

GUIDELINES FOR THE PREPARATION OF INFORMATION ON THE EFFECT OF FLOODING TO BE PROVIDED TO MASTERS OF DRY CARGO SHIPS

ANNEX

1 The information provided on the effect of flooding, together with the damage control plan (resolution A.515(13), regulation II-1/23-1 of the 1974 SOLAS Convention, as amended) and any associated booklet, intends to assist the master in exercising his judgement in cases of serious flooding of the ship. It is not meant to replace his judgement, but to make him aware of the capabilities of the ship.

2 Cases to be investigated and provided in this information should at least include the flooding of the machinery space and each cargo compartment individually. The cases to be investigated for cargo ships with unusual compartmentation may require special consideration.

3 For these investigations the ship should be considered, before flooding, as floating on an even keel at least for two separate draughts, one of which is to include the summer load line draught. The centre of gravity of the ship (KG) should be taken either from intact stability information or should correspond to the assumed load condition.

4 When considering flooding of the machinery space, a permeability of 0.85 should be used. For flooding of cargo compartments a range of anticipated permeabilities should be applied. These permeabilities need not be lower than 0.60 nor be greater than 0.95.

5 The results of these flooding investigations should be presented in a concise, easily assimilated form for each condition. Critical factors could be presented in tabular format. A description of the assumptions made in compiling the information should also be given.

Guide:

When the Secretariat issued this Circular, the following introductory notes were made :

GUIDELINES FOR THE PREPARATION OF INFORMATION ON THE EFFECT OF FLOODING TO BE PROVIDED TO MASTERS OF DRY CARGO SHIPS

1 The Maritime Safety Committee at its fifty-second session approved the guidelines for the preparation of information on the effect of flooding to be provided to masters of new dry cargo ships as set out in the annex.

2 The guidelines are intended for the use of administrations to the extent they consider necessary.

Circular issued by IMO following meetings of the Maritime Safety Committee.

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GUIDELINES FOR DAMAGE CONTROL PLANS

1 The Maritime Safety Committee, at its seventy-first session (19 to 28 May 1999), noted that damage control plans and damage control booklet are intended to provide ship's officers with clear information on the ship's watertight compartmentation and equipment related to maintaining the boundaries and effectiveness of the compartmentation so that, in the event of damage to the ship, proper precautions can be taken to prevent progressive flooding through opening therein and effective action can be taken to quickly mitigate and, where possible, recover the ship's loss of stability.

2 With a view to providing Administrations with advice on the preparation of damage control plans for passenger and cargo ships in order that shipmasters can be assisted in their decisions when addressing situations caused by damage to ships, the Committee approved the Guidelines for damage control plans set out in the annex.

3 Member Governments are invited to use the annexed Guidelines when applying provisions of SOLAS regulations II-1/23, II-1/23-1 and II-1/25-8 and to bring the aforementioned Guidelines to the attention of all parties concerned, in particular shipbuilders, shipmasters, shipowners, ship operators and shipping companies.

ANNEX

GUIDELINES FOR DAMAGE CONTROL PLANS

1 Application

These guidelines are intended as advice on the preparation of damage control plans for passenger and cargo ships to which SOLAS regulations II-1/23, II-1/23-1 and II-1/25-8 apply.

2 General

2.1 The damage control plan and damage control booklet are intended to provide ship's officers with clear information on the ship's watertight compartmentation and equipment related to maintaining the boundaries and effectiveness of the compartmentation so that, in the event of damage to the ship causing flooding, proper precautions can be taken to prevent progressive flooding

through openings therein and effective action can be taken quickly to mitigate and, where possible, recover the ship's loss of stability.

2.2 The damage control plan and damage control booklet should be clear and easy to understand. It should not include information which is not directly relevant to damage control, and should be provided in the working language of the ship. If the languages used in the preparation of the plan and booklet are not one of the official languages of the SOLAS Convention, a translation into one of the official languages should be included.

3 Damage control plans

3.1 The damage control plan should be of a scale adequate to show clearly the required content of the plan, but not less than a 1:200 scale.

3.2 Isometric drawings are recommended for special purposes. The plan should include inboard profile, plan views of each deck and transverse sections to the extent necessary to show the following:

- .1 the watertight boundaries of the ship;
- .2 the locations and arrangements of cross-flooding systems, blow-out plugs and any mechanical means to correct list due to flooding, together with the locations of all valves and remote controls, if any;
- .3 the locations of all internal watertight closing appliances including on ro-ro ships, internal ramps or doors acting as extension of the collision bulkhead and their controls and the locations of their local and remote controls, position indicators and alarms. The locations of those watertight closing appliances which are not allowed to be opened during the navigation and of those watertight closing appliances which are allowed to be opened during navigation, according to SOLAS regulation II-1/15, should be clearly indicated;
- .4 the locations of all doors in the shell of the ship, position indicators, leakage detection and surveillance devices;
- .5 the locations of all weathertight closing appliances in local subdivision boundaries above the bulkhead deck and on the lowest exposed weather decks, together with locations of controls and position indicators, if applicable;
- .6 the locations of all bilge and ballast pumps, their control positions and associated valves; and
- .7 pipes, ducts or tunnels, if any, through which limited progressive flooding has been

accepted by the Administration.

4 Damage control booklets

4.1 The information listed in section 3 should be repeated in the damage control booklet.

4.2 The damage control booklet should include general instructions for controlling the effects of damage, such as:

- .1 immediately closing all watertight and weathertight closing appliances;
- .2 establishing the locations and safety of persons on board, sounding tanks and compartments to ascertain the extent of damage and repeated soundings to determine rates of flooding; and
- .3 cautionary advice regarding the cause of any list and of liquid transfer operations to lessen list or trim, and the resulting effects of creating additional free surfaces and of initiating pumping operations to control the ingress of water.

4.3 The booklet should contain additional details to the information shown on the damage control plan, such as the locations of all sounding devices, tank vents and overflows which do not extend above the weather deck, pump capacities, piping diagrams, instructions for operating cross-flooding systems, means of accessing and escaping from watertight compartments below the bulkhead deck for use by damage control parties, and alerting ship management and other organizations to stand by and to co-ordinate assistance, if required.

4.4 If applicable to the ship, locations of non-watertight openings with non-automatic closing devices through which progressive flooding might occur should be indicated as well as guidance on the possibility of non-structural bulkheads and doors or other obstructions retarding the flow of entering seawater to cause at least temporary conditions of unsymmetrical flooding.

4.5 If the results of the subdivision and damage stability analyses are included, additional guidance should be provided to ensure that the ship's officers referring to that information are aware that the results are included only to assist them in estimating the ship's relative survivability.

4.6 The guidance should identify criteria on which the analyses were based and clearly indicate that the initial conditions of the ship's loading extents and locations of damage, permeabilities, assumed for the analyses may have no correlation with the actual damaged condition of the ship.

5 Use of on-board computers

Damage control plans and damage control booklets should be in printed form. The use of on-board computers, with damage stability software developed for the specific ship, and familiar to properly trained ship's officers can provide a rapid means to supplement the information in the planned booklet for effective damage control.

* Refer to the Guidelines for the on-board use and application of computers (MSC/Circ.891).

6 Visual guidance to the master

Simple, clear and concise guidance, such as damage consequence diagrams, can provide the master with a rapid means to evaluate the consequence of damage to the ship.

7 Placement on board the ship

7.1 For passenger ships, the damage control plan should be permanently exhibited on the navigation bridge, as well as in the ship's control station, or equivalent.

7.2 For cargo ships, the damage control plan should be permanently exhibited or readily available on the navigation bridge. Furthermore, the damage control plan should be permanently exhibited or readily available in the cargo control room.

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