INTERNATIONAL MARITIME ORGANIZATION

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55th session
Agenda item 1

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DRAFT REPORT TO THE MARITIME SAFETY COMMITTEE

1 GENERAL

1.1 The Sub-Committee on Stability and Load Lines and on Fishing Vessels Safety (SLF) held its fifty-fifth session from 18 to 22 February 2013 under the chairmanship of Mr. K. Hunter (United Kingdom), who was unanimously elected as Chairman for 2013 at the opening of the session. The Vice-Chairman, Capt. N. Campbell (South Africa), who was unanimously elected as Vice-Chairman for 2013 at the opening of the session, was also present.

1.2 The session was attended by delegations from Member States and observers from international organizations and non-governmental organizations in consultative status as listed in document SLF 55/INF.1.

Opening address

1.3 The Assistant Secretary-General/Director of the Maritime Safety Division, on behalf of the Secretary-General, welcomed participants and delivered the opening address, the full text of which can be downloaded from the IMO website at the following link: http://www.imo.org/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetingsPages/Default.aspx.

Chairman's remarks

1.4 In responding, the Chairman thanked the Assistant Secretary-General for his words of guidance and encouragement and assured him that Secretary-General's advice and requests would be given every consideration in the deliberations of the Sub-Committee.

Adoption of the agenda and related matters

1.5 The Sub-Committee adopted the agenda (SLF 55/1) and agreed to be guided in its work, in general, by the annotations contained in document SLF 55/1/1. The agenda, as adopted, together with the list of documents considered under each agenda item, is set out in document SLF 55/INF.[…].

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by BLG 16, DE 56, STW 43, MSC 90, C 108, NAV 58, C 109 and MSC 91, as reported in documents SLF 55/2 and SLF 55/2/1 (Secretariat), including the outcome of BLG 17 as reported verbally by the Secretariat, and took them into account in its deliberations when dealing with the relevant agenda items.

2.2 The Sub-Committee further noted that MEPC 63 and MSC 90 had approved *revised Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies*, circulated as MSC-MEPC.1/Circ.4/Rev.2, and urged all parties concerned to strictly adhere to the revised Committees' Guidelines.

3 DEVELOPMENT OF SECOND GENERATION INTACT STABILITY CRITERIA

General

3.1 The Sub-Committee recalled that SLF 54 had re-established the Correspondence Group on Intact Stability (IS) (SLF 54/17, paragraph 3.21) to continue to work on the items contained in the updated plan of action for matters related to the second generation intact stability criteria (SLF 54/WP.3, annex 4) and instructed it to submit a report to SLF 55.

Report (part 2) of the working group established at SLF 54

3.2 The Sub-Committee considered part 2 of the report of the Working Group on Intact Stability established at SLF 54 (SLF 55/3, submitted by the Chairman of the group) and, having approved it in general, noted that the group's report had been considered in detail by

the IS Correspondence Group (SLF 55/3/1, SLF 55/3/1/Add.1 and SLF 55/INF.15) established at SLF 54.

Report of the correspondence group and related submissions

3.3 The Sub-Committee considered the report of the correspondence group (SLF 55/3/1, SLF 55/3/1/Add.1 and SLF 55/INF.15) and noted that the group had continued its work on the development of second generation intact stability criteria (SLF 55/3/1), including the collection of relevant technical information (SLF 55/INF.15) and had also, as instructed, considered other stability matters (SLF 55/3/1/Add.1), including guidance for ships carrying timber cargoes regarding the increased weight of ice, safety issues related to the very serious casualty on board the containership **Chicago**, and the possible effect of fire-fighting water on intact stability and on freeing port area requirements.

3.4 In the context of the above, the Sub-Committee considered the following documents:

.1 SLF 55/3/2 and SLF 55/INF.3 (China), presenting the sample verification for 52 ships, analysing the calculated results, and providing the proposal for the Level 1 vulnerability criteria according to the draft Level 1 vulnerability criteria on parametric roll, pure loss of stability and surf-riding/broaching proposed by SLF 54 and updated by the IS Correspondence Group. The complete result of the verification and analyses of data are contained in document SLF 55/INF.3. China notes that the results of the verification for the relevant Level 1 vulnerability criteria have a large variation in relation to types of ship, loading condition and wave steepness and suggests that an appropriate threshold be considered in accordance with the actual situation of the real ship's operation;

.2 SLF 55/3/3 (China), providing proposals for amendments to some requirements of the 2008 IS Code, based on the application of the Code and the development of criteria for certain types of ships (such as those identified in chapter 2 of part B of the Code), including ships for which compliance with requirements of paragraph 2.2.3 of part A of the Code may not be practicable;

.3 SLF 55/3/4 (China), commenting on the standard values and incident wave conditions in the criterion based on sample calculations of Level 2 criteria

of pure loss of stability for 22 ships with 32 load conditions, under different wave conditions proposed by IS Correspondence Group, and the rationality of the standard value in the draft criteria;

.4 SLF 55/3/5 (China), commenting on the standard values and incident wave conditions in the criterion based on sample calculations for Level 2 criteria of parametric rolling for 22 ships with 32 load conditions, under different wave conditions proposed by IS Correspondence Group, and the rationality of the standard value in the draft criteria;

.5 SLF 55/3/6 (China), providing the calculation of parametric rolling for three containerships, based on four calculation methods. According to the results, as set out in the annex, different calculation methods of roll moment of inertia have a significant effect on the assessment of criterion of parametric rolling. China is of the view that a harmonized calculation method for the roll moment of inertia of a containership in the parametric rolling criteria should be developed and proposes to adopt method D as an option for the approximate calculation method of roll moment of inertia for containerships;

.6 SLF 55/3/7 (Italy), commenting on the present status of development of SGISC and suggesting that, with regard to the application of the criteria, it is not necessary to go through all calculation levels, for each failure mode, before developing suitable operational guidance as an equivalent alternative risk control option; and that it is important to have a common understanding of "countermeasures", "operational guidance" and "operational limitations", in order to avoid possible misunderstandings;

.7 SLF 55/3/8 (United States), commenting on part II of the report of the correspondence group (SLF 55/3/1/Add.1) and, while agreeing in general with the IACS proposal set out in the annex to that document for a new formula for calculating the ice accretion weight and load cases, with sample calculation results, for timber deck carriers, suggesting that the proposal may be improved and simplified;

.8 SLF 55/3/9 (United States), commenting on part I of the report of the correspondence group (SLF 55/3/1 and SLF 55/INF.15, annex 24) on sample calculation of parametric roll vulnerability Level 1 using each of the

three reference wave options performed by IACS. The United States performed similar calculations which did not indicate possible vulnerability to parametric roll, and stresses the need to determine the reason why the results appear to contradict some of the outcomes reported by IACS;

.9 SLF 55/3/10 (Poland), commenting on the guidance for ships carrying timber deck cargoes regarding the increased weight of ice (SLF 55/3/1/Add.1), noting that paragraph 4.6 of the Code of Safe Practice for Ships Carrying Timber Deck Cargoes, 2011 (2011 TDC Code) refers to section 6.2 of the 2008 IS Code and suggests that requirements regarding icing should be identical to those for fishing vessels included in section 6.3.1 of the Code, which in the opinion of Poland is not a good solution, as there are important differences between ice accretion on fishing vessels and on ships carrying timber deck cargoes;

.10 SLF 55/3/11 (Italy and Japan), providing the report of a comparison study of the draft Level 2 vulnerability criteria for stability under dead ship condition, utilizing two different calculation methods of failure. Both methods are based on the calculation of total stability failure probability for a ship in irregular beam wind and waves on the basis of the same underlying 1-DOF model, but with slightly different calculation details;

.11 SLF 55/3/12 (Japan), commenting on draft Level 2 vulnerability criteria for broaching and advising that Japan executed sample calculations for quantifying the effect of different formulae on the surf-riding probability using the C11 class containership in the North Atlantic. The results of the comparison study clearly demonstrate that the effect of different formulae on surf-riding probability is negligibly small;

.12 SLF 55/3/13 (Japan), providing a response to comments on sample calculation results of draft vulnerability criteria for parametric rolling and pure loss of stability performed by Japan, using 19 ships under full load conditions and 16 ships under lightest conditions (SLF 55/INF.15, annex 20);

.13 SLF 55/3/14 (Japan), commenting on sample calculation results of draft Level 2 vulnerability criteria for pure loss of stability performed by the

United States, using 20 ships together with new criterion proposal to the correspondence group (SLF 55/INF.15, annex 22);

.14 SLF 55/3/15 (Poland), providing comments and proposals for a revision of the structure of the SGISC and further steps aiming at inclusion of future SGISC in part B of the 2008 IS Code, stating that in their opinion, considering the present status of Levels 1 and 2 criteria, it would be premature to include the criteria in part B of the Code;

.15 SLF 55/3/16 (Japan), providing additional comments on the direct stability assessment procedures submitted by the United States (SLF 55/INF.15, annex 32) and stating that, while direct stability assessment would not be frequently used in the future, due to the cost and time involved, it would be indispensable for developing innovative new ships; and that, therefore, direct stability assessment procedures should be ready for practical use when the vulnerability criteria are adopted;

.16 SLF 55/INF.5 (Germany), presenting sample calculations for Levels 1 and 2 vulnerability criteria for the failure modes "pure loss of stability" and "parametric roll" for passenger ships, including a comparison with some cargo ships; and

.17 SLF 55/INF.14 (IACS), containing information on the verification of the draft Levels 1 and 2 vulnerability criteria for parametric rolling and pure loss of stability utilizing a direct stability assessment procedure, with the results verifying the consistency of each tier in the SGISC.

3.5 In considering the report of the IS Correspondence Group and the above related documents, the Sub-Committee noted, in particular, the following views:

.1 with respect to the wave spectra and the boundary limits proposed for parametric roll and excessive accelerations, concerns were raised regarding the consequences of the calculations for relatively small general cargo ships and it was noted that such ships were hardly represented in the sample calculations considered by the correspondence group;

.2 further sample calculations for other ship types should be performed in the intersessional period;

.3 ice accretion criteria should be further developed, based on document SLF 55/3/8 and taking into account document SLF 55/3/10;

.4 suitable operational limitations should be discussed as a matter of priority before embarking on the direct assessment;

.5 the proposals for amendments to some requirements of the 2008 IS Code, based on the application of the Code and the development of criteria for certain types of ships (SLF 55/3/3) is outside of the scope of this output;

.6 concerns were expressed with regard to the long period of time that this output has been on the agenda of the Sub-Committee and the complexity of the issues involved; and

.7 an expansion of this output, as proposed in document SLF 55/3/15, was not appropriate and a final completion year for the output should be set.

3.6 Having considered the views expressed, the Sub-Committee agreed as follows:

.1 the proposals in document SLF 55/3/3 were outside the scope of the agenda item and would therefore not be considered;

.2 ice accretion issues should be further discussed, based on document SLF 55/3/8, and operational criteria should be developed as a matter of priority; and

.3 the completion of the current work is a priority, therefore, proposals for expanding the work (SLF 55/3/15) should not be further considered.

Review of action plan for intact stability work

3.7 The Sub-Committee further instructed the IS Working Group to review the plan of action for intact stability work (SLF 54/WP.3, annex 4) and prepare a revised plan, identifying priorities, time frames and objectives for the work to be accomplished.

Establishment of the IS Working Group

3.8 The Sub-Committee re-established the Intact Stability Working Group and instructed it, taking into account comments made and decisions taken in plenary, to:

.1 further develop the second generation intact stability criteria on the basis of the report of the correspondence group (SLF 55/3/1, SLF 55/3/1/Add.1 and

SLF 55/INF.15) and the second part of the report of the working group established at SLF 54 (SLF 55/3), taking into account documents SLF 55/3/2, SLF 55/3/4, SLF 55/3/5, SLF 55/3/6, SLF 55/3/7, SLF 55/3/8, SLF 55/3/9, SLF 55/3/10, SLF 55/3/11, SLF 55/3/12, SLF 55/3/13, SLF 55/3/14, SLF 55/3/15, SLF 55/INF.3, SLF 55/INF.5 and SLF 55/INF.14;

.2 review the plan of action contained in annex 4 to document SLF 54/WP.3, taking into account the progress made during the session, and prepare a revised plan, identifying the priorities, timeframes and objectives for the work to be accomplished;

.3 consider whether it is necessary to re-establish a correspondence group and, if so, prepare terms of reference for consideration by the Sub-Committee; and

.4 submit a written report (part 1), by Thursday, 21 February 2013, continue working through the week and submit part 2 of the report to SLF 56, as soon as possible after this session, so that it can be taken into account by the correspondence group, if established.

Report of the IS Working Group

3.9 Having considered the report of the working group (part 1) (SLF 55/WP.3), the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

4 DEVELOPMENT OF GUIDELINES ON SAFE RETURN TO PORT FOR PASSENGER SHIPS

General

4.1 The Sub-Committee recalled that SLF 54 re-established the SDS Correspondence Group with terms of reference as set out in paragraph 4.11 of document SLF 54/17, and instructed the group to submit a report to SLF 55.

Report of the correspondence group and related submissions

4.2 The Sub-Committee considered the report of the correspondence group (SLF 55/4) and noted the group's consideration of the development of guidelines for the approval of damage stability modules for safe return to port and also the proposed amendments to the *Recommendation on a standard method for evaluating cross-flooding arrangements* (resolution MSC.245(83)) (the Recommendation), as set out in the annex to the report. The Sub-Committee noted in particular the group's view that a significant number of decisions to be taken under the output on revision of SOLAS chapter II-1 subdivision and damage stability regulations (agenda item 8) will have an impact on issues to be resolved under this output.

4.3 In the context of the above, the Sub-Committee also considered the following documents:

.1 SLF 55/4/1 (Finland), containing findings, based on the research project FLOODSTAND (SLF 54/4), providing further background on the use of flow reduction (i.e. discharge) coefficient to model the losses in the flow through the cross-flooding device, and proposing modifications to the Recommendation;

.2 SLF 55/4/2 (Japan), presenting detailed technical background for the revised regression formulae for cross-flooding through a series of structural ducts with one and two manholes in the Recommendation; and

.3 SLF 55/4/3 (France), commenting on document SLF 55/4/1, and proposing amendments to paragraphs 2.4 and 2.5 of the Recommendation and clearer explanatory notes than the existing ones, with justifications for the notes based on the physical laws relating to the cross-flooding calculations.

4.4 In considering the report of the correspondence group and the above documents, the Sub-Committee noted, in particular, the following views:

.1 with regard to the handling of the "outlet" effect (SLF 55/4/1, paragraph 4), there was strong support for option 1;

.2 the revised regression formulae for cross-flooding (SLF 55/4/2) should be further considered by the SDS Working Group; and

.3 the Recommendation contains discrepancies in time to cross-flood, which should be solved as high-priority.

4.5 The Sub-Committee also noted the query in the report of the correspondence group (SLF 55/4, annex, Q6) regarding the application of the guidelines for the approval of damage stability modules for all types of ships, for which the opinion of the members of the group was fairly evenly divided. In this context, some delegations expressed the view that this output was on matters related to passenger ships, and should it be considered that these proposals be applied for other types of ships then this would necessarily be an expansion of the output, which would need suitable justification.

4.6 Subsequently, the Sub-Committee noted the views of a number of delegations that this output was dealing with two matters, namely, the development of guidelines for the approval of damage stability modules for safe return to port, solely for passenger ships; and proposed amendments to the *Recommendation on a standard method for evaluating cross-flooding arrangements* (resolution MSC.245(83)), for all types of ships. In light of the above, the Sub-Committee noted that there was no need for an expansion of this output.

Instructions to the SDS Working Group

4.7 Having considered the above views, the Sub-Committee instructed the SDS Working Group, established under agenda item 7 (Review of the damage stability regulations for ro-ro passenger ships), taking into account comments and decisions made in plenary, to:

.1 finalize the revision of the *Recommendation on a standard method for evaluating cross-flooding arrangements* (resolution MSC.245(83)), taking into account the report of the correspondence group (SLF 55/4) and documents SLF 55/4/1, SLF 55/4/2 and SLF 55/4/3; and

.2 further consider the development of guidelines for the approval of damage stability modules for safe return to port, taking into account the report of the correspondence group (SLF 55/4).

Report of the SDS Working Group

4.8 Having considered the part of the report of the SDS Working Group (SLF 55/WP.4) dealing with the agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

5 DEVELOPMENT OF GUIDELINES FOR VERIFICATION OF DAMAGE STABILITY REQUIREMENTS FOR TANKERS

General

5.1 The Sub-Committee recalled that SLF 54 had agreed, in principle, to draft Guidelines for verification of damage stability requirements for tankers (SLF 54/WP.4, annex 1), with a view to submission to the Committee for approval, together with draft amendments to IMO instruments regarding the mandatory carriage of stability instruments on board tankers, once those amendments have been finalized. In this context, the Sub-Committee noted that the aforementioned draft amendments will be considered under agenda item 6 (Development of mandatory carriage requirements for stability instruments on board tankers).

Damage stability verification for tankers with assigned freeboards less than summer load line

5.2 The Sub-Committee had for its consideration document SLF 55/5 (China, Germany, Italy, IACS), providing comments on the uniform application of damage stability verification for tankers with assigned freeboards less than summer load line, especially in relation to the required performance standards relating to the mandatory carriage of stability instruments on board tankers. The Sub-Committee noted the view of the co-sponsors that it is necessary to clarify whether damage stability verification is to be carried out up to draughts that exceed the summer load line (e.g. tropical freeboard draught) for ships to which a freeboard less than the summer freeboard is assigned.

5.3 Having considered the above document, the Sub-Committee noted that there were divergent views on the matter. Some delegations considered the proposals in document SLF 55/5 to be outside the scope of this output, as it concerned all ships and not solely tankers and, therefore, the matter should not be further considered. Other delegations were of the opinion that the document addressed very relevant safety concerns and that the matter was part of the on-going work.

5.4 Having clarified that any consideration of the proposals in document SLF 55/5 should not have an impact on the finalization of the on-going work regarding the carriage requirements for stability instruments on board tankers and the guidelines for verification of damage stability requirements for tankers, the Sub-Committee referred document SLF 55/5 to the drafting group and requested the group to identify possible issues concerning the proposals and advise the Sub-Committee accordingly.

Instructions to the drafting group

5.5 Having considered the above views, the Sub-Committee instructed the Drafting Group on Development of mandatory carriage requirements for stability instruments on board tankers, established under agenda item 6 (see paragraph 6.4), taking into account comments and decisions made in plenary, to:

.1 further consider the draft Guidelines for verification of damage stability requirements for tankers, based on the report of the working group established at SLF 54 (SLF 54/WP.4, annex 1), for possible consequential modifications which may arise in the context of the development of mandatory carriage requirements for stability instruments; and

.2 consider document SLF 55/5 with a view to identify possible substantial issues, and advise the Sub-Committee accordingly.

Report of the drafting group

5.6 Having considered the part of the report of the drafting group (SLF 55/WP.6) dealing with the agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

6 DEVELOPMENT OF MANDATORY CARRIAGE REQUIREMENTS FOR STABILITY INSTRUMENTS ON BOARD TANKERS

6.1 The Sub-Committee recalled that MSC 90 had considered a proposal by SLF 54 (SLF 54/17, annex 1) to expand the scope of the output on "Development of guidelines for verification of damage stability requirements for tankers" to include the development of mandatory carriage requirements for stability instruments on board tankers and extend the target completion year for this output to 2013, together with document MSC 90/13/3

(China, et al.), also addressing the issue. Consequently, MSC 90 included in the 2012-2013 biennial agenda of the SLF Sub-Committee and in the provisional agenda for SLF 55 an unplanned output on "Development of mandatory carriage requirements for stability instruments on board tankers" (target completion year 2013), to be developed as a single package together with the associated guidelines for verification of damage stability requirements for tankers, considered under agenda item 5.

6.2 The Sub-Committee had for its consideration the following documents:

.1 SLF 55/6 (United Kingdom), providing a detailed proposal for draft amendments to MARPOL Annex I (annex 1), the BCH Code (annex 2), the IBC Code (annex 3), the EGC Code (annex 4), the GC Code (annex 5), the IGC Code (annex 6) and the 2011 HSSC Guidelines (annex 7), to include mandatory carriage requirements for stability instruments on tankers, including oil tankers, chemical tankers and gas carriers;

.2 SLF 55/6/1 (United States), proposing amendments to MARPOL Annex I and the IBC and IGC Codes to introduce mandatory carriage requirements for stability instruments carried on board tankers; and

.3 MSC 90/13/3 (China, et al.), proposing amendments to MARPOL and the IBC and IGC Codes to ensure adequate provisions are made to enable ships' officers to verify that intact and damage stability requirements applicable to tankers are complied with in any service loading condition; and for Administrations to accept continued application of existing intact and damage stability verification measures where these are demonstrated to be of an acceptable standard.

6.3 In considering the above documents, and taking into account the views expressed, the Sub-Committee agreed as follows:

.1 the proposals contained in documents SLF 55/6 and SLF 55/6/1 are very similar and could be combined by a drafting group;

.2 Type 2 or Type 3 stability instruments are acceptable (SLF 55/6/1) in order to provide flexibility;

.3 an approved on board stability instrument would not replace the approved Stability Booklet;

.4 stability software should be approved, but the same should not apply to the hardware which could be covered by national standards;

.5 where vague expressions such as "acceptable standard" or "to the satisfaction of the Administration" were used, they should reference the *Guidelines for the approval of stability instruments* (MSC.1/Circ.1229);

.6 where reference was made to the first scheduled dry-docking after [date], this should instead refer to the renewal survey; and

.7 the word "[date]" should be replaced by the words "[date of entry into force]", and the words "after [date] but not later than [date]" should be replaced by the words "after [date of entry into force] but not later than [five years after the date of entry into force]", as appropriate.

Establishment of a drafting group

6.4 Following discussion, and recalling its relevant decision at SLF 54, the Sub-Committee established a Drafting Group on Development of Mandatory Carriage Requirements for Stability Instruments on board Tankers and instructed it, taking into account the comments made in plenary and based on the relevant annexes to document SLF 55/6, to finalize the draft amendments to:

.1 Annex I of the MARPOL Convention, taking into account documents MSC 90/13/3 and SLF 55/6/1;

.2 the Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH Code);

.3 the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code), taking into account documents MSC 90/13/3 and SLF 55/6/1;

.4 the Code for Existing Ships Carrying Liquefied Gases in Bulk (EGC Code);

.5 the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (GC Code);

.6 the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), taking into account documents MSC 90/13/3 and SLF 55/6/1; and

.7 the Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2011.

Report of the drafting group

6.5 Having considered the report of the drafting group (SLF 55/WP.6), the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

7 REVIEW OF DAMAGE STABILITY REGULATIONS FOR RO-RO PASSENGER SHIPS

General

7.1 The Sub-Committee recalled that SLF 54 re-established the SDS Correspondence Group with terms of reference as set out in paragraph 6.9 of document SLF 54/17 and had instructed the group to submit a report to this session.

Report of the correspondence group and related submissions

7.2 In considering the report of the correspondence group (SLF 55/7), the Sub-Committee noted that the work of the group relied on the findings of the EC research projects EMSA(2), GOALDS, RP625 and FLOODSTAND, however, due to time constraints, as some of the projects were not finalized until late in the second half of 2012, the group could not prepare concrete proposals related to damage stability regulations for ro-ro passenger ships. With regard to the development of a new SOLAS regulation II-1/7-2.5.2.3 concerning the s_i factor for ro-ro passenger ships, the Sub-Committee endorsed the group's recommendation that no further action should be taken and that the outcome of the research projects should be awaited before deciding on how best to allow for the water-on-deck issue probabilistically. The Sub-Committee also noted that the group could not reach consensus on matters related to potential inconsistency between SOLAS regulations II-1/13-1.4 and II-1/17-1.1.2 in which the former regulation requires watertight ramps in cargo ships whereas the latter only requires weathertight ramps in ro-ro passenger ships, and that the issue should be further considered at this session.

7.3 In this connection, the Sub-Committee considered the following documents:

.1 SLF 55/7/1 (Austria et al.), proposing changes to the s_i formulation to estimate the effect of water-on-deck when it occurs on ro-ro passenger

ships and proposing to discuss residual freeboard as an alternative in relation to the s_i formulation;

.2 SLF 55/7/2 (RINA), commenting on the report of the correspondence group (SLF 55/7), and presenting a review of the proposals contained in document SLF 53/10 on draft amendments to SOLAS regulations II-1/8 and II-1/9, in particular concerning the extension of the level of double bottom protection provided in regulation 9.9 for passenger ships with large lower holds (LLH) to cargo ships other than tankers with LLH;

.3 SLF 55/INF.6 (EC), providing information on a second study, commissioned by the European Maritime Safety Agency (EMSA), at the request of the European Commission, on the specific damage stability parameters of ro-ro passenger ships according to SOLAS 2009 amendments including water-on-deck calculation;

.4 SLF 55/INF.7 (Denmark and United Kingdom), providing information on the results of the "Goal-based Damage Stability" project (GOALDS) on derivation of updated probability distributions of collision and grounding damage characteristics for passenger ships. With regard to collision data, the non-negligible level of uncertainty in the statistical estimators due to the limited number of data, and the average quality of the database suggest that any modification of present SOLAS assumptions concerning the damage length is premature and not strongly supportable from the statistical point of view. With regard to grounding data, on the basis of the findings from the analyses carried out, the fully probabilistic approach to bottom damages for regulatory purposes is, at this stage, not possible; however, the deterministic approach could be more robust than the fully probabilistic approach and less affected by the problems identified in the analyses;

.5 SLF 55/INF.8 (Denmark and United Kingdom), providing information on the results of the GOALDS project on probability of survival (s_i factor) for passenger ships. The derived formulation, which is supported by findings, regarding the impact of water-on-deck on ship's damage stability, is simple, rational and calculable, consistent with the safe return to port philosophy and accounts for the ship scale. The new GOALDS s_i factor introduces

new ship design parameters when compared to SOLAS 2009 requirements;

.6 SLF 55/INF.9 (Denmark and United Kingdom), providing information on the results of the GOALDS project on the development of a new risk-based damage stability requirement for passenger ships based on cost-benefit assessment and concluding that potentially commercially viable passenger ships (of ro-pax and cruise type) could be built to a significantly higher Attained Index than set forth by current requirements;

.7 SLF 55/INF.10 (United Kingdom), presenting an approach for the evaluation of ro-ro damage stability, which includes consideration of the accumulation of water-on-deck and incorporates both stability and residual freeboard within the existing probabilistic damage stability framework; and

.8 SLF 55/INF.13 (Germany and CESA), presenting a concept for addressing water-on-deck for ro-ro passenger ships, developed by Germany based on experience gained in applying the provisions of SOLAS 2009, to be accounted for in the probabilistic damage stability requirements.

7.4 During its consideration of the report of the correspondence group and the above documents, the Sub-Committee noted the following views:

.1 this output has been on the agenda of the Sub-Committee for over three years, and considering the target completion year of 2013, this work should be finalized, based on the information received by the Sub-Committee at this session;

.2 with regard to the s_i formulation to estimate the effect of water-on-deck when it occurs on ro-ro passenger ships, there was some support for alternative 2 contained in paragraph 11 of document SLF 55/7/1 (Austria et al.);

.3 with regard to an approach for the evaluation of ro-ro passenger ship damage stability which includes the consideration of the accumulation of water-on-deck (SLF 55/INF.10), a minimum residual freeboard should be assigned; and

.4 the working group should further consider the technical aspects of the correspondence group report and the related documents (see paragraph 7.3).

Establishment of the SDS Working Group

7.5 Having noted the above views, and recalling its relevant decision at SLF 54, the Sub-Committee established the SDS Working Group and instructed it, taking into account the comments made in plenary, to:

.1 finalize the damage stability regulations for ro-ro passenger ships, taking into account the report of the correspondence group (SLF 55/7) and documents SLF 55/7/1, SLF 55/7/2, SLF 55/INF.6, SLF 55/INF.7, SLF 55/INF.8, SLF 55/INF.9, SLF 55/INF.10 and SLF 55/INF.13; and

.2 time permitting, further consider the potential inconsistency between SOLAS regulations II-1/13-1.4 and II-1/17-1.1.2 and advise the Sub-Committee as appropriate.

Report of the SDS Working Group

7.6 Having considered the part of the report of the SDS Working Group (SLF 55/WP.4) dealing with the agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

8 REVISION OF SOLAS CHAPTER II-1 SUBDIVISION AND DAMAGE STABILITY REGULATIONS

8.1 The Sub-Committee recalled that SLF 54 had re-established the SDS Correspondence Group with terms of reference as set out in paragraph 8.15 of document SLF 54/17 and had instructed the group to submit a report to this session.

Report (part 2) of the working group established at SLF 54

8.2 The Sub-Committee considered part 2 of the report of the SDS Working Group at SLF 54 (SLF 55/8) and, having approved it in general, noted that the group's report had been considered in detail by the SDS Correspondence Group (SLF 55/8/2 and Add.1) established at SLF 54.

Application of SOLAS subdivision standards to cargo ships which are complying with the subdivision standards of other IMO instruments

8.3 The Sub-Committee had for its consideration the following documents on matters related to SOLAS regulation II-1/4 regarding the applicability of subdivision and stability requirements in SOLAS, chapter II-1, parts B-1 to B-4:

.1 SLF 55/8/1 (Germany), providing proposed amendments to SOLAS regulation II-1/4 in order to clarify the application of SOLAS subdivision standards to cargo ships which are complying with the subdivision standards of other IMO instruments;

.2 SLF 55/8/6 (United States), commenting on document SLF 55/8/1 and the proposed amendments to SOLAS regulation II-1/4; expressing concern that the proposed text does not fully resolve the existing vagueness in SOLAS regulation II-1/4.1 regarding what is considered a "damage stability requirement" in parts B-1 to B-4; and agreeing with the suggestion to refer to the OSV Guidelines and the SPS Code in a footnote in order to accommodate their current non-mandatory status; and

.3 SLF 55/8/8 (Liberia and IADC), commenting on the amendments to SOLAS regulation II-1/4, in particular the proposal by Germany (SLF 55/8/1) and the report of the correspondence group (SLF 55/8/2 and Add.1) and, in agreeing that the MODU Code should be considered in its entirety as an equivalent standard to SOLAS as stipulated in the preamble of the Code, expressing concern that not including the MODU Code in the list of alternative damage stability standards could result in uncertainty regarding its application in the future.

8.4 In considering the above documents, the Sub-Committee noted that the majority of those who spoke supported the proposed amendments to SOLAS regulation II-1/4 contained in document SLF 55/8/6, and agreed that it should be used as the base document for the preparation of the draft amendments, with document SLF 55/8/1 also to be taken into account. With regard to the proposal in document SLF 55/8/8 to include the MODU Code as an alternative damage stability standard under the regulation, the Sub-Committee reiterated its decision at SLF 54 that the MODU Code should not be included (SLF 54/17, paragraph 13.7).

8.5 Subsequently, the Sub-Committee referred documents SLF 55/8/6 and SLF 55/8/1 to the SDS Working Group, for further consideration, with a view to finalization of the draft amendments to SOLAS regulation II-1/4 and the associated footnote in the context of the revision of SOLAS chapter II-1 subdivision and damage stability regulations.

Report of the correspondence group and related submissions

8.6 The Sub-Committee considered the report of the correspondence group (SLF 55/8/2 and Add.1) and, having approved it in general, noted that the group had progressed the work on the revision of SOLAS chapter II-1 subdivision and damage stability regulations and the associated Explanatory Notes considerably, as set out in the annexes to the report, but a vast amount of work still remained.

8.7 In this context, the Sub-Committee also considered the following documents:

.1 SLF 55/8/3 (Republic of Korea), providing proposals for the revision of the Explanatory Notes to regulation II-1/9 for cargo ships of less than 80 m in length, which did not gain sufficient support in the SDS Correspondence Group, amending only the Explanatory Notes according to the decision of SLF 54, in order to demonstrate a safety level satisfactory to the Administration;

.2 SLF 55/8/4 (United States), providing several proposals for amendments to SOLAS chapter II-1, in an effort to improve the regulations and also aid efficiency in finalizing the draft amendments at this session;

.3 SLF 55/8/5 (United States), commenting on passenger ship safety matters, in particular the current survivability level of passenger ships in the event of grounding, collision or flooding, pointing out that with the passenger ship safety initiative in 2000, the regulatory regime for the design, construction and operation of passenger ships shifted focus to prevention and the philosophy that the "ship is its own best lifeboat" and expressing the view that the survivability level reflected in the required subdivision index R merits further consideration in order to determine an appropriate level of safety; and

.4 SLF 55/8/7 (United States), commenting on the report of the correspondence group (SLF 55/8/2 and Add.1) regarding the application of amendments to SOLAS chapter II-1, pointing out that the scope of

application of amendments to SOLAS, particularly chapters II-2 and III, is currently under consideration by the Committee, and that MSC 91 agreed to establish a relevant Working Group during FSI 21. Since there is currently no specific guidance from that work that can be applied in the context of SOLAS chapter II-1, the United States recommended that this issue be considered in plenary so that appropriate guidance can be provided to the SDS Working Group when finalizing the draft amendments to SOLAS chapter II-1.

8.8 With regard to document SLF 55/INF.12 (Germany and Norway) on matters related to harmonizing distance criteria for gas fuel tanks and assumed penetration depth providing appropriate collision protection and damage stability, the Sub-Committee decided to consider the matter under the agenda item "Any other business" (see paragraph 16.[…]).

8.9 Following an in-depth discussion on the above documents, the Sub-Committee:

.1 having noted that the correspondence group had identified amendments already agreed at SLF 53 and SLF 54 for which no further action was considered necessary (SLF 55/8/2/Add.1, annex 2), agreed that these amendments be referred to MSC in due course for approval and subsequent adoption;

.2 did not support the proposal by the Republic of Korea (SLF 55/8/3) for the revision of the Explanatory Notes to regulation II-1/9 for cargo ships of less than 80 m in length, recalling that it had already been discussed at SLF 54;

.3 having noted the decision of MSC 91 (MSC 91/22, paragraphs 3.33 to 3.35) to establish an Ad Hoc Working Group on Application of Amendments to SOLAS and Related Codes, to meet during FSI 21, agreed that the working group should not have lengthy discussions on the scope of application of the draft amendments to SOLAS chapter II-1, pending any decisions of the Committee, but that the group should indicate whether amendments should apply to new ships only or also to existing ships; and

.4 with regard to the current survivability level of passenger ships in the event of grounding, collision or flooding (SLF 55/8/5), the majority of the delegations supported that the subdivision index R should be further considered in order to determine an appropriate level of safety.

Instructions to the SDS Working Group

8.10 In light of the above, the Sub-Committee instructed the SDS Working Group, established under agenda item 7 (see paragraph 7.5), taking into account the comments and decisions made in plenary, to:

.1 further develop the draft amendments to SOLAS chapter II-1 and the associated Explanatory Notes (resolution MSC.281(85)), based on part 2 of the report of the working group at SLF 54 (SLF 55/8) and the report of the correspondence group (SLF 55/8/2 and Add.1), taking into account documents SLF 55/8/4, SLF 55/8/5 and SLF 55/8/7; and

.2 prepare draft amendments to SOLAS regulation II-1/4, regarding the applicability of subdivision and stability requirements in SOLAS, chapter II-1, parts B-1 to B-4, based on document SLF 55/8/6, and taking into account document SLF 55/8/1.

Report of the SDS Working Group

8.11 Having considered the part of the report of the SDS Working Group (SLF 55/WP.4) dealing with the agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

9 DEVELOPMENT OF PROVISIONS TO ENSURE THE INTEGRITY AND UNIFORM IMPLEMENTATION OF THE 1969 TM CONVENTION

9.1 The Sub-Committee recalled that SLF 54 had established a correspondence group on the matter with terms of reference as set out in paragraph 9.8 of document SLF 54/17 and had instructed it to submit a report to this session.

Report of the correspondence group and related submissions

9.2 The Sub-Committee considered the report of the correspondence group (SLF 55/9 and SLF 55/INF.2) and, having approved it in general, noted that the group prepared a very detailed report, including draft unified interpretations to supersede those contained in TM.5/Circ.5 (SLF 55/9, annex 2); a draft Assembly resolution to replace the Application of recommendation 2 of the International Conference on Tonnage Measurement of Ships, 1969 (resolution A.758(18)) and the Application of the International Conference on Tonnage

Measurement of Ships, 1969, to existing ships (resolution A.791(19)) (SLF 55/9, annex 3); and a draft Assembly resolution on Reduced gross tonnage for crew and trainee accommodation spaces (SLF 55/INF.2, annex 5). The Sub-Committee agreed with the group's conclusions that:

.1 no further work is necessary to identify areas for improving the existing measurement system of the 1969 TM Convention;

.2 no amendments to the 1969 TM Convention are necessary or appropriate; and

.3 the draft unified interpretations and the draft Assembly resolution provided in annexes 2 and 3 of the group's report (SLF 55/9) should be further developed.

9.3 In this context, the Sub-Committee also considered the following documents:

.1 SLF 55/9/1 (Italy), commenting on the report of the correspondence group and suggesting solutions to ensure the integrity and uniform implementation of the 1969 TM Convention;

.2 SLF 55/9/2 (IACS), commenting on the report of the correspondence group and proposing solutions to issues related to rails and fashion plating for side openings;

.3 SLF 55/9/3 (Germany, India, United States and ITF), proposing further development and implementation of a reduced gross tonnage parameter for accommodation spaces that meet certain minimum requirements and, taking into account the insufficient support for the draft Assembly resolution on Reduced gross tonnage for crew and trainee accommodation spaces (SLF 55/INF.2, annex 5) prepared by the correspondence group, and that it lacked important specifics, proposing an amended draft Assembly resolution, drawing on elements of previous proposals in an effort to simplify the identification of eligible accommodation spaces and enhance the overall viability of the parameter;

.4 SLF 55/9/4 (United States), commenting on the report of the correspondence group, and, in particular, on the criterion for use of "existing" tonnage, concerning provisions of the TM Convention that allow

owners of qualifying existing ships to apply older tonnage breakpoints in international conventions using the ships' pre-existing national gross tonnages, often expressed in terms of gross register tons (GRT);

.5 SLF 55/9/5 (Japan), commenting on the report of the correspondence group, in particular on matters related to the fitting of grates over side/end openings and over deck openings; and

.6 SLF 55/INF.11 (IACS), providing nine explanatory diagrams for inclusion in the draft Unified Interpretations of the 1969 TM Convention, with the aim of further clarifying the interpretations.

9.4 In considering the report of the correspondence group and the above documents, the Sub-Committee noted the following views:

.1 with regard to the draft Assembly resolution on *Reduced gross tonnage for crew and trainee accommodation spaces* (SLF 55/INF.2, annex 5, and SLF 55/9/3), the following concerns were expressed:

.1 the Assembly resolution would not be of a mandatory character and many ports would not take into account recommendatory measures;

.2 the 1969 TM Convention, as a purely technical instrument, was not the appropriate instrument for consideration of this matter, which primarily addresses crew well-being;

.3 whilst there is a need to ensure adequate provisions for accommodation spaces, including accommodation for trainees and cadets, the size of the space may not be a criterion for quality;

.4 the draft resolution was considered to contain vague expressions, which needed to be addressed; and

.5 the 1969 TM Convention has no definition of "accommodation spaces"; and

.2 a specific quantitative criterion for "substantial" alterations would need to be included in the draft Unified interpretations; however, the working group should discuss the appropriate range for this criterion.

9.5 Subsequently, the Sub-Committee agreed to include in the draft Unified Interpretations of the 1969 TM Convention a specific quantitative criterion for "substantial" alterations (SLF 55/9/4), and instructed the working group to consider introducing a graduated scale. The Sub-Committee also requested the working group to consider the explanatory diagrams contained in document SLF 55/INF.11 for possible inclusion in the draft interpretations.

Establishment of a working group

9.6 Recalling its relevant decision at SLF 54, the Sub-Committee established a Working Group on Development of Provisions to Ensure the Integrity and Uniform Implementation of the 1969 TM Convention and instructed it, taking into account the comments and decisions made in plenary, to:

.1 further develop the draft Unified Interpretations to the 1969 TM Convention, based on annex 2 to document SLF 55/9, taking into account documents SLF 55/9/1, SLF 55/9/2, SLF 55/9/4, SLF 55/9/5, SLF 55/INF.2 and SLF 55/INF.11, and develop a covering draft TM.5 circular;

.2 further develop the draft Recommendation on the use of national tonnage in applying international conventions, and the associated draft Assembly resolution, based on annex 3 to document SLF 55/9;

.3 further consider matters related to reduced gross tonnage for crew and trainee accommodation spaces, taking into account documents SLF 55/9/3 and SLF 55/INF.2, annex 5; and

.4 consider whether there is a need to re-establish the correspondence group and, if so, prepare terms of reference for consideration by the Sub-Committee.

Report of the working group

9.7 Having considered the report of the working group (SLF 55/WP.5), the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the meeting, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

10 DEVELOPMENT OF AMENDMENTS TO PART B OF THE 2008 IS CODE ON TOWING AND ANCHOR HANDLING OPERATIONS

10.1 The Sub-Committee recalled that SLF 54, having considered documents SLF 54/10 and SLF 54/INF.5 (Norway) and SLF 54/INF.17 (Finland), had invited Member Governments and international organizations to submit comments and proposals, based on the draft amendments set out in the annex to document SLF 54/10, to this session.

Proposed amendments to the 2008 IS Code

10.2 The Sub-Committee had for its consideration the following documents:

.1 SLF 55/10 (Denmark, Norway, United States, Vanuatu, IMCA), presenting the outcome of their work on the draft amendments to part B of the 2008 IS Code concerning towing and anchor handling operations, further refining and developing the draft amendments contained in document SLF 54/10 and including considerations on lifting operations; and

.2 SLF 55/INF.4 (Norway), providing background information on the principles for unified stability criteria and operational guidance for ships engaged in anchor handling operations, proposed to be incorporated in part B of the 2008 IS Code.

10.3 In considering the above documents, the Sub-Committee noted, in particular, the following views:

.1 the recommendations on lifting appliances should also cover lifting in other modes then just lifting over the A-frame;

.2 the guidance on anchor handling should also apply to other operations that have a similar effect on the ship;

.3 the identification by name of particular operations should be carefully considered. Some of the operations included in the draft definition of "anchor handling", for example, could be carried out using different types of equipment, which in many cases will not exert the same force on the ship as an anchor handling operation; and

.4 the scope of application of the draft amendments should be carefully considered, since the proposed amendments are to paragraphs of the recommendatory part B of the Code which are referred to in part A, making those amendments, in effect, mandatory.

Instructions to the IS Working Group

10.4 Having considered the above views, the Sub-Committee instructed the IS Working Group, established under agenda item 3, to further consider the proposed amendments to the 2008 IS Code, as contained in the annexes to document SLF 55/10, taking into account the comments made in plenary and document SLF 55/INF.4, and advise the Sub-Committee accordingly.

Report of the working group

10.5 Having considered the part of the report of the working group (SLF 55/WP.3) dealing with this agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

11 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS

11.1 The Sub-Committee recalled that MSC 78 had instructed the sub-committees to consider any submitted IACS unified interpretations with a view to developing appropriate IMO interpretations, if deemed necessary.

Application of the 1988 Load Lines Protocol, regulation 36(6) relating to trunks

11.2 The Sub-Committee considered document SLF 55/11 (IACS), seeking clarification on the correct interpretation of the words "continuous hatchways" in regulation 36(6) of the 1988 Load Lines Protocol, as amended by resolution MSC.143(77). IACS was of the view that a uniform approach should be developed, taking into account that where more than one

hatchway is fitted, there may be different approaches in applying the requirements of the regulation.

11.3 In this context, the Sub-Committee agreed that of the three illustrated arrangements, only figure 3 clearly qualified as a continuous hatchway, noting that the methods proposed to evaluate the arrangements shown in figures 1 and 2 appeared to be based on an equivalency approach, where the effective lengths of the individual hatchways were summed together to give a single length value. Since no explanations of the basis for equivalency of the figures 1 and 2 methods were given, there was no assurance that the summation of individual hatchway lengths, with exposed cross-deck areas between them, was as effective in reducing boarding seas as the continuous length of a single trunk.

11.4 Following discussion, the Sub-Committee invited IACS to consider developing a unified interpretation of the words "continuous hatchways" in regulation 36(6) of the 1988 Load Lines Protocol, as amended by resolution MSC.143(77), taking into account the comments made.

12 DEVELOPMENT OF AMENDMENTS TO THE CRITERION FOR MAXIMUM ANGLE OF HEEL IN TURNS OF THE 2008 IS CODE

12.1 The Sub-Committee recalled that SLF 54 had considered document SLF 54/12 (RINA), proposing amendments to chapter 3 of part A of the 2008 IS Code, based on the view that the criterion for the angle of heel in turns in the Code takes no account of the ship's turning ability and appears to assume a turning diameter that is double of that recommended by the Standards for ship manoeuvrability (resolution MSC.137(76)). SLF 54 also noted RINA's view that the formula required to be employed is not valid for some hull types, that the criterion conflicts with the requirements of the 2000 HSC Code and that it guarantees no minimum stability margin in full-helm turns.

12.2 The Sub-Committee also recalled that SLF 54, while noting that the proposed amendments were supported in principle, was of the view that further thorough study of the matter was necessary, and had invited Member Governments and international organizations to submit comments and proposals on the draft amendments set out in annex 1 to document SLF 54/12 to this session.

Proposed amendments to the 2008 IS Code

12.3 The Sub-Committee had for its consideration document SLF 55/12 (RINA), containing revised proposals for amendments to chapter 3 of part A of the 2008 IS Code, which took into account the views expressed at SLF 54 and inviting the Sub-Committee to

consider whether limits should be applied to both the initial transient maximum, and/or the "steady-state" heel angle. RINA was of the opinion that the current formula was intended to address the steady-state heel angle and included an implicit assumption regarding the reduction in speed from the approach speed; and that only in this way the existing criterion could be reconciled with the standards for ship manoeuvrability.

12.4 In considering the proposed amendments, the Sub-Committee noted with appreciation information provided by the delegation of Japan on actual trial data of a cruise ship and ro-pax ships they had used to examine the RINA proposal. These showed that the measured steady heel angle due to turning is usually about 4°, which is much smaller than 10°, meaning the current empirical formula used in the 2008 IS Code works well and there was no need for additional requirements. On the other hand, the maximum roll angle due to turning ranges from 10° to 14°, meaning that the requirement of 15° could be critical to cruise ship and ro-pax designs. In the case of ro-pax ships, sea trials are not normally executed under full load condition, making it essential to extrapolate the maximum roll angle under full load condition from that not under the full load condition. Since the maximum roll angle cannot be determined with the balance of heeling moment and GZ, the use of a manoeuvring simulation model is required. Normally, data for manoeuvring simulation models are not available for these ships, because they are directionally stable. In addition, the maximum roll angle occurs with instantaneous roll moments like wave-induced roll moments so that the critical heel angle value for this situation should be the angle of vanishing stability in place of the angle of maximum stability and thus the acceptable value for the maximum roll angle is much larger than 15°. This indicates that these ships are in no danger of capsizing due to turning at all. In conclusion, the delegation was of the opinion that the revision of the requirement of the heel angle due to turning for passenger ships is not necessary and could simply increase the costs and time for their design.

12.5 The Sub-Committee also noted the concerns of some delegations that the proposal may not be practical for sea trials under full load and that the proposed figure of 15° for the maximum transient outward heel angle was too large.

Instructions to the IS Working Group

12.6 Having considered the above views, the Sub-Committee instructed the IS Working Group, established under agenda item 3, taking into account the comments made in plenary, to further consider the draft amendments to chapter 3 of part A of the 2008 IS Code, based on the annex to document SLF 55/12.

Report of the working group

12.7 Having considered the part of the report of the working group (SLF 55/WP.3) dealing with the agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

13 DEVELOPMENT OF A MANDATORY CODE FOR SHIPS OPERATING IN POLAR WATERS

13.1 The Sub-Committee noted that DE 56 had referred the corresponding chapters of the draft International Code of safety for ships operating in polar waters (Polar Code) to COMSAR 16, FP 56, NAV 58, SLF 55 and STW 43 for review, together with relevant explanatory comments (DE 56/WP.4, annex 2), for advice to DE 57. In this context, document DE 57/11 was also referred to SLF 55, as it provides additional information regarding the proposed categorization of ships operating in polar waters. The Sub-Committee also noted that MSC 90 had concurred with the actions taken by the DE Sub-Committee.

13.2 The Sub-Committee had for its consideration the following documents:

.1 SLF 55/13 (Secretariat), reporting on the outcome of DE 56 and MSC 90 with regard to the development of the mandatory Polar Code and including in the annex extracts from the explanatory comments and chapters 3 and 4 of the draft Code prepared by DE 56; and

.2 SLF 55/13/1 (United States), providing comments on document SLF 55/13, in particular concerning ice accretion, intact stability, stability in damaged condition and subdivision.

13.3 Having considered the above documents, the Sub-Committee noted, in particular, the following views:

.1 requirements concerning ice accretion should be included in the draft Polar Code, without the need for amendments to the 2008 IS Code. Consideration should also be given to the fact that ice accretion depends on operational and environmental conditions and would, therefore, be voyage-specific. It was noted that ice accretion is dealt with in Part B of the

IS Code, and that the matter should be further considered by the IS Working Group; and

.2 regarding double bottom requirements, the draft Code should only cover any requirements above and beyond those contained in the SOLAS Convention.

Instructions to the IS and SDS Working Groups

13.4 Having considered the above views, the Sub-Committee instructed the IS and SDS Working Groups, established under agenda items 3 and 7, respectively, taking into account the comments made in plenary, to consider the proposed text of chapters 3 and 4 of the draft Polar Code, as contained in the annex to documents SLF 55/13 and DE 57/11, taking into account document SLF 55/13/1, and advise the Sub-Committee accordingly. In this context, the Chairmen of the working groups were authorized to exchange information, in case issues were identified falling under the other group's purview, as appropriate.

Report of the working groups

13.5 Having considered the part of the report of the working groups (SLF 55/WP.3 and SLF 55/WP.4) dealing with the agenda item, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's reports and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

[**14 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR SLF 56**

14.1 In considering matters related to the biennial agenda, provisional agenda and arrangements for its next session, the Sub-Committee recalled that:

.1 MSC 91 requested all sub-committees to prepare their respective proposals for the High-level Action Plan for the coming biennium, for consideration by MSC 92, for inclusion in the Committee’s proposals to C 110 for the High-level Action Plan for 2014-2015; and

.2 with regard to the proposed Sub-Committee restructuring, the Sub-Committee should still prepare its biennial and provisional agendas accordingly, bearing in mind that they are subject to change pending the decisions of MEPC 65, MSC 92 and C 110.

Proposals for the biennial agenda for 2014-2015 and provisional agenda for SLF 56

14.2 Taking into account the progress made at the session and the instructions of MSC 91, the Sub-Committee prepared its proposed biennial agenda for 2014-2015 (SLF 55/WP.2, annex 1), and the provisional agenda for SLF 56 (SLF 55/WP.2, annex 2), as set out in annexes […] and […], respectively, for consideration by MSC 92.

Arrangements for the next session

14.3 The Sub-Committee agreed to establish at its next session working and drafting groups on the following subjects:

[*to be completed by the Secretariat after the session*]

14.4 The Sub-Committee established correspondence groups on the following subjects, due to report to SLF 56:

[*to be completed by the Secretariat after the session*]

Status of planned outputs in the High-level Action Plan

14.5 The Sub-Committee, noting that the status of planned output will no longer be produced as part of a working paper during the session in order to avoid a duplication of work, invited MSC 92 to note the status of planned outputs, set out in annex […].

Date of next session

14.6 The Sub-Committee noted the information provided by the Secretary-General that the date of the next meeting will be announced in due course, pending the decisions by MSC 92 and C 110 on the proposed Sub-Committee restructuring.[*]]

15 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2014

15.1 In light of the decisions of C 109 and MSC 91 regarding the potential Sub-Committee restructuring, the Sub-Committee did not elect a Chairman and Vice-Chairman for 2014.

[*] Whenever a reference to SLF 56 appears in this report, it should be construed as a reference to the first session of the new Sub-Committee, if approved by the Committees and the Council.

16 ANY OTHER BUSINESS

Performance standards for electronic inclinometers

16.1 The Sub-Committee considered document SLF 55/16 (Secretariat), reporting on the outcome of NAV 58 on matters related to the draft Performance standards for electronic inclinometers, and noted that NAV 58 had recalled that NAV 57 had agreed that further consideration was needed on whether an electronic inclinometer:

.1 should provide an indication of the acceleration forces due to rolling that could be expected at the place of installation;

.2 might optionally provide a warning for parametric and/or synchronous roll detection;

.3 might optionally provide a warning for indicating that a set heel angle had been exceeded; and

.4 should also be capable of operating from the ship's main and emergency source of electrical power.

16.2 The Sub-Committee also noted that NAV 58 had endorsed the draft Performance standards and the associated draft MSC resolution, and forwarded it to the Sub-Committee for any advice on appropriate criteria for alarming functionality of inclinometers. Subsequently, NAV 58 requested SLF 55 to review the draft Performance standards and the associated draft MSC resolution, and submit it directly to MSC 92 for adoption.

16.3 Following an in-depth discussion, the Sub-Committee agreed that there was no need for an alarm function of inclinometers concerning parametric roll and or synchronous rolling detection and, therefore, decided that paragraph 8.1 of the draft Performance standard should be deleted. Subsequently, the Sub-Committee agreed to the draft Performance standards for electronic inclinometers, and the associated draft MSC resolution, as set out in annex […], for submission to MSC 92 for adoption.

2012 Cape Town Agreement – Procedure for calculating the number of fishing vessels

16.4 The Sub-Committee noted that MSC 91 had noted with appreciation the successful outcome of the 2012 International Conference on the Safety of Fishing Vessels held from 9 to 11 October 2012 in Cape Town, South Africa (MSC 91/2/3), in particular the adoption of the 2012 Cape Town Agreement, and with reference to Conference resolution 5:

.1 had instructed SLF 55 to develop a procedure for calculating the number of fishing vessels of each Contracting State of the 2012 Cape Town Agreement, as a matter of high-priority under its agenda item on "Any other business", for submission to MSC 92 for approval; and

.2 had invited Member Governments and international organizations to urgently consider the matter and submit relevant comments and proposals to SLF 55.

16.5 In this connection, the Sub-Committee had for its consideration the following documents:

.1 SLF 55/16/1 (South Africa), proposing a procedure for calculating the number of fishing vessels of 24 m in length and over of each Contracting State of the 2012 Cape Town Agreement;

.2 SLF 55/16/2 (Secretariat), reporting on the outcome of MSC 91 and providing a draft procedure for calculating the number of fishing vessels of each Contracting State of the 2012 Cape Town Agreement, in order to facilitate the discussion on the matter;

.3 SLF 55/16/5 (FAO), providing information on records of fishing vessels that are maintained by FAO or Regional Fisheries Bodies (RFBs), and information on the number of fishing vessels of 24 m in length and over that are authorized to fish on the high seas from the High Seas Vessels Authorization Record (HSVAR); and

.4 SLF 55/16/6 (Japan), providing comments on the procedure for calculating the number of fishing vessels of each Contracting State of the 2012 Cape Town Agreement by the Depositary, and proposing that the procedure should be developed taking into account the number of fishing vessels of Member States already reported to the Organization, as listed in table 4 of document SFV-P/CONF.1/7.

16.6 Having considered the above documents, the Sub-Committee noted that many delegations supported the use of the procedure proposed by the Secretariat (SLF 55/16/2) as the basis for the discussions.

16.7 The subsequent considerations centred on the question of how the number of fishing vessels of existing Parties to the 1993 Torremolinos Protocol which utilized the simplified accession procedure in Article 3 of the Agreement (paragraph 3.2 of the draft procedure) should be determined and the Sub-Committee noted that:

.1 some delegations were not in favour of paragraph 3.2 (SLF 55/16/2, annex), as they considered the information provided to the Depositary by Parties to when acceding to the Protocol not to be reliable, due to the fact that the information was out of date and did not address ships operating on the high seas. They were of the firm view that Member Governments, when expressing their consent to be bound by the Agreement, should communicate to the Depositary, the number of fishing vessels of 24 m in length and over under their flag, authorized to operate on the high seas; and

.2 other delegations were of the view that the information provided by Parties to the Protocol at the time of accession should be utilized for determining the figure.

16.8 In light of the above, the Sub-Committee agreed that paragraph 3.2 of the draft Procedure should be re-drafted to take the above views into account. The Sub-Committee also urged Member Governments to submit, when signing the Agreement, to the Depositary the number of fishing vessels of 24 m in length and over under their flag, authorized to operate on the high seas.

Establishment of a drafting group

16.9 Following discussion, and recalling the relevant instruction of MSC 91, the Sub-Committee established a drafting group and instructed it, taking into account the comments and decisions made in plenary, to develop a procedure for calculating the number of fishing vessels of each Party to the 2012 Cape Town Agreement and an associated draft MSC resolution, based on document SLF 55/16/2 and taking into account documents SLF 55/16/1, SLF 55/16/5 and SLF 55/16/6.

Report of the drafting group

16.10 Having considered the report of the drafting group (SLF 55/WP.7), the Sub-Committee agreed to a draft MSC resolution on Procedure for calculating the

number of fishing vessels of each Party to the 2012 Cape Town Agreement, as set out in annex […], for submission to MSC 92 for approval.

Outcome of BLG 16

Damage stability standard for offshore support vessels that carry limited amounts of hazardous and noxious liquid substances in bulk

16.11 The Sub-Committee considered the part of document SLF 55/2 (Secretariat) reporting on the outcome of BLG 16 on matters related to the damage stability standard for OSVs carrying limited amounts of hazardous and noxious liquid substances in bulk and noted that BLG 16 had noted that SLF 54, having considered document SLF 54/7/1 (United States) dealing with the matter, had agreed to await a request from the BLG Sub-Committee seeking advice on damage stability criteria for such vessels. Subsequently, BLG 16 invited the Sub-Committee to consider the issue further and advice BLG 18 accordingly.

16.12 The Sub-Committee considered document SLF 55/16/3 (United States), proposing a damage stability standard for OSVs carrying limited amounts of hazardous and noxious liquid substances in bulk and stressing the importance of compatibility and alignment between the damage stability standards in the Guidelines for the design and construction of offshore supply vessels, 2006 (resolution MSC.235(82), as amended) and the future OSV Chemical Code for the carriage of limited amounts of hazardous and noxious liquid substances in bulk on OSVs, currently under development in the BLG Sub-Committee.

16.13 In this context, the Sub-Committee noted the views of the delegation of Norway that the draft OSV Chemical Code would allow the carriage of products with more severe carriage requirements on OSVs than allowed by the *Guidelines for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels* (resolution A.673(16)). In this context, the delegation was of the opinion that the damage stability requirements should account for the additional risk. Therefore, they were concerned that the damage extents given in document SLF 55/16/3 were minor, especially for carriage of larger amounts and carriage of products with more severe carriage requirements then those products covered by the Guidelines. Compared to the current Guidelines and the IBC Code, the safety level for carriage of these products on board OSVs would be reduced.

16.14 Notwithstanding the above, following and in-depth discussion, the Sub-Committee requested the Secretariat to make the necessary editorial modifications to the tables set out

in the annex to document SLF 55/16/3 and convert them into text, as set out in annex […], and inform BLG 18 accordingly.

Harmonizing distance criteria for gas fuel tanks and assumed penetration depth providing appropriate collision protection and damage stability

16.15 The Sub-Committee considered the part of document SLF 55/2 (Secretariat) reporting on the outcome of BLG 16 on matters related to harmonizing distance criteria for gas fuel tanks and assumed penetration depth providing appropriate collision protection and damage stability and noted that BLG 16 had noted the view of the Working Group on Development of Provisions for Gas-fuelled Ships on possible requirements for distance from shell plating to fuel tank in chapter 10 of the draft Code and had agreed to request SLF 55 to evaluate the data contained in documents BLG 16/6/5 and BLG 16/6/6 and provide guidance on the application of these and other relevant data in determining appropriate distance criteria. The Sub-Committee also noted that BLG 17 had referred the related documents BLG 17/8/7 (CESA) and BLG 17/INF.14 (Germany) to SLF 55 for comment and advice as appropriate.

16.16 The Sub-Committee had for its consideration the following documents:

.1 SLF 55/16/4 (CESA), presenting a proposal to harmonize the damage assumptions and subdivision according to SOLAS regulation II-1/8 with regulation 5.3.4.1 of the draft IGF Code (BLG 17/8/1), under development in the BLG Sub-Committee, providing both protection and flexibility and taking into account that the location criteria for gas fuel tanks in the draft IGF Code are based on the IGC Code damage assumptions; and

.2 SLF 55/INF.12 (Germany, Norway), providing the results of a safety assessment for collisions relating to the penetration of LNG tanks, addressing the issue of LNG tank location and the impact this will have on risk to tankers and containerships using LNG as fuel.

16.17 Following discussion, the Sub-Committee agreed to instruct the SDS Working Group, established under agenda item 7, taking into account comments and decisions made in plenary, to consider the harmonizing distance criteria for gas fuel tanks and assumed penetration depth providing appropriate collision protection and damage stability, taking into account documents SLF 55/16/4, SLF 55/INF.12, BLG 16/6/5, BLG 16/6/6, BLG 17/8/7 and BLG 17/INF.14 and advise the Sub-Committee accordingly.

16.18 Having considered the part of the report of the SDS Working Group (SLF 55/WP.4) related to this matter, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

Development of the revised IGC Code

16.19 The Sub-Committee considered document SLF 55/16/7 (Secretariat) reporting on the outcome of BLG 16 regarding the development of the revised IGC Code and noted that BLG 16, in considering the report of the Drafting Group on Development of the Revised IGC Code (BLG 16/WP.7), had endorsed a list of sections of the draft Code to be considered by other IMO bodies for their input (BLG 16/7, annex 2), and had forwarded sections 2.2 to 2.7 of chapter 2 of the draft revised Code, as set out in the annex to document BLG 17/9, to SLF 55 for review and advice.

16.20 Following discussion, the Sub-Committee agreed to instruct the Drafting Group on Development of mandatory carriage requirements for stability instruments on board tankers, established under agenda item 6, taking into account comments and decisions made in plenary, to consider sections 2.2 to 2.7 of chapter 2 of the draft IGC Code, as set out in the annex to document BLG 17/9, and advise the Sub-Committee accordingly.

16.21 Having considered the part of the report of the drafting group (SLF 55/WP.6) related to this matter, the Sub-Committee:

[to be prepared by the Secretariat in consultation with the Chairman after the session, based on the group's report and the actions requested therein, taking into account the decisions taken by the Sub-Committee during subsequent discussions]

Review and reform of the Organization – restructuring of the sub-committees

16.22 The Sub-Committee, having noted the information provided by the Secretariat regarding the discussions at C 109 and MSC 91 on matters related to the review and reform of the Organization (C 109/D and MSC 91/22), was invited by the Secretary-General to comment on the proposed amalgamation of the DE, FP and SLF Sub-Committees into two new technical Sub-Committees (MSC 91/19/9).

16.23 The views expressed were noted with appreciation by the Secretary-General and he informed the Sub-Committee that they would be taken into account when preparing the detailed proposal requested by MSC 91 regarding the proposed names, terms of reference, provisional agendas, biennial agendas, cost-benefit analysis and meeting dates for each body, for consideration at MEPC 65 and MSC 92.

Statement by the delegation of Indonesia concerning lifeboat casualty

16.24 The Sub-Committee noted information provided by the delegation of Indonesia on a very recent incident of a passenger cruise ship involving one of her lifeboats which accidently fell into the sea during an emergency drill operation, causing five crew members to lose their lives, three of them Indonesians, and three others being injured in the accident. The delegation expressed their deepest condolences and sympathy to all of the victims of the accident and to their families and highly appreciated the work of those who were involved in the rescue operation and the on-going casualty investigation. The delegation was of the opinion that, following this accident, operational procedures for lifeboat drills and exercises should be evaluated and strengthened to the highest standard, with consideration of good seamanship, as well as practicability in the future. Finally, the delegation expressed its gratitude to all relevant parties in charge for the necessary actions taken with regard to safety related matters.

17 ACTION REQUESTED OF THE COMMITTEES

17.1 The Maritime Safety Committee, at its ninety-second session, is invited to:

[to be prepared by the Secretariat in consultation with the Chairman after the meeting]

17.2 The Marine Environment Protection Committee, at its sixty-fifth session, is invited to:

[to be prepared by the Secretariat in consultation with the Chairman after the meeting]

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ANNEXES

[to be prepared by the Secretariat after the session]