
STATUTORY INSTRUMENTS

1998 No. 2515

**The Merchant Shipping (Passenger Ship Construction:
Ships of Classes III to VI(A)) Regulations 1998**

PART V

STABILITY, SURVIVABILITY AND SHIPSIDE MARKINGS

Intact stability standard

30. After correcting for the effect of free surface of liquids in tanks every subdivided ship shall, in all probable loading conditions, satisfy the stability criteria set out in Schedule 1 in Merchant Shipping Notice MSN 1699(M).

Inclining and stability information

31.—(1) Every subdivided ship on completion shall be inclined and the elements of her stability determined and every other ship shall undergo the heeling test or buoyancy test specified in Sections 3 and 4 of Schedule 2 in Merchant Shipping Notice MSN 1699(M) respectively. The master shall be supplied by the owner with approved information relating to the stability of the ship in accordance with the following provisions of this regulation.

- (i) In each period of five years every subdivided ship shall have a lightweight survey, to verify any changes in lightship displacement and longitudinal centre of gravity; and every other ship shall undergo the heeling test or buoyancy tests specified in Sections 3 and 4 of Schedule 2 in Merchant Shipping Notice MSN 1699(M) respectively, to verify any changes in the heeling or buoyancy characteristics.
- (ii) Such periods shall commence on the date of issue of either a Passenger Certificate or from a previous inclining or lightweight survey, whichever date is earliest.
- (iii) The ship shall be re-inclined whenever, in comparison with the ship's approved stability information derived from the previous inclining experiment, a deviation from the lightship displacement exceeding 2 per cent or a deviation of the longitudinal centre of gravity exceeding 1 per cent of the ship's length is found or anticipated.
- (iv) Every inclining or lightweight survey or tests made for this purpose or for the purpose of this regulation shall be carried out in the presence of a nominated surveyor.
- (v) The interval between the lightweight surveys or tests of any such ship may be extended for a period of not more than one year if, on the production of relevant information about the ship, it can be shown that the lightweight survey or test is not necessary at the required interval.

(3) An approved report of each inclining or lightweight survey or test carried out in accordance with this regulation and of the calculation therefrom of the lightship condition, or heeling or buoyancy particulars, as applicable, shall be placed on board for the use of the master.

(4) Where elements of a ship's stability have been found to have changed following any inclining or lightweight survey or test carried out in accordance with the requirements of paragraph (3), the master shall be supplied with amended approved stability information.

(5) Where any alterations are made to a ship so as materially to affect the stability information supplied to the master amended stability information shall be provided and the ship shall be re-inclined.

(6) For subdivided ships stability information provided pursuant to paragraphs (1), (3), (4) and (5) shall be furnished in the form of a book (the stability information book) which shall be kept on board the ship at all times in the custody of the master. The information shall include particulars appropriate to the ship and shall be in a form acceptable to the certifying authority.

(7) Ships required to comply with the heeling test or buoyancy test specified in Sections 3 and 4 of Schedule 2 in Merchant Shipping Notice MSN 1699(M) shall be furnished with stability information in the form of a written record setting out the principal particulars.

Standard of survivability

32.—(1) Every ship shall comply with the appropriate standard of survivability in accordance with column 4 of either Table 1 or Table 2 (as appropriate) in Schedule 2 in Merchant Shipping Notice MSN 1699(M) as determined by the description of ships given in columns 1 to 3 of the Tables.

(2) Every subdivided ship shall be subdivided by bulkheads, which shall be watertight up to the bulkhead deck, into compartments the maximum length of which shall be calculated in accordance with section 2 of Schedule 2 in Merchant Shipping Notice MSN 1699(M). Every other portion of the internal structure which affects the efficiency of the subdivision of the ship shall be watertight, and shall be of a design which will maintain the integrity of the subdivision.

Stability in the damaged condition

33.—(1) This regulation applies to all subdivided ships constructed before 29th April 1990.

- (a) (i) In addition to the requirements of regulation 30 every ship shall be so constructed as to provide sufficient intact stability in all service conditions to enable the ship to withstand the flooding of any one of the main compartments into which the ship is subdivided in accordance with the requirements of regulation 32.
- (ii) If two of the main compartments, being adjacent to each other, are separated by a bulkhead which is stepped under the conditions of paragraph 4(3)(a) of Section 2 of Schedule 2 in Merchant Shipping Notice MSN 1699(M), the intact stability shall be adequate to withstand the flooding of those two adjacent main compartments.
- (b) Where in any ship in relation to which the factor of subdivision required by regulation 32 is 0.50, the intact stability shall be adequate to withstand the flooding of any two adjacent main compartments.
- (a) (3) (a) For the purposes of this regulation the sufficiency of the intact stability shall be determined in accordance with the provisions of sections 1 and 2 in Schedule 3 in Merchant Shipping Notice MSN 1699(M).
- (b) (i) The intact stability of every ro-ro passenger ship shall be re-examined in accordance with the provisions of sections 2 or 3 of Schedule 3 as appropriate in Merchant Shipping Notice MSN 1699(M) in order to establish the sufficiency of positive stability provided as required by sub-paragraphs (2)(a) and (3)(a) whenever considered necessary in connection with amended stability information prepared in accordance with regulation 31(4) and (5).
- (ii) Such re-examinations shall demonstrate that at all stages of flooding there is sufficient positive residual stability after the assumed damage prescribed in section 1 of Schedule 3 in Merchant Shipping Notice MSN 1699(M).
- (a) (i) Every ship shall be so constructed as to keep asymmetrical flooding, when the ship is in a damaged condition, at the minimum consistent with efficient arrangements.

- (ii) If cross-flooding fittings are provided in any such ship the fitting shall, where practicable, be self-acting but in any case where controls to cross-flooding fittings are provided, they shall be capable of being operated from an accessible position above the bulkhead deck.
 - (iii) Such fittings together with their controls as well as the maximum heel before equalisation shall be such as will not endanger the safety of the ship.
 - (iv) The cross-flooding fittings shall be capable of reducing the heel within 15 minutes sufficiently to meet the requirements of sub-paragraph 2(b)(iii) of sections 2 or 3 of Schedule 3 as appropriate in Merchant Shipping Notice MSN 1699(M).
- (b) If the margin line may become submerged during the flooding assumed for the purposes of the calculation referred to in Schedule 3 in Merchant Shipping Notice MSN 1699(M), the construction of the ship shall be such as will enable the master of the ship to ensure—
- (i) that the maximum angle of heel during any stage of such flooding will not be such as will endanger the safety of the ship; and
 - (ii) that the margin line will not be submerged in the final stage of flooding.

Requirements for subdivided ships constructed on or after 29th April 1990

- (5) Every ship shall comply with the provisions of paragraphs (1) to (4) except that—
- (a) for the purpose of paragraph (3)(a) the sufficiency of intact stability shall be calculated in accordance with section 1 and 3 of Schedule 3 in Merchant Shipping Notice MSN 1699(M); and
 - (b) the heel referred to in paragraph (4)(a) shall not exceed 15 degrees and the cross-flooding fittings shall be capable of meeting the requirements of section 3(2)(c) of Schedule 3 in Merchant Shipping Notice MSN 1699.

Loading and stability assessment of ro-ro passenger ships of Classes III, IV and V

- 34.—**(1) This regulation applies to ro-ro passenger ships of Classes III, IV and V.
- (a) (2) (a) The owner shall ensure that the master is provided with information relating to the ship's stability during the process of loading and unloading. This information shall be included in the ship's stability information.
 - (b) Where any alterations are made or changes occur to the ship so as materially to affect information supplied to the master in accordance with sub-paragraph (a), amended information shall be provided.
 - (c) The information provided pursuant to sub-paragraphs (a) and (b) shall be kept on board the ship at all times in the custody of the master.
- (3) The master shall use the information provided in accordance with paragraph (2) and, when necessary, make calculations or cause calculations to be made in order to ensure that during loading and unloading the ship has adequate stability and the freeboard at any door giving access to the hull or to an enclosed superstructure is sufficient to prevent the entry of water.
- (a) (4) (a) On completion of the loading and before it proceeds on a voyage the master or an officer appointed for the purpose shall ascertain—
 - (i) the ship's draught at the bow and at the stern;
 - (ii) the trim of the ship by the bow or the stern; and
 - (iii) the vertical distance from the waterline to the appropriate subdivision load line mark on each side of the ship.

- (b) The draughts, trim and the vertical distances ascertained in accordance with paragraph (a) shall be recorded in a book retained on board for that purpose.
- (5) Subject to paragraph (6), before proceeding on a voyage the master shall—
 - (a) cause the maximum permissible vertical position of the ship's centre of gravity relative to its keel (KG) or the minimum permissible transverse metacentric height (GM) whichever is appropriate to the ship, to be determined and recorded in a book retained on board for that purpose; and
 - (b) ensure that the condition of loading of the ship as recorded in accordance with sub-paragraph (5)(a) is within the permissible standard of stability determined in accordance with sub-paragraph (4)(b) and satisfies all the relevant requirements prescribed in the stability information book.
- (a) (6) (a) Where a ship regularly plies to and from the same place in conditions of loading which correspond closely to conditions of loading which are clearly specified in the stability information book and such specified conditions of loading allow a sufficient margin of stability beyond the minimum required for safety purposes to allow for small variations which might occur between a specified condition of loading and the actual loading of the ship, the Secretary of State may approve the conditions of loading so specified.
- (b) When conditions of loading have been approved in accordance with sub-paragraph (a) before the ship proceeds on a voyage the master shall—
 - (i) ensure that the actual condition of loading of the ship corresponds closely to one of the specified conditions of loading so approved; and
 - (ii) record the specified condition of loading so approved to which the actual condition corresponds, in a book specially retained on board for that purpose.
- (7) A copy of the information required by sub-paragraph (6)(b)(ii) shall be forwarded, as soon as is practicable, to a person nominated by the owner as being responsible and retained in his custody for a period of at least one calendar month.

Draught marks

35. Every subdivided ship shall have scale of draughts marked clearly at the bow and stern.

Subdivision load lines

36. Every subdivided ship shall be marked on its side amidships with the subdivision load lines assigned to it in accordance with Schedule 5 in Merchant Shipping Notice MSN 1699(M).

Freeboard marking

37. Passenger ships which are not required to be subdivided shall be marked on the side amidships with the freeboard assigned in accordance with paragraph 2 of Section 3 of Schedule 2 in Merchant Shipping Notice MSN (1699(M)). The mark shall consist of a horizontal line 25 millimetres in breadth and 300 millimetres in length. The colour and method of marking shall be in accordance with regulation 36.

Exhibition of damage control plans

38. In every subdivided ship there shall be permanently exhibited, for the information of the officer in charge of the ship, plans showing clearly for each level the boundaries of the watertight compartments, the openings therein, the means of closing such openings and the position of the controls and the arrangements for the correction of any list due to flooding. In addition, booklets

containing such information shall be made available by the owner for the use of the officers of the ship.

Sounding pipes

39. In every ship all tanks forming part of the structure of the ship and all watertight compartments, not being part of the machinery space, shall be provided with efficient sounding arrangements which shall be protected where necessary against damage.