

Ballast Water Management
Systems:
Shipowner Experience

Overview

- Shipowner Ballast Water Management Meeting
- Treatment Technologies Used
- Shipowner Reasons for Not Using BWMS
- Technical Problems Encountered
- Impacts on BWMS Commissioning
- Important Points

Shipowner Ballast Water Management Meeting

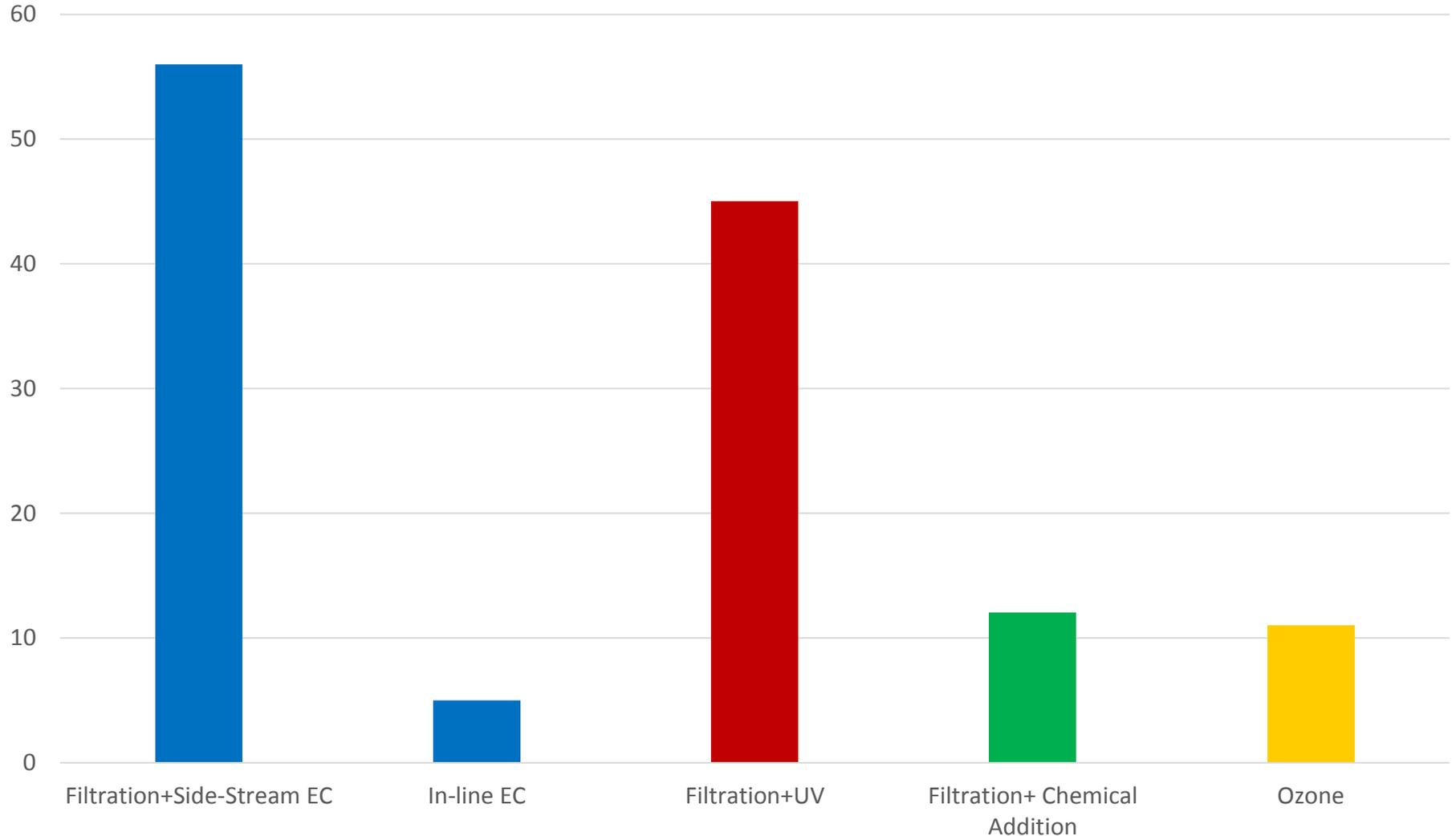
- 27 January 2016 – 15 shipping companies held a meeting to discuss ballast water management system (BWMS) experience
- Meeting Ground Rules:
 - Vendor names would not be discussed
 - Contract terms would not be discussed
 - All participants have were attempting to use installed BWMS.
- Agenda
 - Technical Specifications
 - Design, Installation, and Commissioning
 - Operation, In-Service Support, and Maintenance Challenges
- IACS member facilitated the meeting

Shipowner Information

- All participants' ships are classed by IACS members
- 50% completed IMO D-2 Study
- Owners have over 150 BWMS installed on vessels
 - 67% of installations on newbuilds
 - 33% of installations on existing vessels
- 67% of installations being attempted to use

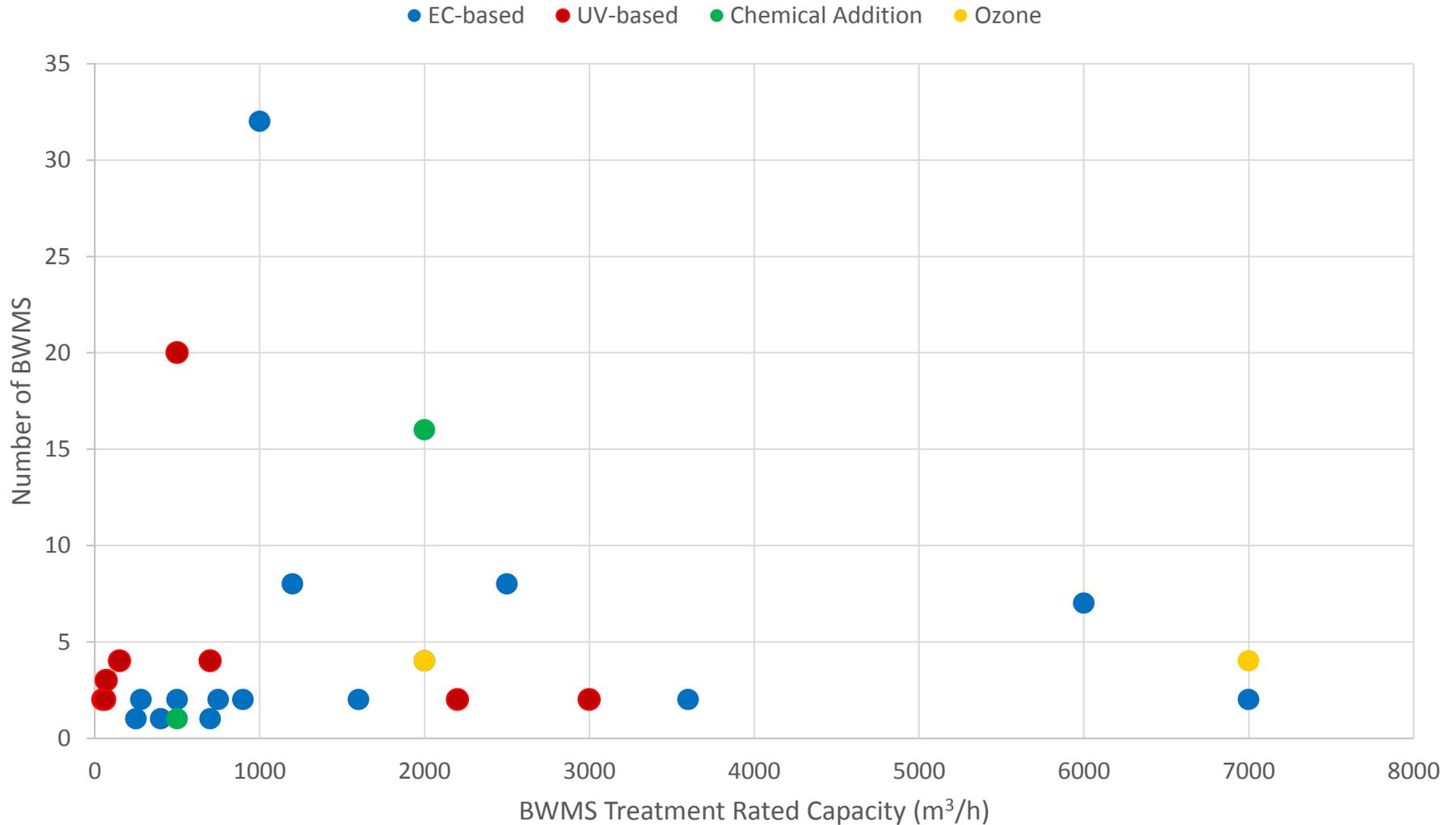
Note: All data is from information shared during the meeting, shipowner responses to questionnaire submitted and follow up on questionnaire responses.

Treatment Technologies Used



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BWMS Treatment Rated Capacities



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Shipowner Reasons for Not Using BWMS

- Ballast water not required to be treated by regulation
- Inoperable BWMS
- Equipment/Installation not in compliance with type approval certificate or USCG Alternate Management System (AMS) acceptance letter
- Not permitted to operate due to area of operation

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Technical Problems Encountered

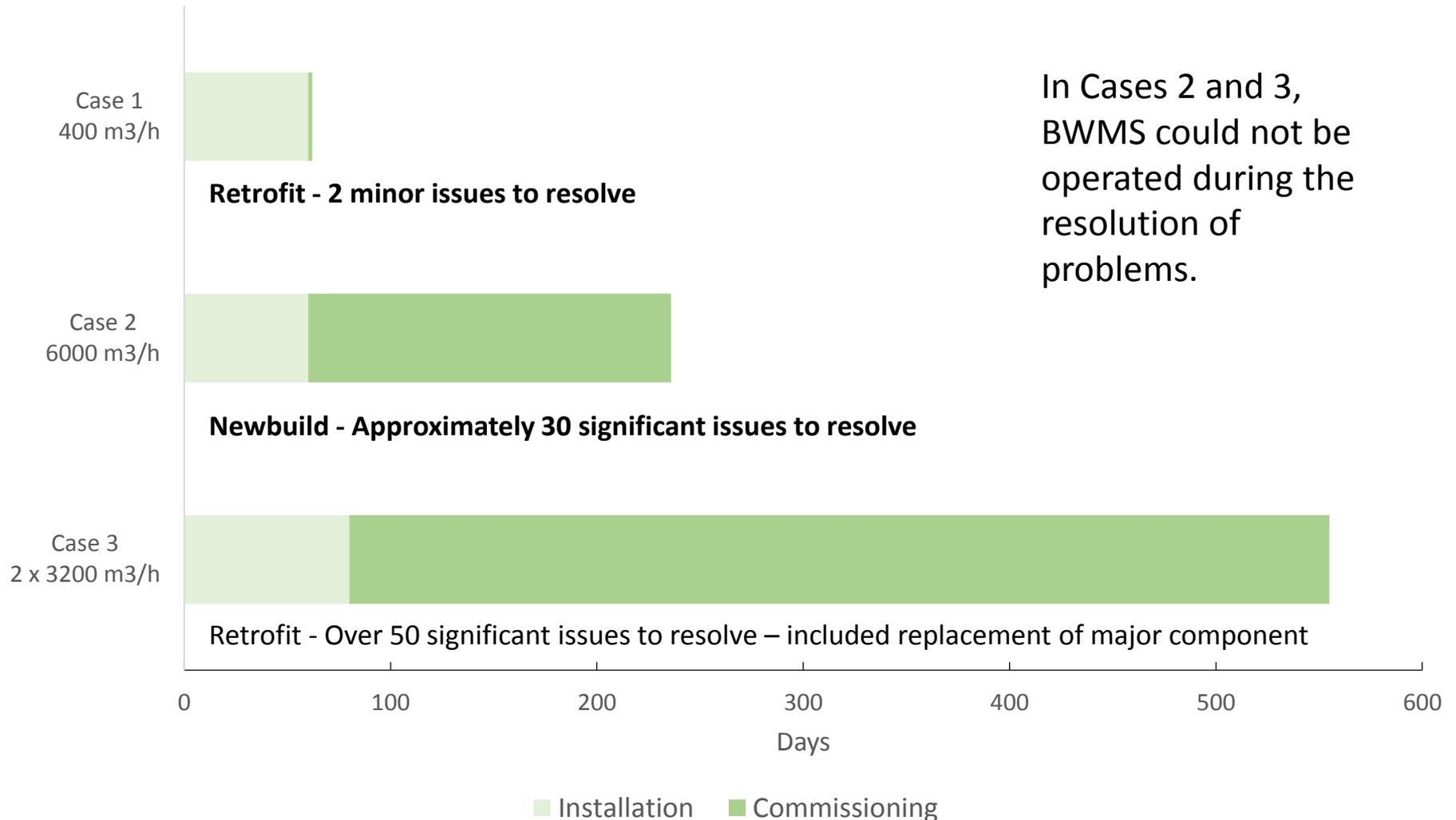
- Filter problems
- Sensor failures
- Software problems
- Major component failures
- Other items:
 - Fires
 - Leakage

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Impacts on BWMS Commissioning

- Due to the limited time available in a drydock and the need to return a ship to service, many issues identified cannot be resolved
- For the 150 BWMS installed by participants, only one BWMS was fully operational at the completion of the planned installation period.
- If commissioned, vessels left the shipyard with “quick fixes” to problems that resulted in:
 - Questionable changes to components that may impact validity of type approval certificate
 - Software modifications
 - Component (not listed in type approval certificate) changed
 - Temporary use of lower quality components (e.g., non-coated piping)
 - Impacts on future charters due to need for additional drydocking to make repairs/upgrades

Examples of BWMS Installation and Commissioning Schedules



Note: All data is from information shared during the meeting, shipowner responses to questionnaire submitted and follow up on questionnaire responses.

Benefits of Information

- Complements Track 2 IMO D-2 Study (MEPC 69/4/4) (i.e., operator information) information
 - Approximately 50% of participants completed D-2 Study
 - Consistent types of treatment technologies used (i.e., electrochlorination most prevalent)
 - Comparable component issues identified
 - Similar failure rate stoppages (i.e., unpredictable, no patterns)
- Provides more information on:
 - Higher flow rates (i.e., TRC) BWMS models
 - Problems and impacts to ship operation
 - Technical issues and time for resolution of problems

Important Points

- Delivery of operable BWMS requires more time than anticipated
- Concerns over components' reliability
- Lower TRC models may have less problems and may be commissioned with less time
- Need to ensure sufficient time is allotted for installation of a safe and operable BWMS
- Contingencies need to be considered to allow a vessel to be operated if installation and commissioning cannot occur within a planned drydocking or installation period