Ballast Water Management

State of Affairs

INTERTANKO and the Standard Club Asia

Singapore, 15 May 2014

Image courtesy of Samco Shiplholding Pte Ltd

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Ballast Water Management

Overview

1. The Regulatory Environment
   1. IMO - State of Affairs
   2. USA – USCG vs EPA

2. Ballast Water Management Systems
   1. Approved Systems
   2. BWMS Costs
   3. Approval Process
Why is Ballast Water Management a major issue for the shipping industry?

1. INTERNATIONALLY – IMO Ballast Water Management Convention was adopted as a “prospective” treaty, i.e. It mandated standards that were not achievable when the treaty was adopted with ambitious implementation dates.

2. NATIONALLY IN THE US – US Congress passed two separate laws giving two separate federal government agencies, the US Coast Guard and the US Environmental Protection Agency (EPA), authority to regulate ballast water management
Desired outcome:

Tanker industry is able to achieve compliance with current and future discharge standards (both regionally and internationally)

Focus:

1. Installation and Operation of appropriate and adequate ballast water management systems
2. Compliance and enforcement – need strong, well defined and realistic international regulations
Ballast Water Management Convention

- Adopted in 2004
- Entry into force requires ratification by 30 countries, 35% world’s grt
- Currently, 38 countries, 30.38% grt
Ballast Water Management Convention

May ‘12  INTERTANKO Council recommends comprehensive document detailing technical, operational and compliance challenges and proposing solution to be sent to IMO

Oct ‘12  MEPC 64 Submission – Marshall Islands, Liberia and industry

1. Guidelines for approval of ballast water management systems (G8)
2. Availability of Ballast Water Management Systems (BWMS)
3. Procedures for port State control
4. Survey and certification requirements
Ballast Water Management Convention

Oct ‘12  Outcome of MEPC 64

1. **Guidelines for approval of ballast water management systems (G8);**
   
   *No revision of Guidelines BUT increased transparency of type approval process and more information provided to ship operators on BWMS capabilities and limitations*

2. **Availability of Ballast Water Management Systems (BWMS);**
   
   *Develop a draft Assembly Resolution to reschedule implementation of the Convention*

3. **Procedures for port State control**
   
   *Sampling and analysis procedures for PSC should be no more stringent than what is required for type approval of BWMS*
   
   *Proposed a trial period for sampling by PSC*

4. **Survey and certification requirements**
   
   *Agreed with INTERTANKO and issued a Circular*
Ballast Water Management Convention
Remaining challenges post-MEPC 65

1. Implementation Schedule
2. Ballast Water Management Systems (Approval)
3. Port State Control
1. **Implementation schedule**

Assembly Resolution A.1088 (28) adopted, Dec 2013 recommends governments:

1. implement the Convention *based on the entry into force date* of the Convention
2. considers **ALL** vessels constructed before entry into force as existing vessels
3. existing vessels to install a BWMS at the first renewal survey (IOPP Certificate under Annex I of MARPOL) after entry into force of the Convention
2. Port State Control

- Trial Period (initially for 3 years) following entry into force
- To trial sampling and testing procedures
- During this period, port states will ‘refrain from detaining a ship or initiating criminals sanctions in the event a BWMS does not meet the discharge standard’.
- Still disagreement on when it is appropriate to sample – what evidence, if any, should be present to initiate PSC sampling (indicative or detailed sample)
3. **BWMS Type Approvals**

- Good progress at MEPC 65 with greater quantity and quality of information with increasing transparency – however - there remains a need to review and revise the IMO’s Type Approval Guidelines (G8)

- INTERTANKO Council, G8 Guidelines, ‘still not adequate in providing tanker operators with reliable, dependable BWMS to install on board their tankers’

- INTERTANKO submission to MEPC 66 with industry partner associations:
  1. Amend G8 (salinity, temperature, organisms, sediment, flow rates)
  2. Grandfathering to protect owners who have taken action
  3. Send a signal to Governments
3. BWMS Type Approvals

OUTCOME OF MEPC 66

- Does **NOT** agree to amend G8 guidelines
- Requests IMO Secretariat to “explore the possibility of conducting” a study on the implementation of the ballast water performance standard (D-2 requirements)
- Agrees to include industry proposals to improve G8 guidelines in the remit of the study

INTERTANKO and other shipping associations intend to continue to pursue this matter at the next MEPC meeting
3. **BWMS Type Approvals**

Road map for MEPC 67 will propose:

1. commence review of the type approval guidelines and assess their possible mandatory enforcement;
2. drafting of an adequate and pragmatic grandfathering clause and;
3. port state control procedures dictating when sampling and testing of ballast water should occur.
1. US Coast Guard

Final regulations issued March 2012 (effective 21 June ‘12)

Main requirements include:

- BWE prior to discharge in US waters
- BWM Plan: reporting and record keeping (fouling management as well)
- BWM discharge standard (same as IMO), review in 4 yrs
- Compliance schedule (similar to IMO), (no intent to align schedule with Assembly Resolution)
- Acceptance of “Alternative” BWMS for 5 years
- BWMS not required if no discharge in US waters
- New ships (12/1/13) may request an extension to compliance date
1. **US Coast Guard** - Implementation Schedule

   - Decision Tree

   ...
US Ballast Water Decision Tree

**NOTES:**
(1) The Decision Tree is based on the assumption that your tanker will discharge BW in US waters, if you do not discharge BW in US waters there is no need to use a BWMS or conduct BWE. NOTE (4).
(2) Please refer to the INTERTANKO Model Extension Request (MER) Letter and USCG Policy on applying for Extensions.
(3) AMS must be US Coast Guard approved within 5 years of the vessel compliance date.
(4) All tankers regardless of ballast water management method must submit a BW Report prior to entry in to US waters.
(5) The EPA VGP does not allow for extensions. If a CG extension is granted, the tanker may still have to install a BWMS to meet the EPA VGP requirements. INTERTANKO is discussing the matter with the EPA to see if they will consider granting extensions to those that are granted CG extensions.

**DEFINITIONS:**
- BWMS IMO: Ballast Water Management System with IMO Type Approval
- BWMS AMS: Ballast Water Management System listed as an Alternate Management System CFR 151:2026
- BWMS CGapproved: Ballast Water Management System with USCG Type Approval
1. **US Coast Guard** - Implementation Schedule

- Decision Tree
- Model Extension Request (MER) Letter
1. **US Coast Guard - Implementation Schedule**

- Decision Tree
- Model Extension Request (MER) Letter
- Clarification of USCG Rules
1. **US Coast Guard - Extension Requests**

- January 1, 2016 extension date given to more than 100 ships whose drydocking was scheduled for 2014
- USCG holding off on granting extension letters to ships whose drydocking is scheduled for 2015 or later
- January 1, 2016 date was chosen to encourage shipowners to put pressure on BWM manufacturer to obtain USCG approval
- USCG recognizes that January 1, 2016 date may generate second round of extension requests
- CG wants to have dialogue with shipowners as to whether installation of BWMS must be done in drydocking. (BWM manufacturers indicate drydocking may not be necessary)
1. **US Coast Guard – BWMS Approvals**

- A few BWM manufacturers are “aggressively” pursuing USCG approval (no indication which BWMS)
- USCG expects a USCG approved BWMS by this time (May) in 2015
- USCG hopes it can announce a few at the same time, but is not going to hold up the announcement of the first one to wait for a “long time” to include the second or third one
- USCG indicates they understand potential installation scheduling problem once a BWMS is USCG approved
- USCG indicates they will be “pragmatic” in requiring when a ship calling at US ports must have a USCG approved BWMS installed
2. **EPA – CWA NPDES VGP 2013 (1)**

- To a large extent EPA VGP requirements are the same as USCG:
  - discharge standard
  - compliance schedule
- Approval of the BWMS is not required
- BWMS monitoring required:
  - Functional (equipment)
  - Biological (effluent)
  - Biocides
- Notice of Intent and Annual Reports
2. **EPA - VGP 2013 (2)**

- New ship (keel laid after December 1, 2013) is required to install a BWMS to comply with the VGP, i.e. no acceptance of USCG extension provision in the VGP
- **EPA /USCG MoU – EPA Enforcement Policy** announced 27 Dec
- Vessel with USCG extension is **non-compliant** (if discharges in US waters – 3 miles), but EPA regards as a low-enforcement priority, provided all other applicable regulations are met
- Liaison between EPA and USCG about dates extension request letter and VGP NoI – dry dock dates should be the same!
2. Ballast Water Technology

1. Approved Systems

- IMO
  - Type Approved (G8) 42/47 *
  - ...of which are explosion proof 5
- US
  - Coast Guard approved 0
  - Alternate Management Systems (AMS) 36 **

* Last updated by IMO, April 2014 (MEPC 66)
** Last updated by USCG, May 2014
# Ballast Water Management - State of Affairs

## 2. Ballast Water Technology

### 1. Approved Systems

<table>
<thead>
<tr>
<th>Category</th>
<th>All Type Approved BWMS</th>
<th>USCG AMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of BWMS</td>
<td>48</td>
<td>36</td>
</tr>
<tr>
<td>No. of BWMS requiring treatment during intake and de-ballasting</td>
<td>45</td>
<td>33</td>
</tr>
<tr>
<td>No. of BWMS using active substances</td>
<td>27</td>
<td>19</td>
</tr>
<tr>
<td>No. of BWMS requiring storage of chemicals</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>No. of BWMS requiring storage of waste products</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Maximum Capacity (m³/hr)*</td>
<td>16,200</td>
<td>16,200</td>
</tr>
</tbody>
</table>

*Information courtesy of ABS*
## 2. Ballast Water Technology

### 2. BWMS Costs

<table>
<thead>
<tr>
<th>Total Ballast Pumping Capacity</th>
<th>Capital cost of BWTS</th>
<th>Installation cost</th>
<th>Selection &amp; Survey &amp; Detailed Engineering &amp; Training &amp; Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 500 cu.m/hr</td>
<td>$150k-$200k</td>
<td>~$100k</td>
<td>~$70K</td>
</tr>
<tr>
<td>500-1000 cu.m/hr</td>
<td>$300k-$550k</td>
<td>~$250k</td>
<td>~$85K</td>
</tr>
<tr>
<td>2000 cu.m/hr</td>
<td>$650k-$850k</td>
<td>~$500k</td>
<td>~$125K</td>
</tr>
<tr>
<td>3000 cu.m/hr</td>
<td>$900k-$1M</td>
<td>~$500k</td>
<td>~$125K</td>
</tr>
<tr>
<td>4000 cu.m/hr</td>
<td>$1M-$1.4M</td>
<td>~$500k</td>
<td>~$125K</td>
</tr>
<tr>
<td>5000 cu.m/hr</td>
<td>$1.2M-$1.6M</td>
<td>~$500k</td>
<td>~$125K</td>
</tr>
</tbody>
</table>

Information courtesy of V.Group
3. Approval Process

- IMO
  - Update requirements for manufacturers submitting information to Administrations (BWM.2/Circ.43)
  - Updated information to be included in Type Approval Certification, e.g. BWMS limitations (Resolution MEPC.228(65))
  - No Review of G8 planned, but...
    - University of Maryland – tests IMO G8 approved BWMS against US approval standards – 3 systems fail
    - INTERTANKO et al. submission to MEPC 67
- US
  - 2 independent laboratories authorised (US and Norway)
  - Testing is fully independent and on market ready BWMS
Concluding remarks

1. Propose way forward on implementation of the Ballast Water Management Convention and review of BWM Guidelines based upon experience gained

2. Sharing of experience and information between owners essential
   1. Does the BWMS work?
   2. Does it work as it was approved to work?
   3. Does it meet the discharge standards?
   4. INTERTANKO members will share information on BWMS installed
thank you
### Implementation Schedule for Approved Ballast Water Management Methods

<table>
<thead>
<tr>
<th>Vessel’s ballast water capacity (in cubic meters)</th>
<th>Date constructed</th>
<th>Vessel’s compliance date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New vessels</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>On or after Dec. 1, 2013</td>
<td>On Delivery</td>
</tr>
<tr>
<td><strong>Existing vessel</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1,500</td>
<td>Before Dec. 1, 2013</td>
<td>First scheduled drydocking* after Jan. 1, 2016</td>
</tr>
<tr>
<td>1,500-5,000</td>
<td>Before Dec. 1, 2013</td>
<td>First scheduled drydocking* after Jan. 1, 2014</td>
</tr>
<tr>
<td>Greater than 5,000</td>
<td>Before Dec. 1, 2013</td>
<td>First scheduled drydocking* after Jan. 1, 2016</td>
</tr>
</tbody>
</table>

*Drydocking means hauling out of a vessel or placing a vessel in a drydock or slipway for an examination of all accessible parts of the vessel's underwater body and all through-hull fittings.*