

MARITIME SAFETY COMMITTEE
109th session
Agenda item 4

MSC 109/4/5
11 October 2024
Original: ENGLISH
Pre-session public release:

GOAL-BASED NEW SHIP CONSTRUCTION STANDARDS

Current status of IACS Rec.34/Rev.2

Submitted by Cyprus, Greece, Malta, Hong Kong, China,
ICS, BIMCO, INTERCARGO and RINA

SUMMARY

Executive summary: In their earlier submission MSC 108/19 co-sponsors detailed their concerns over the recently revised IACS Recommendation 34, Standard Wave Data. The co-sponsors have further considered the information within IACS's commenting document MSC 108/19/6 and the recent GBS auditor's report MSC 109/4/1 (Secretary-General). Co-sponsors reaffirm their earlier stated concerns relating to both the methodology and data used to develop Rec.34/Rev.2. The co-sponsors welcome the GBS auditors' recommendation for Rev.2 data to be revised. However, noting that Rev.2 remains adopted and published, a request is made for a statement to be included within the Committee's final report for this session, recommending that Rev.2 should not be used for the development of class rules, or for the design of ships intended for worldwide operation.

*Strategic direction,
if applicable:* 7

Output: 7.24

Action to be taken: Paragraph 19

Related documents: MSC 96/5, annex 13; MSC 108/19, MSC 108/19/6; MSC 109/4/1; resolutions MSC.287(87) and MSC.454(100)

Introduction

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.5) and provides comments on documents MSC 108/19/6 (IACS) and MSC 109/4/1 (Secretary-General).

Background

2 The starting point for the development of the Common Structural Rules has been IACS Rec.34, the Standard Wave Data. This data is intended to represent the worst-case sea state for ships intended for worldwide operation. It is used to define the hull loadings, which in turn define the required plate thicknesses, stiffener and beam sizes.

3 Rec.34 wave data is also used by IACS class societies for the development of many other class rules. Hence this document is of fundamental importance to the classification process, the strength of ship's hulls, the safety of crews and the protection of the environment.

4 The IACS Common Structural Rules for Bulk Carriers and Oil Tankers (CSR) are developed in conformity with the International Goal-Based Ship Construction Standards for Bulk Carriers and Oil Tankers, adopted by resolution MSC.287(87), and are, therefore, subject to periodic audits by IMO.

5 The GBS audit report within document MSC 96/5 includes the following observation IACS/2015/FR1-8/OB/02:

"Modern data show both an increase in mean significant wave height for the North Atlantic and that more extreme weather is being experienced in recent years, including the existence of rogue waves and the possible effect of climate change. However, IACS' Rec. No.34 that is based on old wave statistics was last revised in 2000/2001 and there is no evidence of monitoring since its adoption. While the TB report notes that significant discrepancies are observed between predictions by different databases, no studies have been submitted to show how new data have been assessed to conclude that none of the new databases could be used, nor has any sensitivity study been provided to assess the potential effect of the new data on motions and loads."

...

"The audit has not found sufficient justification that the wave data used in the rules properly represent North Atlantic conditions."

6 Accordingly, IACS undertook a review of Rec.34 and amended the data, which was adopted and published by IACS in January 2023 as Rec.34/Rev.2 (hereafter referred to as Rev.2).

7 Following the publication, Rev.2 was reviewed by the representatives of ICS, INTERCARGO, INTERTANKO and RINA, co-sponsors of the present document. All agreed that both the methodology adopted by IACS and the resulting data gave cause for significant concern. These concerns were expressed bilaterally to IACS via correspondence and within several meetings through 2023 and early 2024. The aforementioned parties also co-sponsored the document MSC 108/19, which articulated the co-sponsors' concerns in detail.

8 In late 2023, IACS submitted document MSC 108/19/6 commenting on co-sponsors' earlier document MSC 108/19.

9 In September 2024, the GBS auditors completed their review of Rev.2 and published their report in document MSC 109/4/1.

Reaffirmation of co-sponsors' position

10 The co-sponsors thank IACS for their commenting document 108/19/6 and the GBS auditors for their report included in document MSC 109/4/1. The co-sponsors have studied carefully the points therein. However, on the following key issues, the co-sponsors remain very concerned:

- .1 the methodology adopted by IACS has limited the wave height hindcasts to the AIS tracks of predominantly weather-routed ships that are actively avoiding storms. For this reason, the resulting data does not represent worst-case North Atlantic conditions. The co-sponsors consider this approach unnecessary and misaligned with current best practices for such metocean studies;
- .2 as compared to the previous version, Rev.2 includes sea areas 24 and 25, which extend nearly as far south as the Canary Islands. The metocean conditions for these additional sea areas are substantially less onerous than for the previously considered areas to the north. Their inclusion is inconsistent with the objective of defining a worst-case sea state;
- .3 Rev.2 includes no allowance for future wave height increases attributable to global warming. Such increases are considered by the co-sponsors as a credible outcome of global warming and could occur within the expected lifetime of ships that are being ordered now. It is deeply concerning that class could be awarded to ships that may not be fit for purpose within their expected lifetime of 25 years;
- .4 comparing Rev.2 with North Atlantic wave data from other reputable sources confirms that Rev.2 is substantially less onerous; and
- .5 Rev.2 remains adopted by IACS and is published on IACS's website with no cautionary notes. In effect, IACS is recommending and using the new data for rule development.

11 In arriving at this position the co-sponsors have taken account of the views of RINA Fellows and Members within the institution's Safety Committee, many of them with relevant experience in ship classification and structural design. The views of hydrodynamicists, metocean experts and master mariners have also been considered, and all closely align. The co-sponsors' divergence with IACS does not represent a misunderstanding, but a fundamental difference of opinion with respect to what constitutes worst-case wave data for the purposes of ship classification and design of ships for worldwide operation.

GBS auditors report (MSC 109/4/1)

12 The co-sponsors note the following recommendation from the GBS auditors report in document MSC 109/4/1:

"After requesting from IACS several clarifications and additional information regarding the submitted background documentation, the Audit Team did not find enough evidence of IACS Rec.34/Rev.2 compliance with GBS FR 2.2.2. and EC 2.3.1. Therefore, a revision of IACS Rec.34/Rev.2 is recommended."

13 For clarity, FR 2.2.2 and EC 2.3.1 are defined within the earlier auditor's report as follows:

"2.2.2 Justification that sea state data and predictions used to develop motions and loads are representative of North Atlantic environmental conditions.

2.3.1 Does the wave data properly represent North Atlantic conditions and include the regions where the most severe conditions are expected?"

14 Hence, the GBS auditors have not been satisfied that sufficient justification had been provided to confirm that Rev.2 is representative of North Atlantic conditions and have recommended that IACS Rec.34 be further revised.

15 The co-sponsors welcome this recommendation. Going forward, the co-sponsors hope that the industry representatives can work with IACS to define an improved methodology that has broad support and can restore confidence in this critical set of data.

Current status of Rev.2

16 The co-sponsors assume that the revision process recommended by the GBS auditors will take a substantial length of time, possibly more than a year. In the meantime, Rev.2 remains adopted by IACS and published on IACS's website. Therefore, in effect, IACS is still recommending the use of Rev.2 for rule development.

17 The co-sponsors consider this as a potentially hazardous situation where the GBS auditors have acknowledged that Rev.2 is not proven as representative of North Atlantic conditions but, notwithstanding that, it is still adopted and published by IACS. In the absence of clear guidance, it is the opinion of the co-sponsors that there is a risk that Rev.2 may adversely influence class rules and ship designs.

18 To provide clarity, the co-sponsors, therefore, consider important that the Committee agree with the inclusion of a statement within this session's final report, recalling the GBS auditors' recommendation and confirming the Committee's view that Rev.2 should not be used for the purposes of classification or for ship design.

Action requested of the Committee

19 The Committee is requested to take note of the information provided within paragraphs 2 to 17 and to include the following clarifying statement within this session's final report:

"With reference to the GBS auditor's report (MSC 109/4/1), the Committee note the recommendation to revise IACS Rec.34/Rev.2, and also the auditor's conclusion that insufficient information had been provided by IACS to justify Rev.2 as being representative of North Atlantic conditions. For clarity, the Committee recommends that Rev.2 should not be used, either for development of class rules, or for design of ships that are intended for worldwide operation.

Until Rec.34 is further revised and accepted by the GBS auditors, it is also the Committee's recommendation that class rules and ship designs should continue to utilize the previous version of Rec.34 (Rev.1, Corr.1)."