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MSC.1/Circ.1431
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**GUIDELINES FOR THE APPROVAL OF HELICOPTER FACILITY
FOAM FIRE-FIGHTING APPLIANCES**

1 The Maritime Safety Committee, at its ninetieth session (16 to 25 May 2012), having considered a proposal by the Sub-Committee on Fire Protection, at its fifty-fifth session, approved the Guidelines for the approval of helicopter facility foam fire-fighting appliances, as set out in the annex.

2 Member Governments are invited to apply the annexed Guidelines when approving helicopter facility foam fire-fighting appliances in accordance with SOLAS regulation II-2/18, the 2009 MODU Code and the Recommendation on helicopter landing areas on ro-ro passenger ships (MSC/Circ.895) on or after 21 May 2013 and bring them to the attention of ship designers, shipowners, equipment manufacturers, test laboratories and other parties concerned.

ANNEX

GUIDELINES FOR THE APPROVAL OF HELICOPTER FACILITY FOAM FIRE-FIGHTING APPLIANCES

1 Application

These Guidelines apply to foam fire-fighting appliances for the protection of helicopter facilities in accordance with SOLAS regulations II-2/18.5.1.3 to 5.1.5, chapter 9 of the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code) and the Recommendation on helicopter landing areas on ro-ro passenger ships (MSC/Circ.895).

2 Definitions

2.1 *D-value* means the largest dimension of the helicopter used for assessment of the helideck when its rotors are turning. It establishes the required area of foam application.

2.2 *Deck integrated foam nozzles* are foam nozzles recessed into or edge mounted on the helideck.

2.3 *Foam-making branch pipes* are air-aspirating nozzles in tube shape for producing and discharging foam, usually in straight stream only.

2.4 *Helicopter landing area* is an area on a ship designated for occasional or emergency landing of helicopters, for example as referred to in SOLAS regulation II-2/18.2.2 and not designed for routine helicopter operations.

2.5 *Helideck* is a purpose-built helicopter landing platform or other deck area including all structure, fire-fighting appliances and other equipment necessary for the safe operation of helicopters, as referred to in SOLAS regulations II-2/3.26 and 18.5 and the 2009 MODU Code (chapter 1, paragraph 1.3.27).

2.6 *Hose reel foam station* is a hose reel fitted with a foam-making branch pipe and non-collapsible hose, together with fixed foam proportioner and fixed foam concentrate tank, mounted on a common frame.

2.7 *Monitor foam station* is a foam monitor, either self-inducing, or together with separate fixed foam proportioner, and fixed foam concentrate tank, mounted on a common frame.

2.8 *Obstacle free sector* is the take-off and approach sector which totally encompasses the safe landing area and extends over a sector of at least 210°, within which only specified obstacles are permitted.

2.9 *Limited obstacle sector* is a 150° sector outside the take-off and approach sector that extends outward from a helideck where objects of limited height are permitted.

2.10 *Winching area* is a pick-up area provided for the transfer by helicopter of personnel or stores to or from the ship, while the helicopter hovers above the deck, for example as referred to in SOLAS regulation III/28.

3 Principal requirements for the system

3.1 The system should be capable of manual release, and may be arranged for automatic release.

3.2 For helidecks the foam system should contain at least two fixed foam monitors or deck integrated foam nozzles. In addition, at least two hose reels fitted with a foam-making branch pipe and non-collapsible hose sufficient to reach any part of the helideck should be provided. The minimum foam system discharge rate should be determined by multiplying the D-value area by 6 l/min/m². The minimum foam system discharge rate for deck integrated foam nozzle systems should be determined by multiplying the overall helideck area by 6 l/min/m². Each monitor should be capable of supplying at least 50 per cent of the minimum foam system discharge rate, but not less than 500 l/min. The minimum discharge rate of each hose reel should be at least 400 l/min. The quantity of foam concentrate should be adequate to allow operation of all connected discharge devices for at least 5 min.

3.3 Where foam monitors are installed, the distance from the monitor to the farthest extremity of the protected area should be not more than 75 per cent of the monitor throw in still air conditions.

3.4 For helicopter landing areas, at least two portable foam applicators or two hose reel foam stations should be provided, each capable of discharging a minimum foam solution discharge rate, in accordance with the following table.

Category	Helicopter overall length (D- value)	Minimum foam solution discharge rate (l/min)
H1	up to but not including 15 m	250
H2	from 15 m up to but not including 24 m	500
H3	from 24 m up to but not including 35 m	800

The quantity of foam concentrate should be adequate to allow operation of all connected discharge devices for at least 10 min. For tankers fitted with a deck foam system, the Administration may consider an alternative arrangement, taking into account the type of foam concentrate to be used.

3.5 Winching areas should comply with SOLAS regulation II-2/18.2.2.

3.6 Manual release stations capable of starting necessary pumps and opening required valves, including the fire main system, if used for water supply, should be located at each monitor and hose reel. In addition, a central manual release station should be provided at a protected location. The foam system should be designed to discharge foam with nominal flow and at design pressure from any connected discharge devices within 30 s of activation.

3.7 Activation of any manual release station should initiate the flow of foam solution to all connected hose reels, monitors, and deck integrated foam nozzles.

3.8 The system and its components should be designed to withstand ambient temperature changes, vibration, humidity, shock impact and corrosion normally encountered on the open deck, and should be manufactured and tested to the satisfaction of the Administration.

3.9 A minimum nozzle throw of at least 15 m should be provided with all hose reels and monitors discharging foam simultaneously. The discharge pressure, flow rate, and discharge pattern of deck integrated foam nozzles should be to the satisfaction of the Administration, based on tests that demonstrate the nozzle's capability to extinguish fires involving the largest size helicopter for which the helideck is designed.

3.10 Monitors, foam-making branch pipes, deck integrated foam nozzles and couplings should be constructed of brass, bronze or stainless steel. Piping, fittings and related components, except gaskets, should be designed to withstand 925°C.

3.11 The foam concentrate should be demonstrated effective for extinguishing aviation fuel spill fires and should conform to performance standards not inferior to those acceptable to the Organization*. Where the foam storage tank is on the exposed deck, freeze protected foam concentrates should be used, if appropriate, for the area of operation.

3.12 Any equipment installed within the take-off and approach obstacle free sector should not exceed a height of 0.25 m. Any equipment installed in the limited obstacle sector should not exceed the height permitted for objects in this area.

3.13 All manual release stations, monitor foam stations, hose reel foam stations, hose reels and monitors should be provided with a means of access that does not require travel across the helideck or helicopter landing area.

3.14 Oscillating monitors, if used, should be preset to discharge foam in a spray pattern and have a means of disengaging the oscillating mechanism to allow rapid conversion to manual operation.

3.15 If a foam monitor with flow rate up to 1,000 //min is installed, it should be equipped with an air-aspirating nozzle. If a deck integrated nozzle system is installed, then the additionally installed hose reel should be equipped with an air-aspirating handline nozzles (foam branch pipes). Use of non air-aspirating foam nozzles (on both: monitors and the additional hose reel) is permitted only where foam monitors with a flow rate above 1,000 //min are installed. If only portable foam applicators or hose reel stations are provided, these should be equipped with an air-aspirating handline nozzles (foam branchpipes).

* Refer to the International Civil Aviation Organization Airport Services Manual, part 1, Rescue and Fire-Fighting, chapter 8, Extinguishing Agent Characteristics, paragraph 8.1.5, foam Specifications table 8-1, level "B", or to the Revised Guidelines for the performance and testing criteria, and surveys of foam concentrates for fixed fire-extinguishing systems (MSC.1/Circ.1312).