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MSC.1/Circ.1416
13 June 2012

UNIFIED INTERPRETATION OF SOLAS REGULATIONS II-1/28 AND II-1/29

1 The Maritime Safety Committee, at its ninetieth session (16 to 25 May 2012), with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulations II-1/28 and II-1/29, and following a recommendation made by the Sub-Committee on Ship Design and Equipment at its fifty-fifth session, approved the annexed unified interpretations concerning the arrangements for steering capability and function on ships fitted with propulsion and steering systems other than traditional arrangements for a ship's directional control.

2 Member Governments are invited to use the annexed interpretations from 21 May 2012 when applying the relevant provisions of SOLAS regulations II-1/28 and II-1/29 and to bring them to the attention of all parties concerned.

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ANNEX

UNIFIED INTERPRETATIONS CONCERNING THE ARRANGEMENTS FOR STEERING CAPABILITY AND FUNCTION ON SHIPS FITTED WITH PROPULSION AND STEERING SYSTEMS OTHER THAN TRADITIONAL ARRANGEMENTS FOR A SHIP'S DIRECTIONAL CONTROL

INTRODUCTION

The SOLAS requirements for steering gears have been established for ships having a traditional propulsion system and one rudder. For ships fitted with alternative propulsion and steering arrangements, such as but not limited to, azimuthing propulsors or water jet propulsion systems, SOLAS regulations II-1/28.2, 28.3, 29.1, 29.2.1, 29.3, 29.4, 29.6.1 and 29.14 should be interpreted as follows, except 29.14, which is limited to the steering systems having a certain steering capability due to ship speed also in case propulsion power has failed.

REGULATION 28 – MEANS OF GOING ASTERN

Paragraph 2

The ability of the machinery to reverse the direction of thrust in sufficient time, and so to bring the ship to rest within a reasonable distance from maximum ahead service speed, should be demonstrated and recorded.

Paragraph 3

The stopping times, ship headings and distances recorded on trials, together with the results of trials to determine the ability of ships having multiple propulsion/steering arrangements to navigate and manoeuvre with one or more of these devices inoperative, should be available on board for the use of the master or designated personnel.

REGULATION 29 – STEERING GEAR

Paragraph 1

For a ship fitted with multiple steering systems, such as but not limited to azimuthing propulsors or water jet propulsion systems, the requirement in SOLAS regulation II-1/29.1 is considered satisfied if each of the steering systems is equipped with its own dedicated steering gear.

Paragraph 2.1

All components used in steering arrangements for ship directional control should be of sound reliable construction to the satisfaction of the classification society. Special consideration should be given to the suitability of any essential component which is not duplicated. Any such essential component should, where appropriate, utilize anti-friction bearings such as ball bearings, roller bearings or sleeve bearings which should be permanently lubricated or provided with lubrication fittings.

Paragraph 3

The main steering arrangements for ship directional control should be:

.1 of adequate strength and capable of steering the ship at maximum ahead service speed which should be demonstrated;

.2 capable of changing direction of the ship's directional control system from one side to the other at declared steering angle limits at an average rotational speed of not less than 2.3°/s with the ship running ahead at maximum ahead service speed;

.3 for all ships, operated by power; and

.4 so designed that they will not be damaged at maximum astern speed.

Definition: *Declared steering angle limits* are the operational limits in terms of maximum steering angle, or equivalent, according to manufacturers guidelines for safe operation, also taking into account the ship's speed or propeller torque/speed or other limitation; the "declared steering angle limits" are to be declared by the directional control system manufacturer for each ship specific non-traditional steering mean; ship's manoeuvrability tests, such as those in the Standards for ship manoeuvrability (resolution MSC.137(76)) should be carried out with steering angles not exceeding the declared steering angle limits.

Paragraph 4

The auxiliary steering arrangements for ship directional control should be:

.1 of adequate strength and capable of steering the ship at navigable speed and of being brought speedily into action in an emergency;

.2 capable of changing direction of the ship's directional control system from one side to the other at declared steering angle limits at an average rotational speed, of not less than 0.5°/s; with the ship running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater; and

.3 for all ships, operated by power where necessary to meet the requirements of 29.4.2 and in any ship having power of more than 2,500 kW propulsion power per thruster unit.

The definition of "declared steering angle limits", given under the interpretation of paragraph 3 above, applies.

Paragraph 6.1

In a ship fitted with multiple steering systems, such as but not limited to azimuthing propulsors or water jet propulsion systems, an auxiliary steering gear need not be fitted, provided that:

.1 in a passenger ship, each of the steering systems is fitted with two or more identical power units, capable of satisfying the requirements in regulation 29.3.2 while anyone of the power units is out of operation;

.2 in a cargo ship, each of the steering systems is fitted with one or more identical power units, capable of satisfying the requirements in regulation 29.3.2 while operating with all power units;

.3 each of the steering systems is arranged so that after a single failure in its piping or in one of the power units, ship steering capability (but not individual steering system operation) can be maintained or speedily regained (e.g. by the possibility of positioning the failed steering system in a neutral position in an emergency, if needed).

Definition: *Steering gear power unit* – For the purposes of alternative steering arrangements, the steering gear power unit should be considered as defined in SOLAS regulation II-1/3. For electric steering gears, refer to SOLAS regulation II-1/3; electric steering motors should be considered as part of the power unit and actuator.

Paragraph 14

This interpretation is valid for steering systems having a certain proven steering capability due to ship speed also in case propulsion power has failed.

Where the propulsion power exceeds 2,500 kW per thruster unit, an alternative power supply, sufficient at least to supply the steering arrangements which complies with the requirements of paragraph 4.2 and also its associated control system and the steering system response indicator, should be provided automatically, within 45 s, either from the emergency source of electrical power or from an independent source of power located in the steering gear compartment. This independent source of power should be used only for this purpose. In every ship of 10,000 gross tonnage and upwards, the alternative power supply should have a capacity for at least 30 min of continuous operation and in any other ship for at least 10 min.