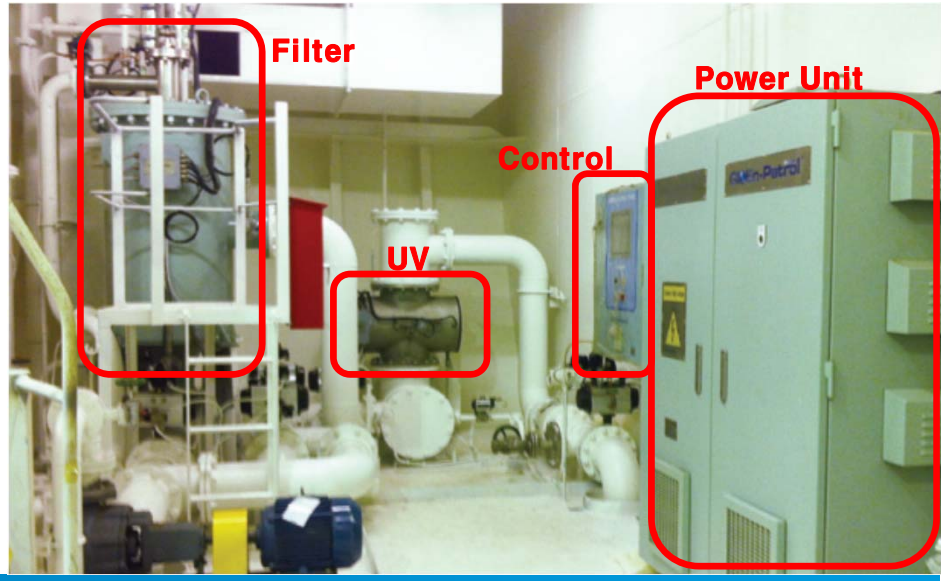
4. Ballast Water Management System (BWMS) _ (1) Compositions

✓ (Equipment's Compositions)

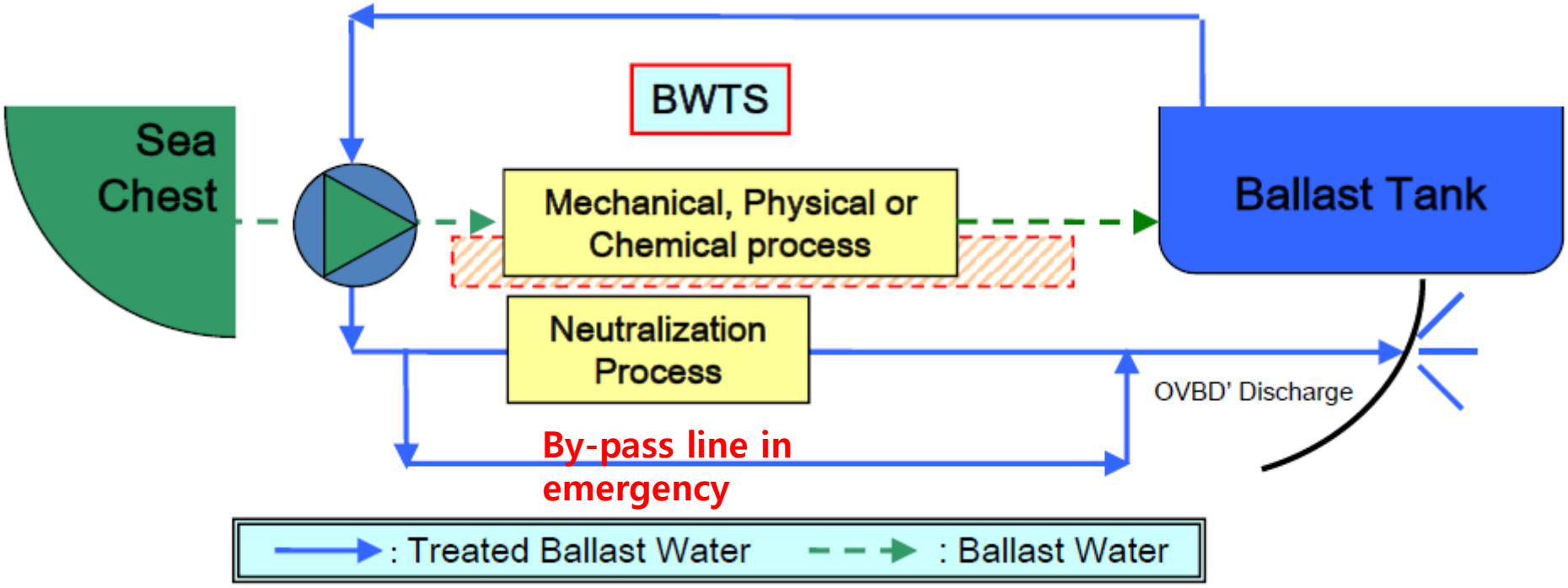
▷ BWMS generally consists of the following equipment.

1) Treatment Equipment
   – divided by treatment method
     ① UV ② Electrolysis ③ Ozone, etc
2) Control & Monitoring equipment
3) Sampling facilities
4) Neutralization equipment *1
5) Filtration equipment *2

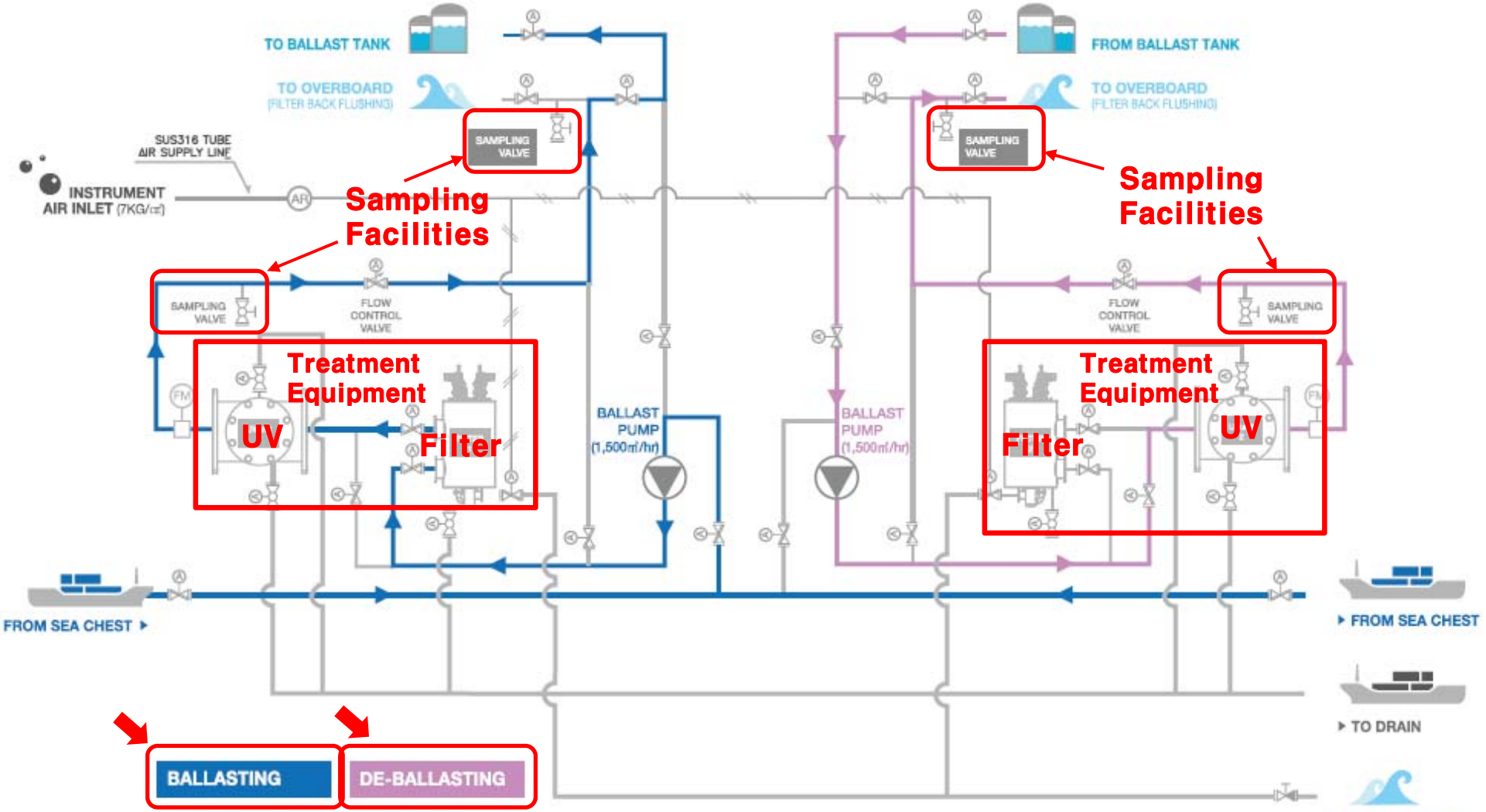
***1 :** Applies to vessels using active substance in treatment
***2 :** Applies to vessels installed



4. Ballast Water Management System (BWMS) _ (2) Treatment Flow



4. Ballast Water Management System (BWMS) _ (3) Example of arrangement



[Sample drawing : Filtration+UV system]

4. Ballast Water Management System (BWMS) _ (4) Check Point

✓ (Check_Documents)

▷ Confirming copy of type approval certificate is on board. (In addition, equipment certificate shall be on board in case of new building ships by KR.)
▷ Confirming maker manual/instruction are on board.

✓ (Check_Equipment)

▷ Confirming for visible and audible alarms in case of any failure (all stations from which ballast water operations are controlled.
▷ Confirming a visual alarm is activated, If applicable, whenever the BWMS is in operation for purposes of cleaning, calibration, or repair, and these events should be recorded.
▷ Confirming any bypass should activate an alarm, and these events should be recorded.
▷ Confirming the calibration certificate should be retained at the renewal survey and intervals according to manufacturer's instruction. (Only the manufacturer or persons authorized by the manufacturer should perform the accuracy checks.)
▷ Confirming the safety equipment where flammable conditions exist or where hazardous areas and chemicals are used. (Ventilation, Gas detector, Fire door, Fire Integrity, MSDS storage/management status of chemical substances, etc)
▷ Confirming whether the control unit's various data(operation/malfunction) are stored.
(check thru. printed one or on the monitor's screen, stored for 24 months)
▷ Confirming control device values for Treatment Rated Capacity(TRC)
▷ Confirming normal operation through control and monitoring equipment

✓ (Check_ISM)

▷ Confirming Familiarization

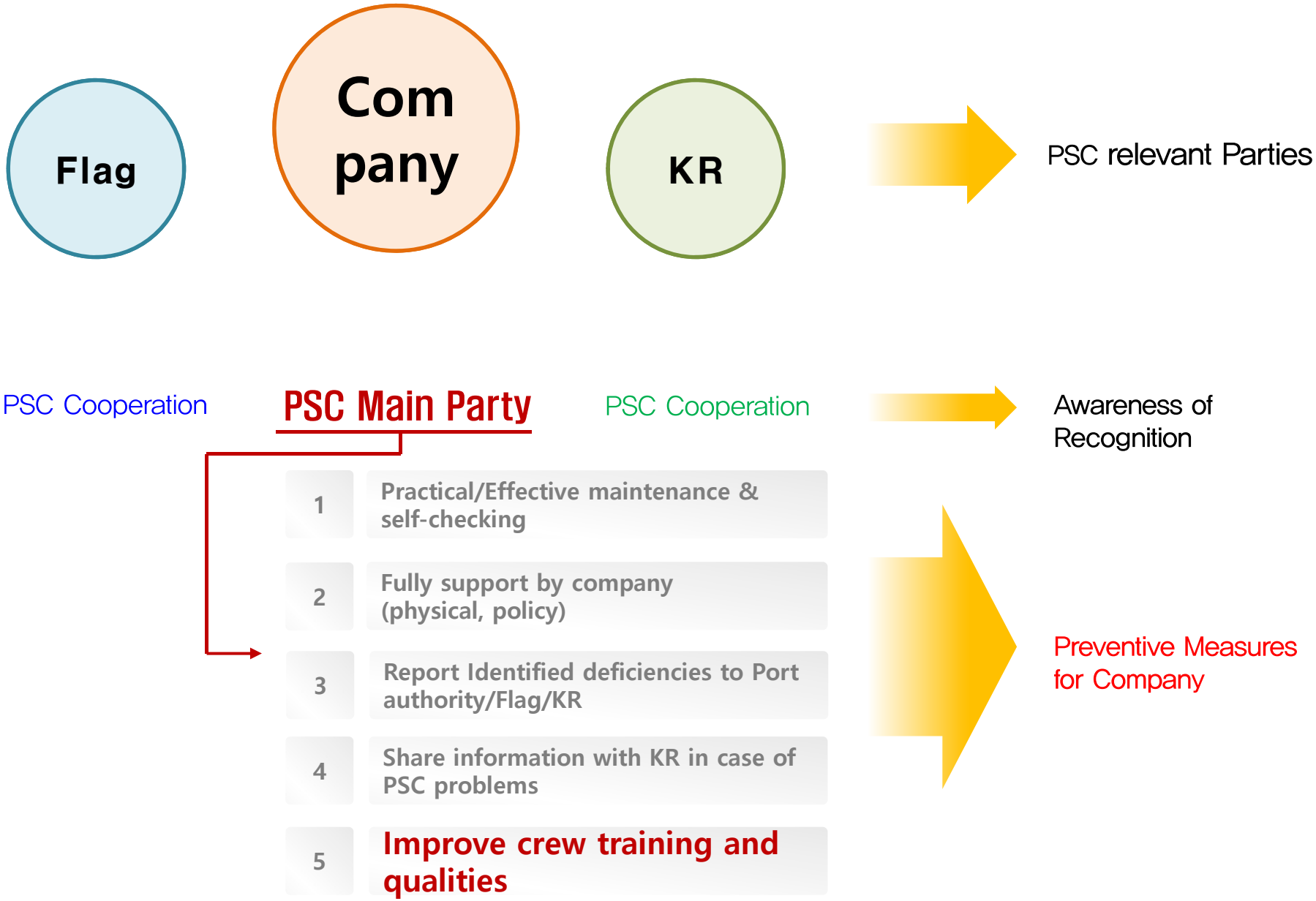
Ⅲ Preventive Measures

Ballast Water Management

- ✓ BWM Certificate
- ✓ BWMP
- ✓ BWM Record book
- ✓ Control of sediments
- ✓ Normal operation of BWMS (where applied, it shall be complied with each port requirement)
  - – Type approval certificate (In addition, equipment certificate shall be on board in case of new building ships by KR.)
  - – BWTS
  - – Control and Monitoring equipment
  - – Pump and piping system, etc
  - – Fire Integrity & control of hazardous material, etc
- ✓ Familiarization with the above

✓Do thoroughly self–checking before entering port

✓Report the identified deficiencies to Port authority, Flag & KR


Flag
Com pany
KR
PSC relevant Parties
PSC Cooperation
PSC Main Party
PSC Cooperation
Awareness of Recognition
1
Practical/Effective maintenance & self-checking
2
Fully support by company (physical, policy)
3
Report Identified deficiencies to Port authority/Flag/KR
4
Share information with KR in case of PSC problems
5
Improve crew training and qualities
Preventive Measures for Company

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