

MARITIME SAFETY COMMITTEE  
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## WORK PROGRAMME

### Draft amended guidelines for simulated launching of free-fall lifeboats

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#### SUMMARY

*Executive summary:* This document provides draft amended guidelines to supplement the *Guidelines on safety during abandon ship drills using lifeboats* (MSC.1/Circ.1206/Rev.1, annex 2).

*Strategic direction:* 5.1

*High-level action:* 5.1.2

*Output:* 5.1.2.1

*Action to be taken:* Paragraph 7

*Related document:* MSC 97/19/4

#### General

1 The Industry Lifeboat Group (ILG) has developed draft guidelines for simulated launching of free-fall lifeboats.

2 The above ILG guidelines share the same objective as the draft MSC circular on *Guidelines on safety during abandon ship drills using lifeboats* prepared by SSE 3 (SSE 3/WP.3, annex 4) and they are presented by the co-sponsors to assist the Committee in its consideration of document MSC 97/19/4.

3 The ILG guidelines are intended to support the work of SSE 4 on the detailed review of the draft MSC circular on *Guidelines on safety during abandon ship drills using lifeboats* and, in particular, its appendix containing the *Guidelines for simulated launching of free-fall lifeboats*. It is anticipated that the draft amended guidelines, as set out in the annex, would be further developed prior to SSE 4, with a view to facilitating the Sub-Committee's consideration.

## Discussion

4 SOLAS regulation III/19.3.4.4 includes the requirements for free-fall lifeboat launching which existing and proposed amended Guidelines address. For ease of reference the SOLAS regulation is copied below:

"In the case of a lifeboat arranged for free-fall launching, at least once every three months during an abandon ship drill the crew shall board the lifeboat, properly secure themselves in their seats and commence launch procedures up to but not including the actual release of the lifeboat (i.e., the release hook shall not be released). The lifeboat shall then either be free-fall launched with only the required operating crew on board, or lowered into the water by means of the secondary means of launching with or without the operating crew on board. In both cases the lifeboat shall thereafter be manoeuvred in the water by the operating crew. At intervals of not more than six months, the lifeboat shall either be launched by free-fall with only the operating crew on board, or simulated launching shall be carried out in accordance with the guidelines developed by the Organization."

5 The above SOLAS requirements can be read as follows:

.1 At least every three months:

- whole crew shall board the free fall lifeboat and start launching procedures but not release the lifeboat;
- afterwards the boat shall be free-fall launched (with operating crew only); or
- launched by davit with/without operating crew and then manoeuvred in the water.

.2 At least every six months, the free-fall lifeboat shall be:

- Launched by free-fall (with operating crew only); or
- Simulated launching shall be carried out.

6 A chronological consequence of the requirements over 12 months could be as follows:

		A		B	
January		Davit launch to the water	<i>and</i>	Manoeuvre in the water	See notes
April		Simulated launching, plus davit launch to the water	<i>and</i>	Manoeuvre in the water	See notes
October		Davit launch to the water	<i>and</i>	Manoeuvre in the water	See notes
January		Simulated launching, plus davit launch to the water	<i>and</i>	Manoeuvre in the water	See notes

### Notes:

- (1) Instead of A and B, "free-fall gravity launching to the water with operating crew on board" may be conducted.
- (2) "Manoeuvre in the water" applies to all cases and should take place every three months.

**Action requested of the Committee**

7 The Committee is invited to note the information set out in the annex.

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## ANNEX

### DRAFT AMENDED GUIDELINES FOR SIMULATED LAUNCHING OF FREE-FALL LIFEBOATS

The following guidelines provide a basic outline of steps to safely carry out simulated launching of free-fall lifeboats, as referenced under SOLAS regulation III/19.3.4.4.

#### Definition

Simulated launching is procedure for demonstrating the operation of free-fall lifeboats without the physical activation of the free-fall release system.

#### Purpose and Scope

The purpose of these Guidelines is to provide a basic outline of essential steps to carry out safely, simulated launching. These Guidelines are general; the lifeboat manufacturer's instruction manual should always be consulted before conducting simulated launching. Simulated launching should only be carried out with lifeboats and launching appliances designed to accommodate it, and for which the manufacturer has provided instructions. Simulated launching should be carried out under the supervision of a responsible person who should be an officer experienced in such procedures.

#### General

The safety of all personnel participating in drills, testing and maintenance of free-fall lifeboats is of paramount importance. In order to differentiate between the important and separate functions of onboard training, familiarisation and abandon ship drills and those related to maintenance, testing and verification of free-fall lifeboats and their component systems, these Guidelines have two parts **(Part A and Part B)**.

**Part A of these Guidelines** provide a basic outline of essential steps to safely carry out simulated launching under SOLAS regulation III/19.3.4.4 for a lifeboat arranged for free-fall launching, when conducting an abandon ship drill.

**Part B of these Guidelines** provide a basic outline of essential steps to safely carry out maintenance, testing and verification of release systems on free-fall lifeboats under SOLAS regulation III/19.3.4.4.

## PART A

### Guidelines for Simulated Launching of Free-Fall Lifeboats

#### 1 Preparation

The lifeboat manufacturer's instruction manual should always be consulted before conducting simulated launching.

The responsible person should ensure, before any drill that is required, maintenance and periodic checks have been carried out with reference to the equipment manufacturer's instruction materials and pertinent documentation to confirm that all components of the lifeboat and launching appliance are in good condition.

Simulated launching should:

- .1 only be carried out under the supervision of a responsible person which should be an officer experienced in procedures for lifeboats and launching appliances; and
- .2 be included in the Safety Management System incorporating essential safeguards against exposure of the crew to unacceptable risk.

Prior to embarking personnel, the responsible person should:

- .3 establish and maintain good communication with all participants;
- .4 identify location of, and method for, disengaging lashings, gripes, etc.;
- .5 ensure that any restraining device(s) provided by the manufacturer for simulated launching are correctly installed, and in good condition; and
- .6 ensure that all components of the free-fall release mechanism are correctly set/reset with all guards and anti-launch protection in place.

**Do not disengage lashings, gripes, etc. other than is necessary to gain entry into lifeboat.**

#### 2 Simulated launch

This activity addresses simulation training for crews required in SOLAS regulation III/19.3.4.4 as an alternative to free-fall launching that releases the lifeboat.

2.1 The responsible person should supervise boarding of all crew and ensure that all seatbelts have been fastened.

2.2 Crew with designated duties indicate the location and correct operation of the primary release mechanism **without operating the release mechanism**.

2.3 Repeat 2.2 above, for the back-up release mechanism when applicable, **without operating the release mechanism**.

2.4 All crew disembark the lifeboat.

2.5 The responsible person, upon completion of the simulated launch, should check and confirm that the lifeboat is secure in its stowed position and ready for immediate use, by:

- .1 verifying that the free-fall release mechanism is and remains fully and correctly engaged;
- .2 securing any lashings, gripes, etc. that were released to allow access; and
- .3 removing any additional restraining and/or recovery devices used for the simulated launch procedure.

## **PART B**

### **Guidelines for Testing the Release System for Free-Fall Lifeboats.**

Testing the release system should be separate to and not be carried out during simulated launching as referenced under part A of these guidelines.

The requirements of SOLAS regulation III/19.3.4.4 for lowering free-fall lifeboats into the water are addressed under section 7 of these Guidelines. Requirements in SOLAS regulation III/19.3.4.4 for launching by free fall or simulated launching are addressed under section 2 (Simulated launch) of part A and section 8 (Launching test: free-fall launch) of part B.

#### **1 Preparation**

1.1 The responsible person, before any maintenance, testing and/or verification of satisfactory functioning of systems, should:

- .1 establish and maintain good communication with all participants;
- .2 identify location of, and method for, disengaging lashings, gripes, etc;
- .3 ensure that any restraining device(s) provided by the manufacturer for simulated launching are correctly installed, and in good condition;
- .4 ensure that all components of the free-fall release mechanism are correctly set/reset with all guards and anti-launch protection in place;
- .5 ensure that manufacturer's instruction materials and pertinent documentation required for maintenance and periodic checks of the equipment are available and understood by those participating; and
- .6 ensure that all components of the lifeboat and launching appliances are visually inspected/checked to ensure that they are in good condition.

In order to avoid a single point of failure, restraining devices attaching the free-fall lifeboat to the ship should be duplicated to achieve 100% redundancy. Restraining devices should not share attachment points on the lifeboat or ship.

## 2 Definitions

**For the purposes of these Guidelines the following terms or definitions are used:**

2.1 The ship, as referred to in this section, is that to which the free-fall lifeboat is the main means of evacuation.

2.2 Testing of mechanisms and/or equipment for free-fall launching of lifeboats is the action of ensuring that all mechanisms and equipment for launching the free-fall lifeboat are fully operational.

2.3 Arrested launching is the process of releasing a free-fall lifeboat so that, for testing purposes it is able to travel along the launching ramp but is prevented from continuing to a full launch, by restraining devices.

2.4 Restraining devices include the following:

- .1 A Primary Restraint: The lifting equipment such as a davit, gantry or other lifting device, including associated wires, strops or slings used during a controlled lowering and return of the lifeboat along the launching ramp; and
- .2 A Secondary Restraint: Strops, slings or other measures that form an additional attachment between the lifeboat and the launching apparatus. A secondary restraint is separate from the primary restraint, it uses separate attachment points on the ship and on the free-fall lifeboat and is designed to avoid a single point of failure incident.

The system of restraints should allow movement of the lifeboat along the launching ramp for a sufficient distance to prove freedom of movement without disengaging from the ramp.

## 3 Precautionary measures

3.1 Primary and secondary restraints should be adjustable so as to be able to control the position of the lifeboat whilst it remains in contact with and fully supported by the launching ramp.

3.2 Secondary restraints should be designed to mitigate shock loading sufficiently that may result from the arrest of movement along the launching ramp. When secondary restraints are attached, their characteristics and fitting should ensure that asymmetric loading is avoided.

3.3 No personnel should enter the lifeboat until all restraining devices to be used have been attached and verified as secure.

## 4 Conduct of tests

4.1 The purpose of the test is to verify that the release system will function as intended in all anticipated conditions throughout its service life and that the lifeboat will proceed unimpeded along the launch ramp. The launch ramp track, rollers, or other means should be verified as having free movement and be clear of obstructions, to allow unimpeded movement.

4.2 If the free-fall lifeboat cannot be released other than from within the lifeboat, the action may be performed by a single, competent person, restrained at the activation position inside the lifeboat. **In such circumstance both primary and secondary restraints should be connected.**



4.3 If the release can be activated from outside the lifeboat the test should be conducted from that position (see also paragraph 5.1).

## **5 Procedures for unmanned launching operations**

5.1 In lifeboats that have release arrangements that can normally only be activated from inside, alternative arrangements may be provided and used that enable remote operation of the activation device from a position outside the lifeboat. Any such alternative arrangements should be temporary and should only be fitted for the purpose of the test.

## **6 Launching test: arrested launch**

6.1 Primary and secondary restraints (see paragraph 3.1), should be attached and checked prior to operating crew boarding. Both restraints should be set with a minimum of slack consistent with the need to operate and test the release mechanism function (see paragraphs 6.3 and 6.4).

6.2 If the release mechanism cannot be operated from outside the lifeboat: Minimum operating crew board and secure themselves at operating positions.

### **NB Paragraph 6.1 to be completed before this action.**

6.3 The release system is activated and the load transferred to the primary restraint.

6.4 The primary restraint should be slackened until the load is taken by the secondary restraint(s).

6.5 The release system should be inspected to ensure correct and unimpeded operation.

6.6 In systems using ramps consisting of a number of rollers, during travel the sheer strake of the lifeboat should be observed to make contact with and turn the rollers. Rollers that are not turned during this travel should be manually proven using a safe system of access.

6.7 In systems incorporating a skid type ramp, the weight of the lifeboat should be re-taken on the primary restraint. The secondary restraint should remain attached. The lifeboat should, if practical, be lifted sufficiently clear of the launching ramp to inspect the condition of the full length of sliding surface, confirming that the ramp is clear of obstruction (sliding surfaces are to be free and clear of debris, rust, or other obstructions that may inhibit the launch).

6.8 Having completed the inspection in paragraphs 6.6 or 6.7 the lifeboat should be recovered and the release system re-set.

6.9 The test should be repeated for any secondary (emergency) release position.

6.10 Upon completion of all tests the lifeboat should be re-stowed for use and the release system re-set and the condition verified.

6.11 All attachment points and restraints used during the test(s) should be visually inspected/checked thoroughly for signs of damage.

6.12 Any items found damaged should be repaired or replaced as required by the Administration.

6.13 The responsible person should check and confirm that the lifeboat is secure in its stowed position and ready for immediate use, by:

- .1 confirming that the free-fall release mechanism is properly engaged;
- .2 securing any lashings, gripes, etc. that were released to allow access; and
- .3 removing any additional restraining and/or recovery devices used for the testing procedure.

## **7 Launching test: in-water**

7.1 SOLAS regulation III/19.3.4.4 requires that free-fall lifeboats shall be launched and manoeuvred in the water every three months. The regulation also requires that the free-fall lifeboat shall be launched by free fall at intervals of not more than six months with only the operating crew on board or simulated launching shall be carried out in accordance with the guidelines developed by the Organization.

7.2 Where it is not possible or advisable to conduct a free-fall launch, the free-fall lifeboat may be placed in the water attached to its recovery arrangements from the davit, gantry or other lifting arrangement dedicated to the task. This operation should be conducted with the lifeboat **unmanned**. Crew should board from another craft or facility.

7.3 Free-fall launching risks injury to personnel and/or damage and should be conducted with the lifeboat **unmanned** subject to the precautions in paragraph 8.1 below.

7.4 If free-fall launching cannot be carried out with the lifeboat **unmanned**, the launch should be carried out as noted under paragraphs 7.2 and 4.2.

## **8 Launching test: free-fall launch**

8.1 Free-fall launching should only be conducted when conditions are suitable in a clear drop zone of water adjacent to the launching point from the ship.

8.2 Precautions should be taken to ensure the drop trajectory and the drop zone are clear of obstructions and small craft. Swimmers and wildlife should be prevented from entering the area. A risk assessment should be completed to evaluate a free-fall launch.

8.3 Local/port authority permission may need to be obtained and any additional requirements for safety should be complied with.

8.4 The launch should be conducted with the lifeboat **unmanned**.

8.5 Prior to launching, the free-fall lifeboat's rudder should be centralised to prevent any sudden change of direction on entering the water.

8.6 A standby boat should be in the vicinity ready to manage the lifeboat after entering the water and to facilitate boarding.

## **9 Waterborne tests**

9.1 SOLAS regulation III/19.3.4.4 requires that free-fall lifeboats shall be launched and manoeuvred in the water every three months.

9.2 The tests are intended to both maintain the competence of the crew and verify the lifeboat's correct operation. The test should cover at least:

- .1 engine starting and stopping from all sources of electrical power and any alternate system;
- .2 the full range of rudder movements;
- .3 the full range of engine movements;
- .4 the handling characteristics of the lifeboat;
- .5 the correct sealing of the interior and maintenance of internal positive atmospheric pressure as well as the function of the water spray systems;
- .6 the correct operation of all interior systems (battery charging and switching, lighting, searchlight, compass) and any other equipment; and
- .7 the correct resetting of release systems. This should be verified following recovery and of the lifeboat and before any of the lifting gear is detached.

## **10 Recovery**

10.1 Following waterborne tests, the lifeboat is to be attached to lifting arrangements. The operating crew should transfer to the standby boat or other facility and preparations should be made to retrieve the unmanned lifeboat and secure it in the stowed position onboard.

10.2 The lifeboat appendages, fixtures and fittings (both external and internal) should be inspected for damage or signs of fatigue.

10.3 Any items found damaged should be repaired or replaced as required by the Administration.

10.4 The responsible person should check and confirm that the lifeboat is secure in its stowed position and is ready for immediate use, by:

- .1 confirming that the free-fall release mechanism is correctly set;
- .2 securing any lashings, gripes, etc. that were removed to allow access; and
- .3 removing any additional restraints and/or recovery devices used during the recovery procedure.