

MARITIME SAFETY COMMITTEE
104th session
Agenda item 15

MSC 104/15/4
30 June 2021
Original: ENGLISH
Pre-session public release:

WORK PROGRAMME

Proposal for a new output regarding Electronic Nautical Publications (ENPs)

Submitted by Panama, Republic of Korea and ICS

SUMMARY

<i>Executive summary:</i>	This document proposes a new output for the development of guidelines for the use of Electronic Nautical Publications (ENPs) in order to unify the implementation of SOLAS regulation V/19.2.1.4
<i>Strategic direction, if applicable:</i>	6
<i>Output:</i>	Not applicable
<i>Action to be taken:</i>	Paragraph 24
<i>Related documents:</i>	NCSR 7/22/3; resolution MEPC.312(74); MSC.1/Circ.1496; MSC-MEPC.2/Circ.2; FAL.5/Circ.39/Rev.2; MSC.1/Circ.1526 and MSC.1/Circ.1610

Introduction

1 This document is submitted in accordance with 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.2), taking into account resolution A.1111(30) on *Application of the Strategic Plan of the Organization*.

Background

2 In accordance with SOLAS regulation V/19.2.1.4, all ships irrespective of size shall have nautical charts and nautical publications, as defined in SOLAS regulation V/2.2, to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. In this regard, SOLAS regulation V/19.2.1.5 allows electronic means to fulfil partly or fully this requirement, provided that there are appropriate back-up arrangements.

3 For reference, SOLAS regulation V/19.2.1, including a footnote, states that:

"2.1 All ships irrespective of size shall have:

....

- .4 nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. An electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this subparagraph. Ships to which paragraph 2.10 applies shall comply with the carriage requirements for ECDIS detailed therein;
- .5 back-up arrangements to meet the functional requirements of sub-paragraph .4, if this function is partly or fully fulfilled by electronic means;*

* Refer to appendix 6, Back-up requirements, of Performance standards for electronic chart display and information system (ECDIS) (resolution A.817(19), as amended). An appropriate folio of paper nautical charts may be used as a back-up arrangement for ECDIS. Other back-up arrangements for ECDIS are acceptable."

4 In the case of nautical publications, the *IMO requirements on carriage of publications on board ships* (MSC-MEPC.2/Circ.2) expressly states "publications may be carried in the form of electronic media such as CD-ROM in lieu of hard copies". Therefore, ENPs may be used as a means to meet the carriage requirement of nautical publications.

5 In this regard, it should be noted that an ECDIS utilizing electronic nautical charts can be accepted as meeting the chart carriage requirement and the installation of ECDIS became an additional mandatory requirement in accordance with SOLAS regulation V/19.2.10. In respect of ECDIS, IMO has actively discussed and progressed with many relevant issues such as development of performance standards, guidance and unified interpretation.

6 However, unlike electronic nautical charts, IMO has not considered in detail the use of ENPs to date. As mentioned in paragraph 3, it is noted that the footnote about "back-up arrangements" referred in SOLAS regulation V/19.2.1.5, and detailed in the performance standards for ECDIS, only includes electronic nautical charts and there are no references to ENPs.

Discussion

7 As technological development accelerates, IMO has been carrying out various work in order to accept electronic means in lieu of conventional paper-based documents and encourages, as far as practicable, Member States to consider the acceptance of electronic means. The results of this work include the approval of FAL.5/Circ.39/Rev.2 on *Guidelines for the use of electronic certificates*, adoption of resolution MEPC.312(74) on *Guidelines for the use of electronic record books under MARPOL* and mandatory carriage requirements for ECDIS.

8 From this point of view, the ENPs could be deemed as part of this work and the use of ENPs may reduce crews' administrative burden and avoid human error in, *inter alia*, the updating process required by SOLAS regulation V/27. As a result, it can contribute to enhancing the safety of navigation as well as protecting the environment by replacing paper and other such hardcopy printed versions.

9 Owing to these advantages, the use of ENPs has rapidly increased in recent years. However, there are no specific guidelines approved by IMO other than those provided by service suppliers or issued by some Member States. These individual guidelines may have different interpretations and requirements, and it may result in deficiencies of port State control inspections that might continuously evoke concerns.

10 For the purpose of encouraging Member States' interest in the need for these guidelines, the Republic of Korea submitted document NCSR 7/22/3 at NCSR 7 and the proposal was generally supported in plenary.

Contents of guidelines

11 As mentioned in document NCSR 7/22/3, it is understood that there is no need to develop a specific performance standard for ENPs, considering that ENPs are normally used with dedicated software installed on an ordinary PC rather than with specific equipment. Therefore, these guidelines are expected to mainly contain the general description of the use of ENPs, the requirements of adequate backup arrangements and power supply.

12 During the development of guidelines, it may be necessary to consider following a non-exhaustive list of IMO circulars as reference, as below.

- .1 MSC/Circ.891 on *Guidelines for on board use and application of computers*;
- .2 MSC/Circ.982 on *Guidelines on ergonomic criteria for bridge equipment and layout*; and
- .3 MSC/Circ.1091 on *Issues to be considered when introducing new technology on board ship*.

13 In addition, a unified interpretation on the records of equipment concerning "nautical publications" and "backup arrangements for ENPs" also needs to be provided by adding to these guidelines or by amending existing IMO circulars such as MSC.1/Circ.1496 on *Unified interpretation on the appendix to the SOLAS convention regarding the records of equipment concerning nautical charts and ECDIS*.

IMO's objectives

14 This proposal aims at embracing and integrating new and advancing technologies without causing unnecessary burdens and also contributing to consistent implementation of the regulatory framework, which is SD 6 "Ensure regulatory effectiveness" of the strategic directions of the Organization for 2018-2023.

Compelling need

15 In recent years, the use of ENPs as a means for meeting carriage requirement of nautical publication has been increasing for many reasons mentioned in paragraph 8. Considering that there are no specific guidelines for using ENPs, it may cause confusion among the Member States and the maritime industry as to use of ENPs, in particular, the backup arrangement required by SOLAS regulation V/19.2.1.5.

Analysis of the issue

16 If this proposal is accepted, it is envisaged that minor amendments or revisions to relevant IMO instruments need to be carried out. It may include, but not limited to, the modification of existing footnotes in applicable requirements of the SOLAS Convention and the HSC Code and a revision of MSC.1/Circ.1496 to accommodate these guidelines.

Analysis of implications

17 Considering that the use of ENPs is not a mandatory requirement, the proposal does not incur additional costs to the maritime industry and will not cause any controversy or adverse effect.

Benefits

18 As mentioned in paragraph 9, these guidelines will assist Member States to develop adequate legislation or amendments thereto, at the national level and contribute to enhancing maritime safety with unified implementation of IMO instruments.

19 In addition, these guidelines may also contribute to the future implementation of e-navigation on "MS 12 – Nautical publications service", which is being discussed continuously in IMO.

Industry standards

20 No industry standards exist, nor are any required or will be affected.

Output

21 The output will be:

- .1 Specific: complete development of the guidelines within the procedures of the Committee;
- .2 Measurable: complete and approve MSC circular;
- .3 Achievable: MSC's subsidiary bodies have the expertise required;
- .4 Realistic: ample time should be provided to complete the work; and
- .5 Time-bound: it is estimated that one session of the NCSR Sub-Committee would be needed.

Human element

22 The completed checklist as per MSC-MEPC.7/Circ.1 is set out in annex 2. In general terms, this proposal is not considered to have any significant implications on the human element.

Urgency

23 Noting that the ENPs are already in service globally, the guidelines should be developed as soon as possible. Therefore, the work should take place in the 2022-2023 biennium of the NCSR Sub-Committee to be completed in one session.

Action requested of the Committee

24 The Committee is invited to consider the proposal provided above and approve the request for a new output, assigning the NCSR Sub-Committee as the coordinating organ.

ANNEX 1

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS

This checklist should be used when preparing the analysis of implications required in submissions of proposals for inclusion of outputs. For the purpose of this analysis, the term "administrative requirements" is defined in resolution A.1043(27), i.e. administrative requirements are an obligation arising from future IMO mandatory instruments to provide or retain information or data.

Instructions:

- (A) If the answer to any of the questions below is **YES**, the Member State proposing an output should provide supporting details on whether the burdens are likely to involve start-up and/or ongoing cost. The Member State should also make a brief description of the requirement and, if possible, provide recommendations for further work (e.g. would it be possible to combine the activity with an existing requirement?).
- (B) If the proposal for the unplanned output does not contain such an activity, answer **NR** (Not required).
- (C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens

<p>1. Notification and reporting?</p> <p>Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members, etc.</p>	<p>NR</p> <p>■</p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
<p>2. Record keeping?</p> <p>Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education, etc.</p>	<p>NR</p> <p>■</p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
<p>3. Publication and documentation?</p> <p>Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing, etc.</p>	<p>NR</p> <p>■</p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
<p>4. Permits or applications?</p> <p>Applying for and maintaining permission to operate, e.g. certificates, classification society costs.</p>	<p>NR</p> <p>■</p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		
<p>5. Other identified requirements?</p>	<p>NR</p> <p>■</p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)		

ANNEX 2

CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

<p>Instructions: If the answer to any of the questions below is:</p> <p>(A) YES, the preparing body should provide supporting details and/or recommendation for further work. (B) NO, the preparing body should give proper justification as to why human element issues were not considered. (C) NA (Not Applicable) – the preparing body should give proper justification as to why human element issues were not considered applicable.</p>	
<p>Subject Being Assessed: (e.g. Resolution, Instrument, Circular being considered)</p> <p>SOLAS Convention, HSC Code</p>	
<p>Responsible Body: (e.g. Committee, Sub-committee, Working Group, Correspondence Group, Member State)</p> <p>Sub-Committee on Navigation, Communications and Search and Rescue</p>	
1. Was the human element considered during development or amendment process related to this subject?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	<input type="checkbox"/> Yes <input type="checkbox"/> No
• Ship owners/managers?	<input type="checkbox"/> Yes <input type="checkbox"/> No
• Seafarers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Surveyors?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No
8. Does the solution address safeguards to avoid organizational errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
10. Have human element experts been consulted in development of the solution?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<p>11. HUMAN ELEMENT: Has the proposal been assessed against each of the factors below?</p>	
<input type="checkbox"/> CREWING. The number of qualified personnel required and available to safely operate, maintain, support, and provide training for system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills, and abilities to achieve desired job/task performance.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health, and comfort of those working on board, such as noise, vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury, or death in a catastrophic event such as fire, explosion, spill, collision, flooding, or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive, and sensory abilities of the user population.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Comments: (1) Justification if answers are NO or Not Applicable. (2) Recommendations for additional human element assessment needed. (3) Key risk management strategies employed. (4) Other comments. (5) Supporting documentation.	