

## HARMFUL AQUATIC ORGANISMS IN BALLAST WATER

### Consideration of amending the Guidelines for approval of ballast water management systems (G8)

#### Submitted by the International Chamber of Shipping (ICS)

#### SUMMARY

*Executive Summary:* This paper discusses the rationale for amendment of the Guidelines for Approval of Ballast Water Management Systems (G8) to provide a more robust and fit for purpose testing of such systems and the possible consequence such action could have on the consideration of the development of outstanding sampling and analysis procedures .

*Strategic direction:* 2

*High-level action:* 2.0.1

*Planned output:* 2.0.1.8

*Action to be taken:* Paragraph 9

*Related documents:* MEPC 63/23 and BLG16/16

1 MEPC 63 invited submissions to MEPC 64 on the appropriateness of changing Guidelines (G8), including general aspects that might be improved through revision together with comments on the necessity for any change. This paper is submitted in response to that invitation.

#### Introduction

2 During the MEPC 63 discussion of agenda item 2 (Harmful aquatic organisms in ballast water), ICS reiterated its great concern for the lack of robustness of the testing requirements in Guidelines (G8). This related to the ability to discount non-compliant test results, the fact that compliance is based on average organism count, the ability to use inappropriate surrogate organisms for testing, the quality control in some test facilities, and the lack of testing in all relevant water quality conditions. The welcomed withdrawal from the market of a Type Approved ballast water management system (BWMS) during MEPC 63 following the discovery during extended testing by the vendors that the system did not perform consistently under conditions normally encountered, substantiates the genuine concerns of shipowners.

3 The Guidelines for approval of ballast water management systems (G8) were agreed prior to any practical knowledge of how a BWMS would operate, or what would be the practicalities for operation of a biologically efficient ballast water management system. As Type Approved BWMSs have become available,

awareness of the challenges in providing consistent and reliable ballast water treatment has increased. There has been increasing concern from shipowners that the BWMS approved under the Guidelines (G8) may not be challenged sufficiently during the Type Approval process to provide the required confidence that the equipment will work to the required standard under the various uptake ballast water conditions normally encountered in trade. ICS considers that the experience with BWMS that has been gained to date should be used to reinforce the Type Approval requirements and so reinstate confidence that the Type Approval Process results in a BWMS that is 'fit for purpose'.

4 The recent adoption of US federal legislation requiring an enhanced (as compared with Guidelines (G8)) test procedure for BWMSs that are authorized to operate in United States waters is relevant. ICS believes that an enhanced test procedure, generally incorporating much of the additional requirements of the Protocol for the verification of ballast water treatment technologies developed by the United States Environmental Protection Agency (EPA) Environmental Technology Verification (ETV) Program into the existing Guidelines (G8), would serve to provide both an appropriate test regime and to facilitate a harmonized international standard for such testing. ICS also finds it important that the status of Guidelines (G8) is upgraded from the present voluntary status to that of a mandatory requirement to provide the desired consistency of application during testing after the entry into force of the BWM Convention.

#### **Suggestions for Guidelines (G8) amendment**

5 The additional considerations that ICS believes are necessary to be brought within the purview of BWMS Type Approval (TA) testing are summarized below, together with the rationale for such inclusion. It is recommended that the provisions of the Protocol for the verification of ballast water treatment technologies are also reviewed and considered where appropriate to provide additional relevant detail during further discussion.

1. Testing should be performed using fresh, brackish and marine waters – the present requirement is for testing to be performed with two test waters with a salinity differential of at least 10 PSU. In effect this means that testing in fresh water can be avoided. It is now generally recognised that certain fresh water organisms (specifically copepods) can be more resistant to some treatment processes now commonly applied in BWMS than marine water organisms and therefore the full range of salinities, which are commonly encountered during normal ship trading, should be represented to provide assurance that the system will continue to work correctly in waters of all salinities.
2. Testing should also consider the effect of temperature in cold and tropical water on operational effectiveness and environmental acceptability. One BWMS has been withdrawn from the market due to residual toxicity in cold water, which was not detected during the TA testing conducted with temperate water. The possibility of residual toxicity following a chemical treatment in cold waters cannot be discounted and therefore should be checked. The efficacy of operation in both cold and tropical waters should also be verified.
3. Standard test organisms that challenge the treatment process should be specified for use in testing. It is a serious concern that

some test facilities may select organisms with either a high natural mortality or low resistance to disturbance for convenience due to the test site location; it is essential that the treatment efficacy is sufficiently challenged to provide a real life operating scenario.

4. Suspended solids in test water should provide a more realistic challenge than at present, levels of clay silt and the content of total suspended solids (TSS) in the test water should be increased. It has been found in practice that some filtration systems forming an integral part of the BWMS cannot cope with conditions prevalent in a number of areas, particularly where heavily contaminated river estuaries are the port location; as many BWMS inherently rely on the efficiency of the filtration for efficacy of treatment, the filtration phase needs to be realistically challenged under conditions reflecting the worst case real life scenarios that may be encountered.
5. The TA testing should not allow discounting test runs in the full scale testing that do not meet the D-2 standard, nor should the results of test runs be 'averaged'; if a system under test fails the treatment efficacy requirements at any time, then it should not be granted TA. This is a root cause of concern as the present allowances provide an opportunity for systems that cannot reliably maintain the D-2 efficacy requirements to gain TA. This should also apply to test runs that fail the efficacy criteria that are discounted due to not meeting the control water validity criteria.
6. TA testing should realistically represent the flow rates the system is approved for. In addition the continued effectiveness during low ballast water flow rates should be verified as a BWMS will be required to operate effectively at both full flow and reduced flow such as when topping up ballast tanks and fine adjusting the ballast condition en-route.

6 A more consistent application of the TA guidelines could possibly be achieved prior to entry into force of the Convention by requiring the TA testing Quality Assurance procedures to confirm whether or not the Guidelines' (G8) recommendations had been strictly followed and adhered to. Should the testing QA documentation not confirm compliance with the Guidelines (G8) in all aspects of testing, then TA should not be granted.

#### **Port State control sampling and analysis for compliance**

7 During MEPC 57 the Committee agreed that sampling and analysis for compliance testing of a BWMS in use on board should be aligned with the TA testing. Should the above suggestions for improving the (G8) testing be implemented, confidence that the TA process can reasonably ensure a BWMS so tested can consistently maintain performance will be gained. Consequently, the compliance sampling and the analysis procedures developed during BLG 16, with some small adjustment, could reasonably be applied to ships that have a BWMS TA tested in accordance with 'enhanced Guidelines (G8)' procedures.

8 The initial concern that a ship that has proactively purchased, and installed in all good faith, a BWMS that has received TA under the present Guidelines (G8) may be found non-compliant if a more rigorous sampling and analysis procedure for

compliance testing than was used for TA still remains to be addressed. This concern was highlighted by the Bahamas, and supported by other Member States at the close of the MEPC 63 ballast water debate. A potential solution to the current impasse could be to recognize that routine *ad-hoc* sampling for compliance for a BWMS TA under the existing Guideline (G8) regime should be discouraged unless clear grounds exist that the system has not been operated correctly. The evaluation of any subsequent 'volume of interest' sampling analysis for these systems should include a realistic allowance for possible variations of organism spread in the ballast water, for example [100x] [50x] [25x] the required Convention regulation D-2 standard to that agreed in the sampling and analysis procedures finally adopted. Such application could alleviate some of the concerns that have been expressed and also, possibly, encourage a greater take up of existing Type Approved BWMS in the interim to the implementation and use of an 'enhanced Guidelines (G8)' procedure. Alternatively, a simple 'grandfathering clause', which would allow ballast water management systems currently installed on board ships to be tested for compliance in accordance with the existing Guidelines (G8) should be agreed upon and included in the 'enhanced Guidelines (G8).

#### **Action requested of the Committee**

9 The Committee is invited to consider the above suggested course of action and decide as appropriate.