INTERNATIONAL MARITIME ORGANIZATION

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Agenda item 5

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AIR POLLUTION AND ENERGY EFFICIENCY

Comments on the progress report on minimum power projects

Submitted by ICS

SUMMARY

Executive summary:	This document provides comments on document MEPC 70/5/20. Particular reference is made to the importance of establishing appropriate minimum "adverse" weather conditions to be taken into account when consideration is given to the minimum installed power that will ensure manoeuvrability for a ship in those conditions
Strategic direction:	7.3
High-level action:	7.3.2
Output:	7.3.2.1
Action to be taken:	Paragraphs 13
Related documents:	MEPC 70/5/20 and MEPC 70/INF.30

1 This document is submitted in accordance with paragraph 6.12.5 of the *Guidelines on 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.4/Rev.4) and provides comments on document MEPC 70/5/20.

Background

2 ICS recognises the vital importance of achieving real improvement in the carbon efficiency of ships whilst at the same time ensuring that current safety levels are at least maintained for ships and the seafarers who operate them. ICS is grateful for the significant work that has been carried out on this issue by the submitters of document MEPC 70/5/20 and supports the need for further careful consideration of this matter.

3 However, ICS has a concern that the environmental conditions selected as being representative of adverse conditions when carrying out direct assessment appear to be set at a level (max. BF8 with 5.5m significant wave-height (Hs)) that many mariners report as being commonly encountered rather than being anything out of the ordinary. It is to be noted that

ICS is not in favour of the installation of larger engines than those currently installed, or power levels in excess of the requirements of the level 1 approach that is based on the engine power statistics of the current fleet. The purpose of this submission is to facilitate confidence in the results obtained from direct assessment.

4 More specifically, whilst recognising that the underlying values selected are in accordance with the guidance provided in the updated Interim Guidelines (MEPC.1/Circ.850/Rev.1), ICS retains concern that the setting of those values has been based on subjective assessment of generic assumptions rather than on objective data.

5 Consideration of the widely referenced IACS Recommendation 34 provides an indication based on recorded wave data that when operating, for example, in the northern Atlantic Ocean, conditions with a significant wave-height of 5.5m or more are likely to be present for approximately 18% of the time. For comparison, most safety related provisions would typically seek to establish a probability of having a negative outcome for a single parameter of no more than 2.5%. A summary of the information provided in the IACS recommendation is provided in the annex to this document.

6 In addition, ICS has a further concern relating to the operational assumptions that are inherent in the proposed values for the environmental criteria. In paragraph 3.6 of annex 1 to document MEPC 70/INF.30, it is suggested that "ship masters usually avoid adverse seas in advance before sea states corresponding to BF7". ICS considers it inappropriate for such a critical design parameter as minimum installed power to be dependent on a master's judgmental estimation of future weather conditions. Even with the support of professional weather routing services, this is far from being an exact science.

7 It is questioned whether the ability to make 6 knots in BF8 and Hs=5.5m provides a sufficient margin of power to keep the ship safe in the more demanding conditions that are regularly encountered.

8 Paragraph 3.1 of annex 1 to document MEPC 70/INF.30 confirms statistically that previous accidents have happened in environmental conditions less severe that those currently quoted in the existing 2013 Interim Guidelines (MEPC.1/Circ.850/Rev.1). However, ICS does not consider that this provides a justification for designing ships with reduced power to handle the conditions that they regularly encounter.

9 Paragraph 3.11 of annex 1 to document MEPC 70/INF.30 proposes that the defining criteria should provide sufficient power to allow a ship to move away from a coastline given advance notice of adverse conditions. It is assumed that warning of impending adverse conditions will be available in sufficient time to allow relocation to take place before local conditions reach BF7 or Hs =4m.

10 However, ICS does not consider it reasonable to assume that simply moving away from the coastline will provide deeper water or more open water away from other ships. There are many offshore areas that are characterised by shallow waters and close proximity to other ships In particular where offshore locations have shallow water there is an increased likelihood of navigational hazards such as wind-farms and other offshore installations.

Proposal

11 ICS proposes that further careful consideration is required for the justification of environmental conditions used as the basis for defining ‘adverse conditions’. ICS proposes further that due to the complex technical nature of this topic, consideration should be given to requesting MSC to consider the technical and safety implications of this issue.

12 Specifically, ICS proposes that more clarity is needed with respect to:

.1 the probability of exceedance of the environmental values selected. This should be based on wave and wind data rather than subjective estimation;

.2 some defined level of reassurance that a ship will at least be able to maintain position in commonly encountered high sea-states; and

.3 the outcome for the required minimum power calculated by direct assessment need not be more stringent than that required by the level 1 approach using the minimum power lines derived from the existing fleet.

Action requested of the Committee

13 The Committee is respectfully requested to consider the comment provided above and to take action as appropriate.

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ANNEX

Hs/Tz	1.5secs	2.5secs	3.5secs	4.5secs	5.5secs	6.5secs	7.5secs	8.5secs	9.5secs	10.5secs	11.5secs	12.5secs	13.5secs	14.5secs	15.5secs	16.5secs	17.5secs	18.5secs	SUM
0.5m	0	0	1.3	133.7	865.6	1186	634.2	186.3	36.9	5.6	0.7	0.1	0	0	0	0	0	0	3050
1.5m	0	0	0	29.3	986	4976	7738	5569.7	2375.7	703.5	160.7	30.5	5.1	0.8	0.1	0	0	0	22575
2.5m	0	0	0	2.2	197.5	2158.8	6230	7449.5	4860.4	2066	644.5	160.2	33.7	6.3	1.1	0.2	0	0	23810
3.5m	0	0	0	0.2	34.9	695.5	3226.5	5675	5099.1	2838	1114.1	337.7	84.3	18.2	3.5	0.6	0.1	0	19128
4.5m	0	0	0	0	6	196.1	1354.3	3288.5	3857.5	2685.5	1275.2	455.1	130.9	31.9	6.9	1.3	0.2	0	13289
5.5m	0	0	0	0	1	51	498.4	1602.9	2372.7	2008.3	1126	463.6	150.9	41	9.7	2.1	0.4	0.1	8328
6.5m	0	0	0	0	0.2	12.6	167	690.3	1257.9	1268.6	825.9	386.8	140.8	42.2	10.9	2.5	0.5	0.1	4806
7.5m	0	0	0	0	0	3	52.1	270.1	594.4	703.2	524.9	276.7	111.7	36.7	10.2	2.5	0.6	0.1	2586
8.5m	0	0	0	0	0	0.7	15.4	97.9	255.9	350.6	296.9	174.6	77.6	27.7	8.4	2.2	0.5	0.1	1309
9.5m	0	0	0	0	0	0.2	4.3	33.2	101.9	159.9	152.2	99.2	48.3	18.7	6.1	1.7	0.4	0.1	626
10.5m	0	0	0	0	0	0	1.2	10.7	37.9	67.5	71.7	51.5	27.3	11.4	4	1.2	0.3	0.1	285
11.5m	0	0	0	0	0	0	0.3	3.3	13.3	26.6	31.4	24.7	14.2	6.4	2.4	0.7	0.2	0.1	124
12.5m	0	0	0	0	0	0	0.1	1	4.4	9.9	12.8	11	6.8	3.3	1.3	0.4	0.1	0	51
13.5m	0	0	0	0	0	0	0	0.3	1.4	3.5	5	4.6	3.1	1.6	0.7	0.2	0.1	0	21
14.5m	0	0	0	0	0	0	0	0.1	0.4	1.2	1.8	1.8	1.3	0.7	0.3	0.1	0	0	8
15.5m	0	0	0	0	0	0	0	0	0.1	0.4	0.6	0.7	0.5	0.3	0.1	0.1	0	0	3
16.5m	0	0	0	0	0	0	0	0	0	0.1	0.2	0.2	0.2	0.1	0.1	0	0	0	1
	0	0	1	165	2091	9280	19922	24879	20870	12898	6245	2479	837	247	66	16	3	1	100000

Seastate Occurances from IACS Recommendation 34

Wave heights and wave periods are mean values

Percentage of seastates 6.5mHs or more	9.8%
Percentage of seastates 5.5mHs or more	18.1%