

Subject

Steering gear test with the vessel not at the deepest seagoing draught

ClassNK

Technical Information

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To whom it may concern

IACS Unified Interpretation SC 246 for SOLAS II-1/Regulation 29 is applied to ships contracted for construction on or after 1 July 2012. According to the unified interpretation, when trials are conducted with the vessel not at the deepest seagoing draught, the loading condition may be accepted on either one of the following conditions unless any specific instruction is provided by the flag administration (*).

- (a) Trial is conducted on the condition that the rudder is fully submerged (at zero speed waterline) and the vessel is in an acceptable trim condition.
- (b) Trial is conducted at its as deep draft condition as practicable, provided that the rudder load and torque at the trial loading condition have been reliably predicted and extrapolated to the full load condition.

In order to confirm that "the rudder load and torque at the trial loading condition have been reliably predicted and extrapolated to the full load condition." mentioned in the above (b), please send the following information to ClassNK service site. The surveyor will confirm it from the trial draft condition, measured hydraulic oil pressure and speed during the trial as well as the information in the drawing of steering gear and the drawing of rudder.

- i) Planned trial draft condition
- ii) Rudder immersion area on the planned draft condition
- iii) Prospected trial speed

A project team of IACS Machinery Panel has been launched and a unified method that "the rudder load and torque at the trial loading condition is reliably predicted and extrapolated to the full load condition." is under development. The unified method, if it is decided, will be informed.

(*) So far we had an instruction from Republic of the Marshall Islands. When trials are conducted with the vessel flying Republic of the Marshall Islands' flag not at the deepest seagoing draught, a document to predict the steering capability at the full load condition shall be submitted for the attending surveyor to confirm the document and send it to Republic of the Marshall Islands. The way to predict the steering capability is not specifically instructed by the Administration.

(To be continued)

NOTES:

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Attachment:

1. IACS UI SC246



SC 246 Steering gear test with the vessel not at the deepest seagoing draught

(June
2011)
(Corr.1
Dec
2011)

Regulations

1. SOLAS II-1/29.3:

The main steering gear and rudder stock shall be:

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

.2 capable of putting the rudder over from 35° on one side to 35° on the other side with the ship at its deepest seagoing draught and running ahead at maximum ahead service speed and, under the same conditions, from 35° on either side to 30° on the other side in not more than 28 s;

.3 operated by power where necessary to meet the requirements of paragraph 3.2 and in any case when the Administration requires a rudder stock of over 120 mm diameter in way of the tiller, excluding strengthening for navigation in ice; and

.4 so designed that they will not be damaged at maximum astern speed; however, this design requirement need not be proved by trials at maximum astern speed and maximum rudder angle.

2. SOLAS II-1/29.4:

The auxiliary steering gear shall 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 putting the rudder over from 15° on one side to 15° on the other side in not more than 60 s with the ship at its deepest seagoing draught and running ahead at one half of the maximum ahead service speed or 7 knots, whichever is the greater; and

.3 operated by power where necessary to meet the requirements of paragraph 4.2 and in any case when the Administration requires a rudder stock of over 230 mm diameter in way of the tiller, excluding strengthening for navigation in ice.

Note:

1. This UI is to be uniformly implemented by IACS Societies on ships contracted for construction (as defined in IACS PR29) on or after 1 July 2012.
2. The “contracted for construction” date means the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. For further details regarding the date of “contract for construction”, refer to IACS Procedural Requirement (PR) No. 29.

SC 246

(cont)

Interpretation

In order for ships to comply with the performance requirements stated in regulations 29.3.2 and 29.4.2 they are to have steering gear capable of meeting these performance requirements when at their deepest seagoing draught. In order to demonstrate this ability, the trials may be conducted in accordance with Section 6.1.5.1 of ISO 19019:2005 Sea-going vessels and marine technology – Instructions for planning, carrying out and reporting sea trials. On all occasions when trials are conducted with the vessel not at the deepest seagoing draught the loading condition can be accepted on the conditions that either the rudder is fully submerged (at zero speed waterline) and the vessel is in an acceptable trim condition, or the rudder load and torque at the trial loading condition have been reliably predicted and extrapolated to the full load condition, to the satisfaction of the Administration or Recognized Organization. In any case for the main steering gear trial, the speed of the ship corresponding to the number of maximum continuous revolution of main engine and maximum design pitch applies.



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