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UNIFIED INTERPRETATION TO PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT-RELATED CONVENTIONS

Timber deck cargo in the context of damage stability requirements

Submitted by IACS

SUMMARY

Executive summary:	This document provides the Sub-Committee with an updated version of the draft unified interpretation on the basis of MSC/Circ.998 (IACS UI SC161) and discusses the changes which have been made since the previous version
Strategic direction, if applicable:	6
Output:	6.1
Action to be taken:	Paragraph 7
Related documents:	None

Introduction

1 In 2001 the seventy-fourth session of the Maritime Safety Committee approved circular MSC/Circ.998, the annex of which contained a copy of IACS unified interpretation UI SC161. The interpretation contains references to the *Code of safe practice for ships carrying timber deck cargoes, 1991*, which was adopted by resolution A.715(17).

Discussion

2 IACS has reviewed its UI SC161 to take into account amendments to SOLAS, which have been adopted since 2001, and the revocation of resolution A.715(17) on the *Code of safe practice for ships carrying timber deck cargoes, 1991* (1991 Timber Code) by resolution A.1048(27) on the *Code of safe practice for ships carrying timber deck cargoes, 2011* (2011 TDC Code).

3 In order to take the additional buoyancy, which is provided by the timber stowed on deck, into consideration in the damage stability calculations, it needs to be stowed and secured securely.

4 IACS has noted that the provisions for uprights in the 1991 Timber Code were extensively updated in the 2011 TDC Code. The new provisions could have a significant impact on the deck loads when compared to uprights, which have been accepted previously. However, noting the development of the 2011 TDC Code, IACS has included a provision to meet the new upright requirements.

5 Also, IACS noted that the 2011 TDC Code has removed provisions for the extent of stowed timber. If the additional buoyancy from the timber is to be taken into consideration when calculating the damage stability, IACS is of the opinion that the timber should completely fill the deck to the extent practicable. It was noted that the extent given in the International Code on Intact Stability, 2008 (2008 IS Code) corresponded to the extent contained in the 1991 Timber Code and, rather than duplicate the text, a reference to the 2008 IS Code was made.

6 Following the review, IACS has further considered the annex of MSC/Circ.998 (and its UI SC161). As a result, a new version of the unified interpretation contained in the annex to this document is offered for consideration by the Sub-Committee.

Action requested of the Sub-Committee

7 The Sub-Committee is invited to consider the foregoing, the draft unified interpretation in the annex and to take action, as appropriate.

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ANNEX

DRAFT UNIFIED INTERPRETATION REGARDING TIMBER DECK CARGO IN THE CONTEXT OF DAMAGE STABILITY REQUIREMENTS

SOLAS regulation II-1/5-1 states:

"1 The master shall be supplied with such information to the satisfaction of the Administration as is necessary to enable him by rapid and simple processes to obtain accurate guidance as to the stability of the ship under varying conditions of service. A copy of the stability information shall be furnished to the Administration.

2 The information should include:

.1 curves or tables of minimum operational metacentric height (GM) and maximum permissible trim versus draught which assures compliance with the intact and damage stability requirements where applicable, alternatively corresponding curves or tables of the maximum allowable vertical centre of gravity (KG) and maximum permissible trim versus draught, or with the equivalents of either of these curves or tables;

.2 instructions concerning the operation of cross-flooding arrangements; and

.3 all other data and aids which might be necessary to maintain the required intact stability and stability after damage.

3 The intact and damage stability information required by regulation 5-1.2 shall be presented as consolidated data and encompass the full operating range of draught and trim. Applied trim values shall coincide in all stability information intended for use on board. Information not required for determination of stability and trim limits should be excluded from this information.

4 If the damage stability is calculated in accordance with regulation 6 to regulation 7-3 and, if applicable, with regulations 8 and 9.8, a stability limit curve is to be determined using linear interpolation between the minimum required GM assumed for each of the three draughts d_s, d_p and d_l. When additional subdivision indices are calculated for different trims, a single envelope curve based on the minimum values from these calculations shall be presented. When it is intended to develop curves of maximum permissible KG it shall be ensured that the resulting maximum KG curves correspond with a linear variation of GM.

5 As an alternative to a single envelope curve, the calculations for additional trims may be carried out with one common GM for all of the trims assumed at each subdivision draught. The lowest values of each partial index A_s, A_p and A_l across these trims shall then be used in the summation of the attained subdivision index A according to regulation 7.1. This will result in one GM limit curve based on the GM used at each draught. A trim limit diagram showing the assumed trim range shall be developed.

6 When curves or tables of minimum operational metacentric height (GM) or maximum allowable KG versus draught are not provided, the master shall ensure that the operating condition does not deviate from approved loading conditions, or verify by calculation that the stability requirements are satisfied for this loading condition."

Scope

The provisions given hereunder apply to ships that are subject to SOLAS chapter II-1, subdivision and damage stability calculations and engaged in carrying timber deck cargoes where the buoyancy of the timber deck cargo is taken into account in the damage stability calculations.

Definitions

The following definitions should apply for the purposes of this interpretation:

.1 *Timber* is used as a collective expression used for all types of wooden material covered by the *Code of safe practice for ships carrying timber deck cargoes, 2011* (resolution A.1048(27)), including both round and sawn wood but excluding wood pulp and similar cargo.

.2 *Timber deck cargo* means a cargo of timber carried on an uncovered part of a freeboard or superstructure deck.

.3 *Timber load line* means a special load line assigned to ships complying with certain conditions set out in the International Convention on Load Lines.

.4 *Deepest timber subdivision draught* is the waterline which corresponds to the timber summer draught to be assigned to the ship.

.5 *Partial timber subdivision draught* is the light service draught as defined in SOLAS regulation II-1/2.11 plus 60% of the difference between the light service draught and the deepest timber subdivision draught.

Interpretation

1 The ship should be supplied with comprehensive stability information which takes into account timber deck cargo. Such information shall enable the master to rapidly and simply obtain accurate guidance as to the stability of the ship under varying conditions of service and, as required in SOLAS regulation II-1/5-1, it shall include, among other damage stability-related issues, a curve of minimum operating metacentric height (*GM*) versus draught or maximum allowable vertical centre of gravity (*KG*) versus draught which covers the requirements of SOLAS regulation II-1/5-1.2.1.

2 To ensure that the buoyancy of the timber deck cargo can be justifiably credited in damage stability calculations, the integrity of the lashed timber deck cargo should comply with the following:

.1 the timber deck cargo should be stowed in accordance with the provisions of paragraph 2.9 of the *Code of safe practice for ships carrying timber deck cargoes, 2011* (resolution A.1048(27));

.2 the timber deck cargo should be secured by lashings and/or uprights; and

.3 lashings and uprights should comply with the provisions of paragraph 2.10 of the *Code of safe practice for ships carrying timber deck cargoes, 2011* (resolution A.1048(27)).

3 The height and extent of the timber deck cargo should be in accordance with paragraph 3.3.2 of chapter 3 of part A of the International Code on Intact Stability, 2008 and should be at least stowed to the standard height of one superstructure.

4 The permeability of the timber deck cargo should be not less than 25% of the volume occupied by the cargo up to one standard superstructure.

5 Unless instructed otherwise by the Administration, the stability information for ships with timber deck cargoes should be supplemented by additional curve(s) of limiting *GM* (or *KG*) covering the timber draught range.

6 The above-described curve(s) applicable for conditions with timber deck cargo should be developed as described in SOLAS regulation II-1/5-1.4, considering the timber deck cargo at the deepest timber subdivision draught and at the partial timber subdivision draught only.

7 The limiting GM should be varied linearly between the deepest timber subdivision draught, and between the partial timber subdivision draught and the light service draught, respectively. Where timber freeboards are not assigned, the deepest and partial draughts should relate to the summer load line.

8 When considering the vertical extent of damage, the upper deck may be regarded as a horizontal subdivision (in accordance with SOLAS regulation II-1/7-2.6.1). Thus, when calculating damage cases which are limited vertically to the upper deck with the corresponding v-factor, the timber deck cargo may be considered to remain buoyant with an assumed permeability of 0.25 at the deepest and partial draught. For damage extending above the upper deck the timber deck, cargo buoyancy in way of the damage zone should be ignored.

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