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REDUCTION OF UNDERWATER RADIATED NOISE FROM COMMERCIAL SHIPPING

The Tripartite Working Group on Underwater Radiated Noise

Submitted by ICS, BIMCO, IACS, CESA, INTERTANKO and ASEF

SUMMARY

Executive summary:	This document introduces the Tripartite Working Group (the Group) on Underwater Radiated Noise. The document summarizes the objectives and work activities of the Group. It identifies ways that the Group can facilitate reduction of underwater radiated noise and support the objectives of IMO during the experience-building phase of the *Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life* (MEPC.1/Circ.906).
Strategic direction, if applicable:	1
Output:	1.16
Action to be taken:	8
Related document:	MEPC.1/Circ.906

Introduction

1 Tripartite is a collaborative group of associations representing ship builders, classification societies and shipowners. Originally founded to support the establishment of the Common Structural Rules for Bulk Carriers and Tankers, in recent years Tripartite's work has been extended to include other important industry issues.

2 The Tripartite group meets annually to assign objectives for the year ahead and working groups run intersessionally.

3 At Tripartite's 2023 meeting, the strong synergy between energy efficiency and underwater radiated noise (URN) reduction was discussed, and the opportunity for industry to readily achieve URN reduction as a co-benefit of GHG regulatory compliance was noted. The Tripartite Working Group on URN reduction was duly established.

Members of the Tripartite URN Working Group

4 Members of the Group include representatives of:

.1 IACS Classification Societies;

.2 Shipbuilding Associations:

.1 Active Shipbuilding Experts Federation (ASEF);

.2 CESA;

.3 Industry trade associations:

.1 BIMCO;

.2 ICS;

.3 INTERTANKO; and

.4 Observer organizations: Transport Canada.

Objectives of the Group

5 The objectives of the Group are:

.1 to raise awareness of all stakeholders with regards to the *Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life* (MEPC.1/Circ.906) (IMO URN Guidelines), and the various quiet ship class notations;

.2 to track and log the number of ships that have adopted the IMO URN Guidelines and/or the quiet ship notations;

.3 where ship owners or shipbuilders measure the noise of new build or modified ships, collate the measurements together with details of the energy efficiency measures adopted by the ships. In that way, the Group can demonstrate to IMO how much co-benefit is being achieved in terms of noise reduction;

.4 to liaise with other stakeholders regarding incentive schemes (e.g. Green award, IAPH Environmental Ship Index, and the Noise Ship Index (NSI));

.5 to develop a common repository database for the information collated by the Group;

.6 alleviate any concerns ship owners may have with respect to URN reduction (e.g. with respect to adoption of the IMO URN Guidelines, or the quiet ship class notations);

.7 make submissions to MEPC providing periodic updates of the Group's activities, and summaries of data collected; and

.8 make formal annual reports/presentation to Tripartite on the work completed to date.

Work in progress

6 The inaugural meeting of the Group was held on 7 February 2024, with further meetings planned throughout 2024. The initial work plan for the members is summarized as follows:

.1 identify the actions that are currently being taken to raise industry awareness and encourage uptake of the IMO URN Guidelines and the quiet ship class notations;

.2 track and log the number of ships that have adopted the IMO URN Guidelines and/or the quiet ship notations;

.3 collate noise measurements and demonstrate how much co-benefit we are getting from energy efficiency;

.4 collate information on the location and typical cost of:

.1 URN noise measurement facilities;

.2 model test URN prediction facilities;

.3 URN numerical prediction services; and

.5 develop one or more case studies comparing the costs of adopting quiet ship notations/IMO URN Guidelines with the benefits provided by the various environmental award schemes.

Actions already taken

7 The Group has already completed the following actions:

.1 several webinars have been held to raise awareness of the importance of URN reduction, and to introduce the IMO URN Guidelines, and the quiet ship notations. Recognition of the importance of URN reduction is increasing and an example of a URN Policy adopted by a national ship owner association is included as annex 1 to this document;

.2 industry surveys to establish the uptake of the IMO URN Guidelines and quiet ship notations have been kicked-off. The initial responses highlight significant opportunity for increasing the uptake. A typical survey front page is included as annex 2 to this document;

.3 a best practice industry guide on URN reduction has been compiled. The final review of the draft text is underway, and publication is planned for the third quarter of 2024. A copy of the draft table of contents for the guide is included as annex 3 to this document; and

.4 discussions have been held with the Secretariat of the Green award, IAPH Environmental Ship Index and Noise Ship Index (NSI). This has helped to clarify which URN incentives are already in place, and which are being planned.

Action requested of the Committee

8 The Committee is invited to note the establishment of this Tripartite Working Group. The Group would welcome any suggestions from the Committee with respect to how it can more effectively facilitate URN reduction and support the objectives of IMO during the experience-building phase of the *Revised guidelines for the reduction of underwater radiated noise from shipping to address adverse impacts on marine life* (MEPC.1/Circ.906).

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ANNEX 1

EXAMPLE OF A URN POLICY ADOPTED BY A NATIONAL SHIP OWNER ASSOCIATION

Policy paper
March 2024

OUR VIEW

We welcome the IMO guideline on reduction of underwater radiated noise since it must be considered of utmost importance to reduce noise from ships.

We support the use of the IMO guideline on underwater radiated noise, and we encourage our members to establish a noise-baseline for the vessel by applying an Underwater Noise Management Plan which is a key element in the guideline. This plan will support the shipowner in deciding on what steps can be taken to reduce the noise.

FACTS

- Human activities, like shipping, subsea constructions, and naval exercises, contribute to underwater radiated noise.
- The noise travels far, disrupting communication, navigation, and feeding behaviors of marine life.
- Whales and dolphins, relying on echolocation, face threats as underwater noise masks their signals.
- Prolonged exposure to noise can lead to stress, hearing loss, altered reproduction, and strandings in marine organisms.

Underwater Radiated Noise

Underwater radiated noise from ships is a pressing environmental concern, impacting marine life and ecosystems. Despite its adverse effects, this aspect of ship regulation remains largely unaddressed by mandatory requirements. The International Maritime Organization (IMO) has taken a crucial step in mitigating the impact by providing guidelines for the reduction of underwater radiated noise. As an advocate for environmental sustainability, we encourage our members to adopt and implement these guidelines to protect the delicate marine environment.

THE IMO GUIDELINE

The guidelines that were approved in June 2023 recognize that commercial shipping is one of the main contributors to underwater radiated noise (URN), which has adverse effects on critical life functions for a wide range of marine life, including marine mammals, fish, and invertebrate species, upon which many coastal indigenous communities depend for their food, livelihoods, and cultures. The guidelines provide an overview of approaches applicable to designers, shipbuilders, and ship operators to reduce the underwater radiated noise of any given ship. They are intended to assist relevant stakeholders in establishing mechanisms and programmes through which noise reduction efforts can be realized.

WHAT ARE THE SOURCES OF NOISE?

Propeller cavitation is the most dominant source of noise from ships. This occurs when the blades of a ship's propeller move through the water and produce pressure differences that can create bubbles. And it is the collapse of these bubbles that generates noise. The mechanical vibrations from various components on a ship, such as engines, pumps, and machinery, can also contribute to underwater noise.

BIODIVERSITY

Prioritizing the mitigation of underwater radiated noise is in our view essential for the preservation of marine biodiversity. By understanding and addressing the impacts of human-generated noise on marine ecosystems, we can take meaningful steps towards safeguarding the intricate web of life beneath the ocean's surface. Policymakers, industries, and conservationists alike must collaborate to implement effective measures that reduce the impact of underwater noise, ensuring a sustainable and harmonious coexistence between human activities and the diverse array of marine life.

DANISH SHIPPING POLICY ON UNDERWATER RADIATED NOISE

We support the use of the IMO guideline on underwater radiated noise. It's important to note that while the guidelines are currently voluntary, they represent a significant step toward raising awareness and promoting actions to mitigate the impact of underwater radiated noise from ships. As the understanding of the issue evolves, there may be further developments in regulations and guidelines by the IMO to address this environmental concern. We also encourage research into noise sources from ships, i.e. to secure that reduction of underwater noise goes hand in hand with fuel efficiency.

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ANNEX 2

THE TRIPARTITE URN WORKING GROUP'S UPTAKE SURVEY

BIMCO International Chamber of Shipping INTERTANKO

Survey to confirm the uptake of Underwater Radiated Noise (URN) reduction measures

For several years, the International Maritime Organization (IMO) has been considering measures to counteract the impacts of Underwater Radiated Noise (URN). In 2014, the organization endorsed its initial set of guidelines, the 2014 IMO Guidelines on URN (MEPC. 1/Circ.833). However, since the ratification of these guidelines, oceanic noise levels have continued to increase within certain regions of the world.

In recognition of this escalating issue, primarily caused by shipping activities, the IMO has taken further action. It has revised its guidelines to specifically address and mitigate the negative effects of this noise pollution on marine life. This updated set of guidelines was presented in the 2023 IMO Guidelines on URN (IMO MEPC.1/Circ.906).

Noting the above, representatives of ship owners and managers, IACS class Societies, and European and far East shipyards have recently formed a Tripartite Working Group (WG) on Underwater Radiated Noise (URN). The objective of this group is to encourage URN reduction through voluntary measures, and to leverage the strong synergy between energy efficiency and noise reduction to readily achieve this co-benefit.

Initially the WG would like to assess the existing level of uptake of the IMO Guidelines for the reduction of URN and of the quiet-ship class notations. Hence, your cooperation in completing the following brief questionnaire would be very much appreciated.

Please note:

- The data is being collected to support the work of the Tripartite working group.
- The data will be assessed among the parties behind the survey (ICS, BIMCO and INTERTANKO), but in anonymised form we may share the supplied information with other members of the Tripartite Working Group (i.e. IACS, ASEF, OCIMF and INTERCARGO) and with IMO.
- We will not share your contact details with any third parties.
- The anonymised data will exclude your name and position, your organisation's name, your email address and names of ships and IMO numbers.
- We may contact you if we have questions about the information supplied.
- The work of the Tripartite group is expected to extend to the end of 2029, at which point your data will be destroyed.

The survey will run from April to end of December 2024.

Please contact: marinesurveys@bimco.org should you have any queries or would like further information relating to this survey.

Thank you in advance for your time and effort in completing this survey. It will take around 10 minutes to complete.

1. Please confirm if you grant permission for us to hold and process the information you provide? *

- ◯ Yes
- ◯ No

2. Please enter your name *

3. Please enter the name of your organisation *

4. Please confirm your position within your organisation *

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ANNEX 3

DRAFT TABLE OF CONTENTS FOR THE INDUSTRY BEST PRACTICE GUIDE BEING DEVELOPED BY ICS AND BIMCO

Due to be published within the third quarter of 2024.