

International Maritime Organization Ballast Water Management Convention



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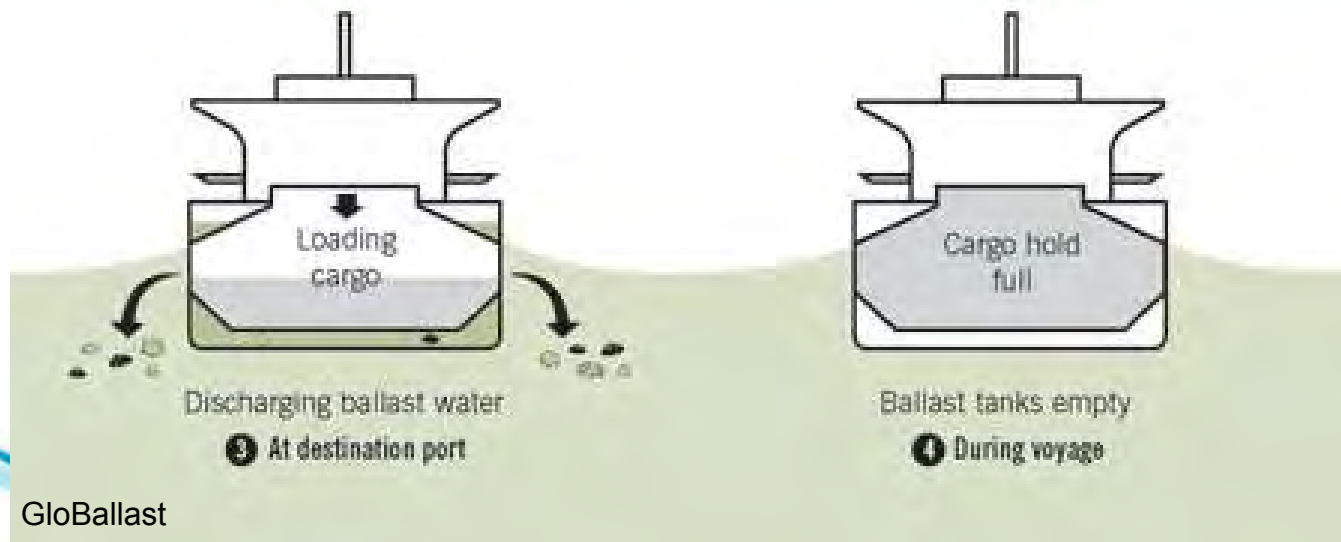
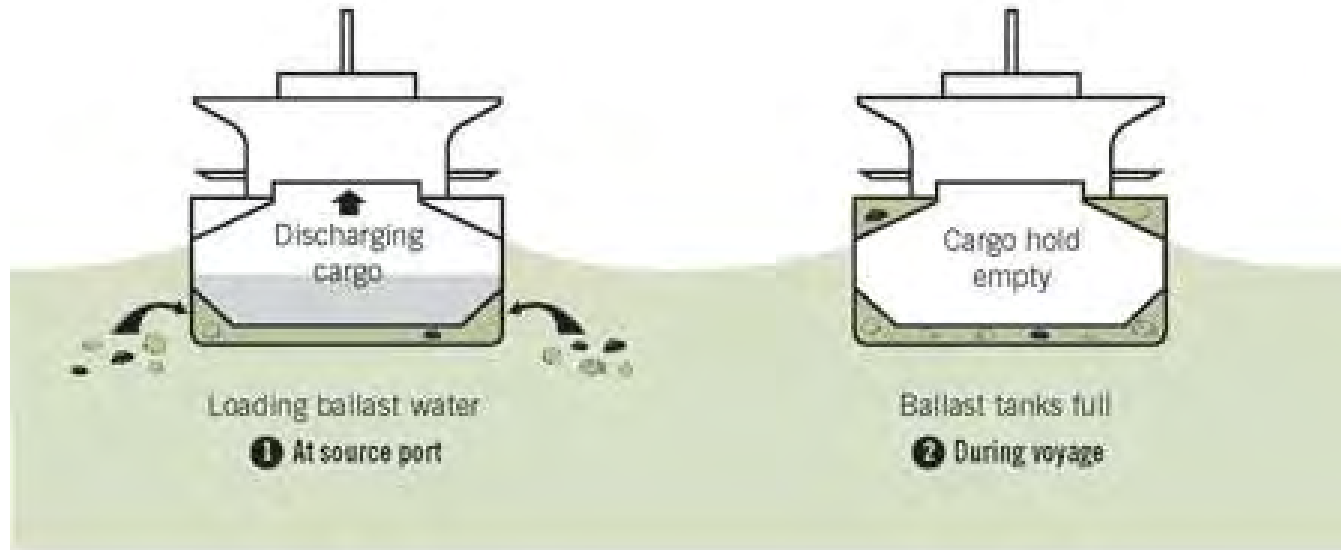
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Marine Scotland – Science



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The Problem



The Solution



- International Ballast Water Convention
 - Took a long time to adopt
 - Not yet ratified
 - Contains a standard for BW discharges

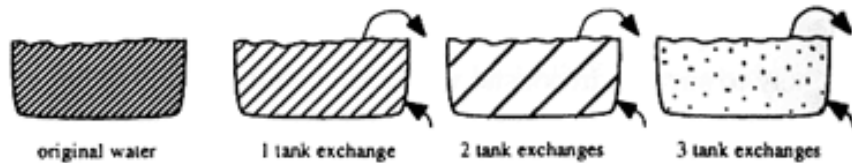


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The Tools: IMO Ballast Water Standards



Option 1. emptying + refilling (Reballasting)



Option 2. Continuous flushing (Ballast exchange)

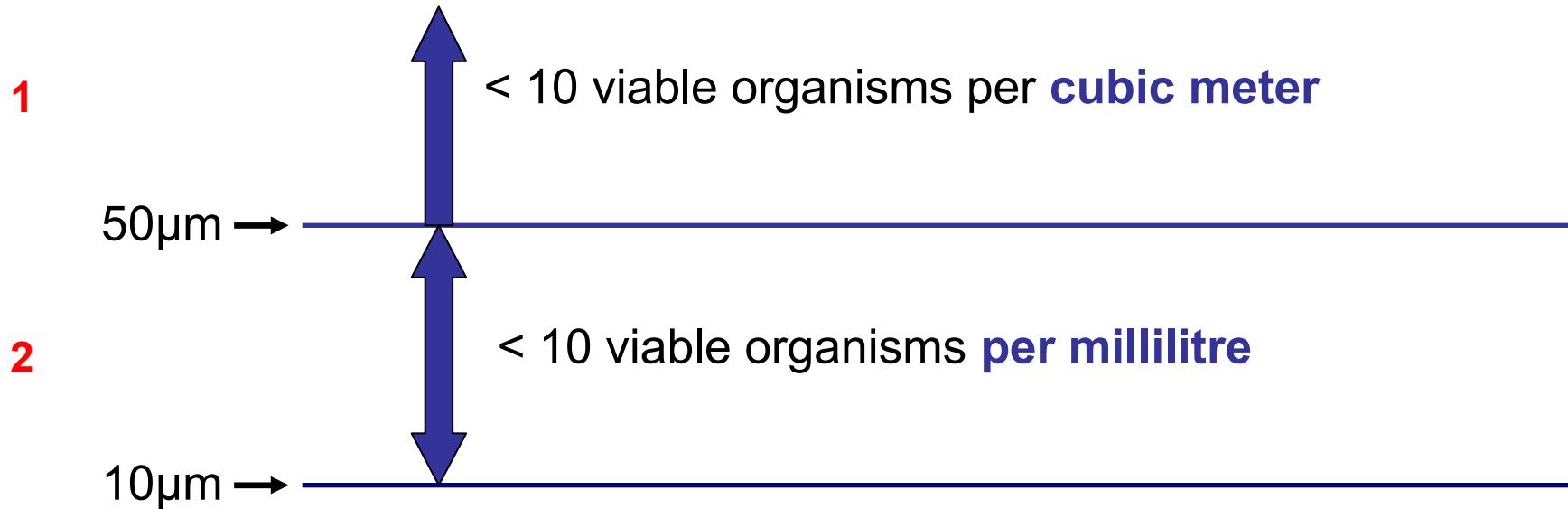
Rigby 1994

- Ballast water exchange standard until 2016 (Regulation D1)
- Ballast water performance standard (Regulation D2) for discharge.



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What needs to be achieved?



3 *Vibrio cholerae*: < 1 colony forming unit (cfu) per 100 ml or < 1cfu per 1g (wet weight) zooplankton samples

Escherichia coli < 250 cfu per 100 ml

Intestinal Enterococci < 100 cfu per 100 ml



How to achieve the standard?

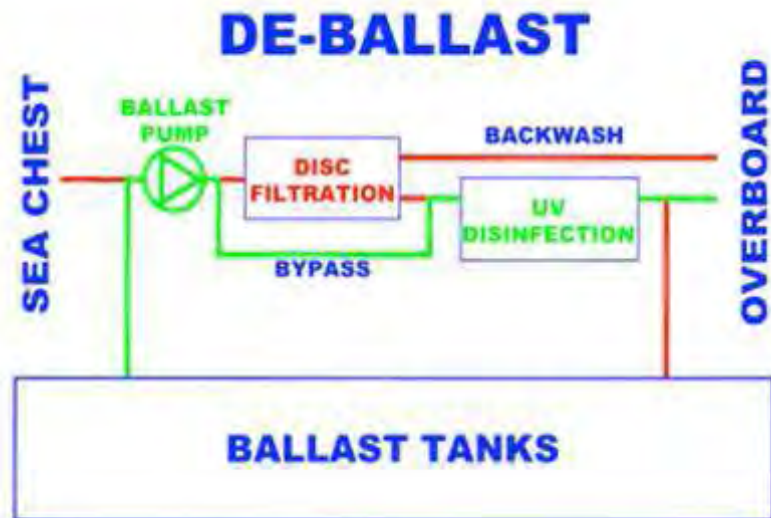
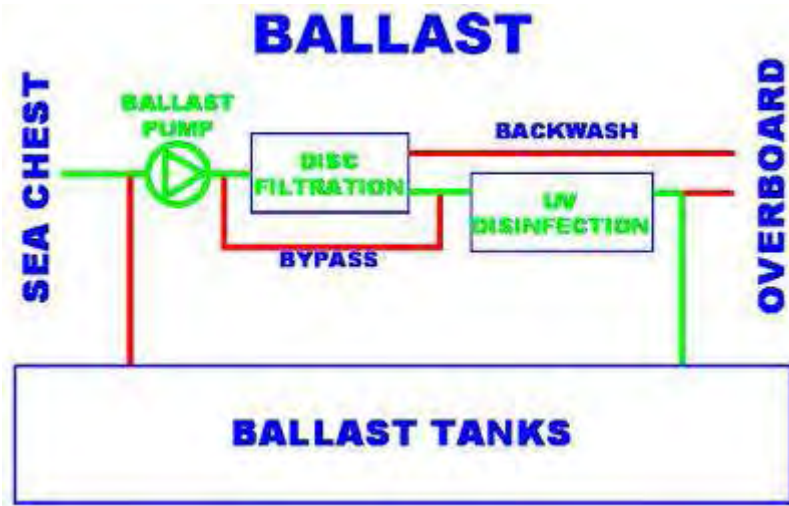


- Use of ballast water management systems
 - Treat or manage the ballast water
- Type Approval procedure
 - Shore and ship based tests
 - Operational & environmental risks appraised
 - Ensures “active substances” are assessed



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Is there any risk to the marine environment?



- Key part of type approval process
- Identification of any preparations, active substances and relevant chemicals
- Effects on aquatic plants, invertebrates and fish, impact of residual chemicals
- Risk assessment – environment & safety, human health and ship integrity....hazards? e.g., corrosion, chemicals, noise

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How do the systems work?



- Separation:
 - Primary e.g., hydrocyclone, coagulation
 - Secondary e.g. filter
- Disinfection:
 - Chemical e.g., chlorine
 - UV
 - De-oxygenation
 - Physical



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How will the vessels be checked?



SERC

- Initially the primary approach will be paper check e.g., ballast water records, certificate
- Sampling of ballast water
 - Sampling guidelines
 - Point discharge standard or something else?
 - Reference in guidelines made to “samples that are representative of whole discharge”
 - Collection and analysis protocol of sample



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In Summary

- The idea is simple: treat ballast water
- The reality is complicated:
 - International co-operation required
 - Difficult to choose a robust and realistic standard
 - Treatment systems require rigorous and time consuming testing
 - Enforcement may be problematic



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Global/Regional Activities

- EU Interreg – North Sea Ballast Water Opportunity
 - <http://projects.nioz.nl/northseaballast/>
- GEF-UNDP-IMO Globallast Partnerships
- Global Industry Alliance
 - <http://globallast.imo.org>



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