

MARITIME SAFETY COMMITTEE  
101st session  
Agenda item 21

MSC 101/21/10  
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## WORK PROGRAMME

### Arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat (equipment used in the simulated launching of free-fall lifeboats)

Submitted by the Marshall Islands, New Zealand, ICS, BIMCO, IACS, IFSMA, INTERTANKO, INTERCARGO, InterManager, IPTA, RINA and NI

#### SUMMARY

*Executive summary:* This document proposes a new output to develop design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat (equipment used in the simulated launching of free-fall lifeboats)

*Strategic direction, if applicable:* 6

*Output:* To be decided

*Action to be taken:* Paragraph 20

*Related documents:* SSE 3/4, SSE 3/16 (paragraphs 4.5 and 4.14); MSC 97/19/4; SSE 4/19 (paragraphs 4.5 to 4.10);

#### Introduction

1 This document is submitted in accordance with the provisions of paragraphs 4.6 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.1), taking into account the *Application of the Strategic Plan of the Organization* (resolution A.1111(30)), and section 3.2.1 of the *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1500/Rev.1).

2 The co-sponsors propose a new output to develop design and prototype test requirements for the arrangements used in relation to the simulated launching of free-fall lifeboats and, consequently, to amend and update, as necessary, the LSA Code and resolution MSC.81(70).

**IMO's objectives**

3 The co-sponsors consider the proposal in this document is entirely consistent with, and supportive of, the IMO's mission as stated in paragraph 1 of the annex to the Strategic Plan for the Organization for the six-year period 2018 to 2023 (resolution A.1110(30)) i.e.:

"The mission of the International Maritime Organization (IMO), as a United Nations specialized agency, is to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation. This will be accomplished by adopting the highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships, as well as through consideration of the related legal matters and effective implementation of IMO instruments, with a view to their universal and uniform application."

4 This proposal is also understood to be consistent with IMO's Strategic Direction 6 (SD 6: Ensure regulatory effectiveness), which aims to "ensure that a universally adopted, effective, international regulatory framework is in place and implemented consistently, embracing and integrating new and advancing technologies, without causing unnecessary burdens.", as set out in paragraph 31 of the annex to resolution A.1110(30).

**Need**

5 The Australian Transport Safety Bureau (ATSB), in their report, entitled "Unintentional Release of the freefall lifeboat from *Aquarosa*", recommended that the simulation equipment (e.g. wires) used for maintenance and testing should be approved and designed to take into account the shock loading that would be experienced during a simulated launching, as well as the lifeboat's static weight. This issue was discussed in document SSE 3/4 (IACS) and the Sub-Committee, having generally agreed with the proposed understanding (SSE 3/4, paragraph 7), invited IACS to submit its understanding to III 3 for consideration under its agenda item on "Lessons learned and safety issues identified from the analysis of marine safety investigation reports" (paragraph 4.14 of SSE 3/16). The co-sponsors note that further discussion of this particular issue related to the operational simulated launching of freefall lifeboats was, in effect, placed in abeyance pending the finalization of the provisions relating to the conduct of drills in relation to such survival craft, as now addressed in MSC.1/Circ.1578.

6 The co-sponsors understand that, while MSC.1/Circ.1578 now appropriately addresses the risks associated with conducting drills on free-fall lifeboats, there is a demonstrable need to develop design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat (equipment used in the simulated launching of free-fall lifeboats).

**Analysis of the issue**

7 SOLAS regulation III/20.11.2, as amended by resolution MSC.404(96), states:

"11.2 Lifeboat and rescue boat release gear, including fast rescue boat release gear and free-fall lifeboat release systems, shall be:

- .1 subject to a thorough examination and operational test during the annual surveys required by regulations I/7 and I/8;
- .2 in case of on-load release gear, operationally tested under a load of 1.1 times the total mass of the boat when loaded with its full complement of persons and equipment whenever the release gear is overhauled. Such overhauling and operational test shall be carried out at least once every five years;\* and

- .3 notwithstanding paragraph 11.2.2, the operational testing of free-fall lifeboat release systems shall be performed either by free-fall launch with only the operating crew on board or by a test without launching the lifeboat carried out based on Requirements for maintenance, thorough examination, operational testing, overhaul and repair.

\* Refer to Recommendation on testing of life-saving appliances (resolution A.689(17)), as amended. For life-saving appliances installed on board on or after 1 July 1999, refer to Revised Recommendations on testing of life-saving appliances (resolution MSC.81(70)), as amended."

The conduct of "the operational testing of free-fall lifeboat release systems" (SOLAS regulation III/20.11.2.3) is addressed in paragraph 6.2.7 of resolution MSC.402(96) on *Requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear*, which states:

- "6.2.7 The operational test of the free-fall lifeboat release function shall be carried out as follows:
- .1 engage the arrangements for the test without launching the lifeboat, required by paragraph 4.7.6.4 of the LSA Code, as specified in the manufacturer's operating instructions
  - .2 if required to be on board, ensure that the operator is properly seated and secured in the seat location from which the release mechanism is to be operated;
  - .3 operate the release mechanism to release the lifeboat;
  - .4 reset the lifeboat in the stowed configuration;
  - .5 repeat the procedures referred to in .2 to .4 above, using the back-up release mechanism, if applicable;
  - .6 remove the arrangements for the test without launching the lifeboat, required by paragraph 4.7.6.4 of the LSA Code; and
  - .7 verify that the lifeboat is in the ready to launch stowed configuration."

The functional requirement that the design of the free-fall lifeboat release system is such that it can be tested without launching the lifeboat, is prescribed in paragraph 4.7.6.4 of the LSA Code i.e.:

*"4.7.6 Lifeboat fittings*

*Each free-fall lifeboat shall be fitted with a release system which shall:*

- .1 ...
- .2 ...
- .3 ...
- .4 *be designed to test the release system without launching the lifeboat; and*  
..."

8 While paragraph 6.2.7.1 of resolution MSC.402(96) prescribes the use of "the arrangements" required by paragraph 4.7.6.4 of the LSA Code, the co-sponsors note that the provisions of paragraph 4.7.6.4 of the LSA Code do not address "the arrangements" as such. Rather, paragraph 4.7.6.4 of the LSA Code currently only specifies a functional requirement that a free-fall lifeboat's release system can be tested without launching the lifeboat.

9 The co-sponsors are of the view that there is a need to amend paragraph 4.7.6.4 of the LSA Code to include requirements for the design of "the arrangements" taking into account the lifeboat's static weight as well as the shock loading that would be experienced in the operational testing of the free-fall lifeboat release system without launching the lifeboat (a simulated launch). Prototype test requirements for "the arrangements", if developed, would form the basis for the amendments of resolution MSC.81(70).

10 The co-sponsors consider that the practicability, feasibility and proportionality of the proposal are evident taking into account that many of the issues and measures discussed above are already being implemented on a number of ships and are considered to represent "best practice". While the implementation of the proposed amendment is feasible (it is possible and practical), the co-sponsors consider that it will also be practicable (it will easily be capable of being put into practice). The proposal would also satisfy the test of proportionality in that this action would not exceed that which is necessary to achieve the overall objective of facilitating the safety of ships' crews, and the global and consistent implementation of IMO agreed requirements.

### **Analysis of implications**

11 It is intended that these proposed amendments should be applied to equipment certified in accordance with LSA Code and installed on "new" ships that carry free-fall lifeboats. There are likely to be some minimal costs to the industry as a consequence of the outcomes from this new output e.g. in the design (including material selection), prototype testing and approval of the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat; additional training for ship's crews involved in the simulated launching of free-fall lifeboats; and the provision and maintenance of restraining devices.

12 The co-sponsors are of the view that the outcomes of this new output may necessitate additional reporting requirements to the Organization for any involved parties; insofar as the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat are to be approved, depending on the scope of this approval (e.g. by type) that is agreed. There will be a legislative and administrative burden to flag States in transposing the outcomes of this new output into national legislation and/or guidance to industry applicable to ships that fly their flags.

13 The checklist for identifying administrative requirements given in annex 5 to MSC-MEPC.1/Circ.5/Rev.1 has been completed and is provided in annex 1 to this document.

### **Benefits**

14 The co-sponsors are of the view that the benefits of undertaking the work related to this new output will be two-fold i.e.:

- .1 it will facilitate the safety of life at sea by increasing the confidence in the effective and efficient operation of the free-fall lifeboat in the event of the ship being abandoned; and

- .2 the development of design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat, which can be consistently and globally implemented.

### **Industry standards**

15 The co-sponsors are not aware of any internationally recognized standards that exist, or are being developed, which are of relevance to the issues discussed above.

### **Output**

16 The co-sponsors propose that the Committee endorses the following new output:

- .1 "Develop design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat".

17 Parts I and II of the check/monitoring sheet given in annex 2 to MSC.1/Circ.1500/Rev.1 has been completed and is provided in annex 2 of this document.

### **Human element**

18 The checklist for considering "human element issues by IMO bodies" given in the annex to MSC-MEPC.7/Circ.1 is provided in annex 3 to this document.

### **Urgency**

19 The co-sponsors recommend the proposed output should be included in the post biennial agenda of the Committee, with SSE as the associated organ, and should be completed in no more than two sessions.

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

20 The Committee is invited to consider the proposal above and take action, as appropriate.

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**ANNEX 1**

**CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS**

<p>(A) If the answer to any of the questions below is <b>YES</b>, the Member State proposing an output should provide supporting details on whether the requirements are likely to involve start-up and/or ongoing costs. The Member State should also give 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?</p> <p>(B) If the proposal for the output does not contain such an activity, answer <b>NR</b> (Not required).</p> <p>(C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens.</p>		
<p>1. Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members</p>	NR	<p>Yes <input type="checkbox"/> Start-up <input checked="" type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>2. Record keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education</p>	NR	<p>Yes <input type="checkbox"/> Start-up <input checked="" type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes) <i>See paragraphs 11 and 12 above</i></p>		
<p>3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing</p>	NR ✓	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>4. Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs</p>	NR ✓	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>5. Other identified requirements? <i>See paragraphs 11 and 12 above.</i></p>	NR	<p>Yes <input checked="" type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>

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**ANNEX 2**

**PARTS I AND II OF THE CHECK/MONITORING SHEET FOR THE PROCESS OF  
AMENDING THE CONVENTION AND RELATED MANDATORY INSTRUMENTS  
(PROPOSAL/DEVELOPMENT) (MSC.1/CIRC.1500/REV.1)**

**Part I – Submitter of proposal (refer to section 3.2.1.1)\***

1	<i>Submitted by (Document Number and submitter)</i> <b>MSC 101/21/10 - Marshall Islands, New Zealand, ICS, BIMCO, IACS, IFSCMA, INTERTANKO, INTERCARGO, InterManager, IPTA, RINA and NI</b>
2	<i>Meeting session</i> <b>MSC 101</b>
3	<i>Date (date of submission)</i> <b>1 March 2019</b>

**Part II – Details of proposed amendment(s) or new mandatory instrument (refer to sections 3.2.1.1 and 3.2.1.2)\***

1	<i>Strategic Direction</i> <b>6</b>
2	<i>Title of the output</i> <b>Develop design and prototype test requirements for the arrangements used in the operational testing of free-fall lifeboat release systems without launching the lifeboat</b>
3	<i>Recommended type of amendments (MSC.1/Circ.1481) (delete as appropriate)</i> <ul style="list-style-type: none"> <li>• <b>Four-year cycle of entry into force</b></li> <li>• <del>exceptional circumstance</del></li> </ul>
4	<i>Instruments intended for amendment (SOLAS, LSA Code, etc.) or developed (new code, new version of a code, etc.)</i> <b>LSA Code</b>
5	<i>Intended application (scope, size, type, tonnage/length restriction, service (International/non-international), activity, etc.)</i> <b>All ships to which SOLAS Chapter III requires the carriage of freefall lifeboats</b>
6	<i>Application to new/existing ships</i> <b>New ships</b>
7	<i>Proposed coordinating sub-committee</i> <b>SSE Sub-Committee</b>
8	<i>Anticipated supporting sub-committees</i> <b>None</b>
9	<i>Time scale for completion</i> <b>2021</b>
10	<i>Expected date(s) for entry into force and implementation/application</i> <b>1 January 2024</b>
11	<i>Any relevant decision taken or instruction given by the Committee</i> <b>None</b>

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**ANNEX 3**

**CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES  
(MSC-MEPC.7/CIRC.1)**

<b>Instructions:</b>	
If the answer to any of the questions below is:	
<p>(A) <b>YES</b>, the preparing body should provide supporting details and/or recommendation for further work.</p> <p>(B) <b>NO</b>, the preparing body should make proper justification as to why human element issues were not considered.</p> <p>(C) <b>NA</b> (Not Applicable) the preparing body should make proper justification as to why human element issues were not considered applicable.</p>	
<b>Subject Being Assessed: (e.g. Resolution, Instrument, Circular being considered)</b>	
<b>Provisions in LSA Code, Chapter 4</b>	
<b>Responsible Body: (e.g. Committee, Sub-Committee, Working Group, Correspondence Group, Member State)</b>	
<b>Maritime Safety Committee and SSE Sub-Committee</b>	
1. Was the human element considered during development or amendment process related to this subject?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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 checked="" type="checkbox"/> No <input 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 <input checked="" type="checkbox"/> NA
• Shipowners/managers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Seafarers?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
• Surveyors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
6. At some point, before final adoption, has the solution been reviewed or considered	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
8. Does the solution address safeguards to avoid organizational errors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA

11. HUMAN ELEMENT: Has the proposal been assessed against each of the factors below?	
<input type="checkbox"/> CREWING. The number of qualified personnel required and available to safely operate, maintain, support and provide training for system.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities and experience levels that are needed to properly perform job tasks.	✓Yes <input type="checkbox"/> No <input 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.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health and comfort of those on working on board, such as noise, vibration, lighting,	✓Yes <input type="checkbox"/> No <input 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.	✓Yes <input type="checkbox"/> No <input 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.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<p><b>Comments:</b> (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.</p> <p>(3) Are the solutions proposed for the subject in agreement with existing instruments? <b>The intent of this proposal is to develop design and prototype test requirements for the arrangements used for the operational test of the free-fall lifeboat release system without launching the lifeboat.</b></p>	