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REPORT TO THE MARITIME SAFETY COMMITTEE AND THE MARINE ENVIRONMENT PROTECTION COMMITTEE

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1 GENERAL

Introduction

1.1 The Sub-Committee on Carriage of Cargoes and Containers (CCC), chaired by Mr. Xie Hui (China), held its fourth session from 11 to 15 September 2017. The Vice-Chair, Mr. Patrick Van Lancker (Belgium), was also present.

1.2 The session was attended by delegations from Member States, an Associate Member of IMO and by observers from intergovernmental organizations and non-governmental organizations in consultative status, as listed in document CCC 4/INF.1.

Secretary-General's opening address

1.3 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 address: http://www.imo.org/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetings

Chair's remarks

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

Update on MV Cheshire

1.5 The Sub-Committee noted the information provided by the delegation of Spain regarding the successful rescue operations conducted by the Spanish authorities between 12 and 14 August 2017 and the subsequent salvage operations, in relation to an incident involving high temperatures in the cargo holds and the release of gases from the cargo on the **MV Cheshire**, which was underway off the Canary Islands with a cargo of ammonium nitrate based fertilizer.

1.6 Having expressed its sincere appreciation to all the parties involved in the aforementioned incident response, the Sub-Committee also noted the information by the delegation of the United Kingdom, that a marine accident investigation would be carried out and communicated to the Organization in due course.

Adoption of the agenda and related matters

1.7 The Sub-Committee adopted the agenda (CCC 4/1) and agreed to be guided in its work, in general, by the annotations contained in document CCC 4/1/1 (Secretariat) and the working arrangements in document CCC 4/1/2 (Chair).

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the outcomes of MEPC 70, MSC 97, MSC 98, MEPC 71 and C 118 relevant to the work of the Sub-Committee, as reported in documents CCC 4/2, CCC 4/2/1 and CCC 4/2/2 (Secretariat), and took them into account in its deliberations when dealing with relevant agenda items.

Practical application of MSC.1/Circ.1500

2.2 With regard to the practical application of the *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1500), the Sub-Committee noted the following:

.1 in considering how the provisions of MSC.1/Circ.1500 should be followed for draft amendments having a long history of development and refinement, MSC 98 decided that it should be the sub-committees' responsibility to ensure completion of check/monitoring sheets and records for regulatory development for such complicated issues;

.2 MSC 98 agreed that the Secretariat, for the draft amendments to be considered and finalized by sub-committees in plenary within one session, may be instructed, when necessary, to complete part III of the check/monitoring sheet and the records for regulatory development after the session, instead of establishing a specific working/drafting group;

.3 MSC 98 endorsed the Secretariat's view that "minor corrections" (referred to in paragraph 3.2(vi) of document C/ES.27/D) could be excluded from application of the provisions for completion of the check/monitoring sheet and the records for regulatory development; and

.4 MSC 98 agreed to expand the application of MSC.1/Circ.1500 to all safety-related IMO conventions, such as the 1966 LL Convention, the 1988 LL Protocol, the 1969 TM Convention, the 1978 STCW Convention, COLREG 1972 and CSC 1972, including mandatory instruments under those conventions.

Draft Strategic Plan for the Organization for the 2018-2023 period

2.3 The Sub-Committee also noted that C 118 had approved the draft *Strategic Plan for the Organization for the six-year period 2018-2023* as set out in annex 1 to document C 118/WP.4, together with the associated draft Assembly resolution, and had forwarded them to the thirtieth regular session of the Assembly for adoption.

3 AMENDMENTS TO THE IGF CODE AND DEVELOPMENT OF GUIDELINES FOR LOW-FLASHPOINT FUELS

GENERAL

3.1 The Sub-Committee recalled that CCC 3 had established a Correspondence Group on Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels (Correspondence Group) with the terms of reference set out in paragraph 3.29 of document CCC 3/15.

REPORT OF THE CORRESPONDENCE GROUP AND RELATED DOCUMENTS

3.2 The Sub-Committee considered document CCC 4/3 (Sweden), providing the report of the Correspondence Group on Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels with regard to the development of draft amendments to the IGF Code regarding fuel cells and the development of draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel. Having approved the report in general, the Sub-Committee took action as indicated in paragraphs 3.3 to 3.24.

Requirements for fuel cells

Fuel storage

3.3 The Sub-Committee noted the outcome of the Correspondence Group's discussion regarding fuel storage in the context of fuel cells and that the mutual understanding within the Correspondence Group was that primary fuel tanks would be covered by existing fuel-specific parts in the IGF Code but if the type of fuel was not covered, the alternative design approach would apply.

Terminology

3.4 Having noted the outcome of the Correspondence Group's discussion on the terminology used in the context of types of fuels used, in particular that all instances of "hydrogen fuel" were replaced with "reformed fuel" in order to make draft part E generic enough to cover all possible feed fuels, the Sub-Committee also noted the following comments:

.1 the definition of "fuel cell", as set out in paragraph 2.2.14*bis* of annex 1 to document CCC 4/3, could be supported and could be finalized with some editorial modifications; and

.2 the definitions referred to in paragraph 9 of document CCC 4/3 were not used in any of the draft requirements for fuel cells in the new draft part E of the IGF Code and, therefore, were unnecessary.

3.5 Subsequently, the Sub-Committee decided to refer the above comments to the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels (IGF Code Working Group) for further consideration (see paragraph 3.43).

Equipment boundaries

3.6 With regard to the equipment boundaries diagram set out in annex 2 to document CCC 4/3, the Sub-Committee noted the discussions of the Correspondence Group.

Safety concept for fuel cells

3.7 The Sub-Committee noted the views expressed in the Correspondence Group regarding the safety concept ("gas safe fuel cell space" and/or "ESD-protected fuel cell space") that could be suitable for fuel cell spaces.

Draft new part E of the IGF Code relating to fuel cells

3.8 The Sub-Committee noted the progress made by the Correspondence Group on the draft requirements for fuel cells, which had been prepared as draft amendments to the IGF Code (new draft definition in part A and new draft part E). In this context, the Sub-Committee also noted a statement by the delegation of Italy, as set out in annex 7, regarding the need to progress pending issues under this agenda item as far as possible at this session as a matter of priority. The delegation of Germany supported the aforementioned statement and, in addition, expressed the view that the work related to the draft requirements for fuel cells should be the highest priority of the IGF Code Working Group, with the objective of finalizing the corresponding draft amendments to the IGF Code at this session, if possible.

3.9 In relation to draft requirements for fuel cells, the Sub-Committee had for its consideration the following documents:

.1 CCC 4/3/3 (Marshall Islands), proposing changes to the overall structure of draft fuel cell requirements to clearly identify that:

.1 some systems do not use "hydrogen rich fuel";

.2 some systems do not require a "reforming" process; and

.3 systems in a "gas-tight enclosure" may have unique arrangements for ventilation, insulation and entry, which have proven safety records,

in order to facilitate further work and ensure that all types of fuel cell power installations are adequately addressed in the IGF Code. The proposed amendments are based on using 375 kW as a threshold for differentiating fuel cell systems within a gas-tight enclosure in order to align with the definition of a category A machinery space;

.2 CCC 4/INF.7 (Marshall Islands), providing, in its annex, the amendments to the draft IGF Code requirements on fuel cells that were proposed in paragraph 5 of, and the annex to, document CCC 4/3/3 in tracked changes for ease of reference; and

.3 CCC 4/INF.15 (European Commission), providing a summary of the main conclusions and recommendations of a study commissioned by the European Maritime Safety Agency (EMSA) on the use of fuel cells in shipping as well as a URL linking to the final full report of the study in which a technology review, a summary of recent and ongoing research projects, a regulatory gap analysis and a Safety Assessment on different concepts of fuel cell installations for both passenger and cargo ships can be found.

3.10 The Sub-Committee noted with appreciation the information contained in document CCC 4/INF.15.

3.11 With regard to documents CCC 4/3/3 and CCC 4/INF.7, the Sub-Committee noted the following comments:

.1 there should be valid technical justification for the 375 kW threshold to be applicable to fuel cells, since such a threshold applies only to internal combustion machinery used for purposes other than main propulsion and not to engines used for propulsion, boilers and other oil fuel units;

.2 fire safety provisions for fuel cell power systems in sealed containers need to be discussed;

.3 fuel cell power system enclosures should be surrounded by A-60 class divisions regardless of the total power output, since the fire and explosion risk is intrinsically linked to the presence of low-flashpoint fuel independently of the size of the fuel cell; and

.4 the 375 kW threshold is not appropriate but the issue of low-power or low-risk fuel cell power systems requires further consideration.

3.12 Taking into account the above views and the need to prioritize the work of the IGF Code Working Group, the Sub-Committee instructed the IGF Code Working Group to finalize the draft amendments to the IGF Code regarding fuel cells, based on annex 1 to document CCC 4/3, taking into account the proposals in document CCC 4/3/3, the information in document CCC 4/INF.7 and the comments listed in paragraph 3.11 above.

Draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel

Definitions of methyl/ethyl alcohol

3.13 The Sub-Committee endorsed the Correspondence Group's decision to develop a new definition for methyl/ethyl alcohol, having taken into account the view that inclusion of the chemical formula in the definition would imply 100% pure material only and, in reality, no product could fulfil such a requirement. In this regard, the Sub-Committee was of the view that the definitions enclosed in the second set of square brackets in paragraphs 2.2.2 and 2.2.6 of annex 3 to document CCC 4/3 should be further developed by the IGF Code Working Group.

Fuel standard

3.14 The Sub-Committee agreed to recommend to MSC 99 that an invitation be extended to ISO/TC 8 to consider developing a standard for methyl/ethyl alcohol, having noted the relevant recommendation of the Correspondence Group.

Safety concept for methyl/ethyl alcohol machinery spaces

3.15 Having noted the deliberations of the Correspondence Group regarding the safety concept ("gas safe" or "ESD") that would be suitable for machinery spaces in the context of methyl/ethyl alcohol as fuel, the Sub-Committee instructed the IGF Code Working Group to consider the matter further.

Standard for methyl/ethyl fuel couplings

3.16 The Sub-Committee agreed to recommend to MSC 99 that an invitation be extended to ISO/TC 8 to develop a standard for methyl/ethyl alcohol fuel couplings, having noted the relevant recommendation of the Correspondence Group.

Draft chapters addressing operational issues

3.17 Having noted that the Correspondence Group had developed draft chapters 16 and 17, with a view to addressing operational issues relating to the use of methyl/ethyl alcohols as fuel, the Sub-Committee decided to instruct the IGF Code Working Group to further develop the draft new chapters.

Toxicity of methyl alcohol

3.18 The Sub-Committee noted the view of the Correspondence Group that the toxic properties of methyl alcohol needed to be further considered in the context of the draft technical provisions for safety of ships using methyl/ethyl alcohol as fuel, and also noted the information provided by the delegation of France regarding the preliminary results of a study being conducted by a French company on the use of methyl/ethyl alcohols as fuel in confined enclosed spaces, which indicated that the toxicity thresholds applicable to human health were very speedily attained. In this regard, the delegation of France informed the Sub-Committee that it intended to submit the results of the aforementioned study to a future session.

3.19 Subsequently, the Sub-Committee instructed the IGF Code Working Group to consider the matter further.

Progress to date

3.20 Having noted the progress made by the Correspondence Group on the development of technical provisions on the safe use of methyl/ethyl alcohol as fuel, the Sub-Committee agreed to instruct the IGF Code Working Group to further develop the draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel, based on annex 3 to document CCC 4/3.

3.21 In this context, the Sub-Committee had for its consideration document CCC 4/3/4 (Germany), providing a visual interpretation of applicable requirements in SOLAS and draft technical provisions for methyl/ethyl alcohol in reference to boundaries between different spaces and proposing amendments to the draft technical provisions in this regard.

3.22 Following a brief discussion, Sub-Committee forwarded document CCC 4/3/4 to the IGF Code Working Group for further consideration.

Potential input by other sub-committees

3.23 Having considered the Correspondence Group's recommendations on the way forward regarding which safety provisions should be forwarded to other sub-committees (CCC 4/3, paragraph 70), the Sub-Committee agreed to instruct the IGF Code Working Group to update and/or confirm the list of safety provisions, taking into account the progress made at this session, with a view to advising the Sub-Committee as to which sections were sufficiently developed to forward to other sub-committees.

Check/monitoring sheet

3.24 Having noted that the Correspondence Group had prepared the check/monitoring sheet and the record format for the draft amendments to the IGF Code relating to fuel cells, the Sub-Committee instructed the IGF Code Working Group to update the check/monitoring sheet and the record format based on the progress made at this session.

PROPOSED AMENDMENTS AND CORRECTIONS TO PART A-1 OF THE IGF CODE

Sub-factor f_v, gas detectors in machinery spaces and corrections to paragraph numbering

3.25 The Sub-Committee had for its consideration document CCC 4/3/2 (China), proposing the following:

.1 deletion of the word "not" in the existing text describing f_v in paragraph 5.3.4.2 of the IGF Code, in order to correctly describe f_v as reflecting the probability that damage is, rather than is not, extending vertically above the lowermost boundary of the fuel tank;

.2 addition of the words "(except for gas safe machinery spaces)" at the end of paragraph 15.8.1.3 of the IGF Code, based on the view that there is no need to install gas detectors in gas safe machinery spaces;

.3 renumbering of existing paragraphs 6.4.16.2.1, 6.4.16.2.2 and 6.4.16.3 to 6.4.16.2, 6.4.16.3 and 6.4.16.4, respectively, since there is no 6.4.16.2, or addition of a new paragraph numbered 6.4.16.2; and

.4 replacement of the reference in paragraph 16.7.2 to the non-existent paragraph 7.3.6.4.3.1.3 with a reference to paragraphs 7.3.6.4.3.1 and 7.3.6.4.3.3.

3.26 The Sub-Committee noted general support for the proposed amendment to paragraph 5.3.4.2 of the IGF Code. In this regard, the Sub-Committee agreed that it was an amendment of a substantive nature and, therefore, instructed the IGF Code Working Group to prepare the draft amendments for submission to MSC 99 with a view to approval and subsequent adoption, having also agreed that the draft amendment should apply to new ships only.

3.27 With regard to the proposed amendment to paragraph 15.8.1.3 of the IGF Code, the Sub-Committee could not agree to the proposal and decided not to pursue it further, taking into account the view that there should be measures to detect possible dangerous situations of multiple failures in a gas safe space, such as the use of gas detectors.

3.28 The Sub-Committee agreed with the proposal to correct the numbering errors in section 6.4.16 of the IGF Code and the incorrect reference in paragraph 16.7.2. In this regard, the Sub-Committee instructed the IGF Code Working Group to consider paragraphs 10 and 11 of document CCC 4/3/2 and advise the Sub-Committee on which option for the renumbering of section 6.4.16 was more appropriate and whether the proposed references in paragraph 16.7.2 were correct, with a view to requesting MSC 99 to authorize the Secretariat to correct the text of the IGF Code (annex to resolution MSC.391(95)) in accordance with the established procedure for correcting editorial errors to treaties.

Protection of gas pipes and pipes for cryogenic liquefied gas

3.29 The Sub-Committee had for its consideration the proposal set out in paragraph 10 of document CCC 4/3/1 (IACS), regarding section 9.5 of the IGF Code and, specifically, proposing the following amendments with a view to clarifying the different protection requirements for gas pipes and pipes for cryogenic liquefied gas and to clarifying the design features for cryogenic pipe protection:

.1 amendments to paragraph 9.5.1 to clarify that it is only applicable for fuel in the gaseous state;

.2 a new paragraph 9.5.3 to clarify application of the secondary enclosure requirements for fuel in the liquefied state; and

.3 a further new paragraph 9.5.4 to clarify that a secondary enclosure is not required for bunkering lines on open deck.

3.30 In the ensuing discussion, the Sub-Committee noted the following views expressed on the matter:

.1 draft paragraph 9.5.3 should be modified to include fuel preparation spaces and tank connection spaces, since they are considered as spaces that are able to contain leakages of cryogenic liquids, based on the unified interpretation under section 4 of the annex to MSC.1/Circ.1558, relating to protection against cryogenic leakage and control of hazardous zones in fuel preparation rooms on open deck, and the requirements in paragraph 6.3.4 of the IGF Code relating to tank connection spaces; and

.2 it is not appropriate for LNG bunkering requirements to be included in draft paragraph 9.5.4, taking into account that chapter 9 of the IGF Code contains requirements for fuel supply.

3.31 Having noted general support for the draft amendments to section 9.5 of the IGF Code, the Sub-Committee instructed the IGF Code Working Group to prepare the draft amendments to the IGF Code, based on the proposal in paragraph 10 of document CCC 4/3/1, taking into account the views expressed, and to include appropriate application provisions, for consideration by the Sub-Committee with a view to endorsement.

Separation of fuel preparation rooms and type C tanks from high fire risk rooms

3.32 The Sub-Committee considered the proposal set out in paragraph 18 of document CCC 4/3/1 (IACS), proposing amendments to paragraph 11.3.3 of the IGF Code based on the view that the requirements in paragraph 11.3.3 also apply to fuel preparation rooms and on the understanding that a cofferdam will be required when a type C tank is located directly above machinery spaces of category A and other rooms with a high fire risk.

3.33 Following discussion, the Sub-Committee instructed the IGF Code Working Group to further consider the draft amendments to paragraph 11.3.3 of the IGF Code and advise the Sub-Committee on how best to proceed.

Explosion relief valves

3.34 Having considered the proposal set out in paragraph 24 of document CCC 4/3/1 (IACS), proposing amendments to paragraph 10.3.1.1 of the IGF Code relating to explosion relief valve capability in the exhaust system, the Sub-Committee noted general agreement to the proposal and instructed the IGF Code Working Group to prepare the draft amendments for consideration by the Sub-Committee with a view to submission to MSC 99 for approval and subsequent adoption, having also agreed that the draft amendment should apply to new ships only.

Loading limit

3.35 With regard to the loading limit of liquefied gas fuel tanks, the Sub-Committee had the following documents for its consideration:

.1 CCC 4/3/1 (IACS), paragraph 27, proposing amendments to paragraph 6.8.2 based on the understanding that the intention of paragraph 6.8.2 is to allow for a higher loading limit than calculated by paragraph 6.8.1, but never above 95%, when the probability of heating the tank contents is very low and when the calculated loading limit using the formulae in paragraph 6.8.1 gives a lower value than 95%;

.2 CCC 4/7 (IACS), proposing a draft IACS Unified Interpretation (CCC 4/7, annex 1), based on the same rationale behind the proposal in document CCC 4/3/1 to amend paragraph 6.8.2 of the IGF Code; and

.3 CCC 4/3/6/Rev.1 (United States), commenting on the above two documents by IACS and informing the Sub-Committee that while the United States supported, in principle, the recommendation to amend paragraph 6.8.2 of the IGF Code, it did not fully agree with the rationale given and, therefore, did not support the proposed IACS Unified Interpretation.

3.36 In the ensuing discussion, the Sub-Committee noted general agreement for the proposed amendment to paragraph 6.8.2 of the IGF Code. With regard to the draft IACS Unified Interpretation set out in annex 1 to document CCC 4/7, divergent views were expressed.

3.37 Subsequently, the Sub-Committee instructed the IGF Code Working Group to prepare the draft amendments to paragraph 6.8.2 of the IGF Code, including application provisions, for consideration by the Sub-Committee with a view to submission to MSC 99 for approval and subsequent adoption.

3.38 In addition, the IGF Code Working Group was requested to further consider the proposed unified interpretation set out in annex 1 to document CCC 4/7, taking into account document CCC 4/3/6/Rev.1, and advise the Sub-Committee on how best to proceed.

LOW-FLASHPOINT OIL

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

.1 CCC 4/3/5 (Germany), informing the Sub-Committee of a German study undertaken to establish whether there is a particular risk related to low-flashpoint diesel and proposes that the study results and conclusions be considered by the Sub-Committee in order to clarify what additional information may be needed. One of the conclusions of the study was that the flashpoint criterion is not commonly used in other industry sectors. Based on the outcome of the discussion, Germany would be willing to look into developing an FSA study and possibly draft provisions for ships to be fuelled by low-flashpoint diesel, to be submitted to the Sub-Committee at a later session; and

.2 CCC 4/INF.11 (Germany), presenting the report of the study conducted by industry stakeholders with respect to the use of low-flashpoint diesel as a marine fuel.

3.40 In considering the information provided in documents CCC 4/3/5 and CCC 4/INF.11, the Sub-Committee noted the following comments expressed with regard to the German study and the potential use of low-flashpoint diesel as marine fuel:

.1 following the relevant outcomes of MSC 96 and MSC 98, it is clear that the SOLAS flashpoint requirements for fuel cannot be amended;

.2 discussions relating to the use of fuels with a flashpoint below 60°C, such as low-flashpoint diesel, can only take place within the context of the IGF Code; and

.3 further safety assessments are needed in order to investigate all safety aspects related to the use of low-flashpoint diesel as a marine fuel, such as the management of fuel leakages, the possible need for additional ventilation and the approval of appropriate equipment, in order to base the potential development of relevant IGF Code requirements on a comprehensive and exhaustive analysis of the risks.

3.41 Having taken the above comments into account and having recalled the decision of MSC 96, as reiterated by MSC 98, that all safety concerns with regard to ships using low-flashpoint oil fuels should be addressed in the context of the IGF Code only, without reopening discussion on the possibility of amending the flashpoint requirements in SOLAS, the Sub-Committee referred documents CCC 4/3/5 and CCC 4/INF.11 to the IGF Code Working Group for further consideration, with a view to providing input with regard to the issues that should be addressed by a future FSA study on the use of low-flashpoint diesel as a marine fuel within the scope of the IGF Code.

ESTABLISHMENT OF A WORKING GROUP

3.42 Having considered the above matters, the Sub-Committee established the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels and instructed it, taking into account the comments made and decisions taken in plenary, to:

.1 finalize the draft amendments to part A-1 of the IGF Code, including appropriate application provisions, based on the proposals in documents CCC 4/3/1 and CCC 4/3/2, taking into account document CCC 4/3/6/Rev.1;

.2 further consider the proposed unified interpretation set out in annex 1 to document CCC 4/7, taking into account paragraphs 25 to 27 of document CCC 4/3/1 and document CCC 4/3/6/Rev.1, and advise the Sub-Committee on how best to proceed;

.3 finalize the draft amendments to the IGF Code regarding fuel cells, based on annexes 1 and 2 to document CCC 4/3, taking into account the proposals in document CCC 4/3/3 and the information in document CCC 4/INF.7;

.4 further develop the draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel, based on annexes 3 and 4 to document CCC 4/3, taking into account the proposals in document CCC 4/3/4;

.5 based on the progress made at this session, update the list of safety topics and parts of the draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel that require input from other sub-committees and advise the Sub-Committee as to which of them are developed enough to be forwarded at this stage;

.6 update or initiate, as appropriate, the check/monitoring sheet and the record format for the draft amendments to the IGF Code based on the progress made at this session;

.7 further consider document CCC 4/3/5 regarding low-flashpoint and advise the Sub-Committee accordingly; and

.8 consider whether it is necessary for the Correspondence Group to be re-established and, if so, prepare terms of reference for consideration by the Sub-Committee.

REPORT OF THE WORKING GROUP

3.43 Having considered the part of the report of the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels (CCC 4/WP.3) dealing with this item, the Sub-Committee took action as described in paragraphs 3.44 to 3.53.

Draft amendments to parts A and A-1 of the IGF Code

3.44 Having taken into account the check/monitoring sheet and records for regulatory development associated with the draft amendments to parts A and A-1 of the IGF Code related to natural gas-specific requirements (annex 1, appendices 1 and 2), the Sub-Committee endorsed the draft amendments prepared by the Working Group, as set out in annex 1, and invited the Committee to approve it with a view to adoption at MSC 100.

Editorial corrections to parts A-1 and B-1 of the IGF Code

3.45 Having noted that the Working Group had confirmed that the first proposal in paragraph 10 and the proposal in paragraph 11 of document CCC 4/3/2, which were intended to renumber the corresponding regulations of the IGF Code, were acceptable, the Sub-Committee invited the Committee to authorize the Secretariat to correct the annex to resolution MSC.391(95), using the established procedure for correcting errors that are editorial in nature (i.e. via a Note Verbale), as follows:

.1 paragraphs 6.4.16.2.1, 6.4.16.2.2 and 6.4.16.3 to be renumbered as 6.4.16.2, 6.4.16.3 and 6.4.16.4, respectively; and

.2 in paragraph 16.7.2, the reference to non-existent paragraph 7.3.6.4.3.1.3 to be replaced with the words "7.3.6.4.3.1 and .3".

Fuel cells

3.46 The Sub-Committee noted the progress made by the Working Group in further developing the draft amendments to the IGF Code regarding fuel cells, as set out in annex 2 to document CCC 4/WP.3, and also noted the identified unresolved issues, as reported in paragraphs 19 to 34 of document CCC 4/WP.3, that needed further consideration.

3.47 In this context, the Sub-Committee noted the check/monitoring sheet and the record format for the draft amendments to the IGF Code regarding fuels cells, as set out in annex 2 to document CCC 4/WP.3.

Methyl/ethyl alcohol and low-flashpoint oil

3.48 Having noted that the Working Group, due to time constraints, had not been able to consider document CCC 4/3/5 regarding low-flashpoint oil fuel nor carry out any work related to the further development of the draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel, the Sub-Committee also noted the view that the work on methyl/ethyl alcohol should be considered to be of high priority, with a view to the draft technical provisions being finalized by a correspondence group, taking into account the significant progress that had been achieved thus far over a period of five years and the fact that eight ships using methyl/ethyl alcohol as fuel were already trading internationally.

3.49 The Sub-Committee further noted the view that deliberations on establishing criteria within the IGF Code for the safe use of low-flashpoint oil were also of high importance and that the Working Group not managing to discuss the matter at this session due to its workload was regrettable.

Unified interpretation of paragraph 6.8.2 of the IGF Code regarding the loading limit of liquefied gas fuel tanks

3.50 The Sub-Committee noted that the Working Group had agreed on the draft unified interpretation of paragraph 6.8.2 of the IGF Code (CCC 4/WP.3, annex 3), having taken into account that the draft unified interpretation did not contain any conditions describing the application of higher loading limits nor did it address some of the views expressed in the Working Group (CCC 4/WP.3, paragraph 16).

3.51 Subsequently, the Sub-Committee agreed to the draft unified interpretation of paragraph 6.8.2 of the IGF Code, as prepared by the Working Group, for inclusion in the consolidated draft MSC circular containing the unified interpretations related to the IGF Code that were agreed at this session (see paragraph 7.23 and annex 3).

RE-ESTABLISHMENT OF THE CORRESPONDENCE GROUP

3.52 Having considered the above matters and in order to progress the work intersessionally, the Sub-Committee decided to re-establish the Correspondence Group on Development of Technical Provisions for the Safety of Ships using Low-flashpoint Fuels, under the coordination of Germany[1], and instructed it to:

.1 finalize the draft amendments to the IGF Code regarding fuel cells, based on annex 2 to document CCC 4/WP.3,document CCC 4/3/3 and the information in document CCC 4/INF.7;

.2 finalize the draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel, based on annexes 3 and 4 to document CCC 4/3, taking into account document CCC 4/3/4;

.3 based on the progress made intersessionally, update the list of safety topics and parts of the draft technical provisions for the safety of ships using methyl/ethyl alcohol as fuel that require input from other sub-committees and advise the Sub-Committee as to the input sought by the other sub-committees;

.4 update the check/monitoring sheet and the record format, as contained in annexes 2 and 3 to the *Guidance on drafting of amendments to the 1974 SOLAS Convention and related mandatory instruments* (MSC.1/Circ.1500), for the draft amendments to the IGF Code; and

.5 submit a written report to CCC 5.

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EXTENSION OF THE TARGET COMPLETION YEAR

3.53 Consequently, the Sub-Committee invited the Committee to extend the target completion year for this output to 2019.

4 SUITABILITY OF HIGH MANGANESE AUSTENITIC STEEL FOR CRYOGENIC SERVICE AND DEVELOPMENT OF ANY NECESSARY AMENDMENTS TO THE IGC CODE AND IGF CODE

Background

4.1 The Sub-Committee recalled that MSC 96, having considered document MSC 96/23/5 (Republic of Korea), which proposed to amend the IGC and IGF Codes to include high manganese austenitic steel for cryogenic service, agreed to include in the 2016-2017 biennial agenda of the CCC Sub-Committee and the provisional agenda for CCC 3 a new output on the "Suitability of high manganese austenitic steel for cryogenic service and development of any necessary amendments to the IGC Code and IGF Code", with a target completion year of 2017.

4.2 The Sub-Committee also recalled that CCC 3 had established a Correspondence Group on the Suitability of High Manganese Austenitic Steel for Cryogenic Service (Correspondence Group) with the terms of reference set out in paragraph 8.9 of document CCC 3/15.

Report of the Correspondence Group and related documents

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

.1 CCC 4/4, reporting on the Correspondence Group's work to develop test acceptance criteria for high manganese austenitic steel for cryogenic service, its consideration of the suitability of high manganese austenitic steel for cryogenic service, and the progress with regard to possible relevant draft amendments to the IGC and IGF Codes;

.2 CCC 4/INF.2, providing the full set of answer sheets circulated and received by the Coordinator of the Correspondence Group, as well as the technical information relating to high manganese austenitic steel that was provided by the Republic of Korea and circulated during the second round of the Correspondence Group;

.3 CCC 4/4/1 (Republic of Korea), containing observations and remarks by the Republic of Korea corresponding to each comment from the first and second rounds of the Correspondence Group on the Suitability of High Manganese Austenitic Steel for Cryogenic Service;

.4 CCC 4/4/3 (Republic of Korea), presenting the results of a wide plate test on high manganese austenitic steel (CCC 4/4/3, annex 2) and proposing draft amendments to the IGC and IGF Codes (CCC 4/4/3, annex 1) with a view to including high manganese austenitic steel for use on tankers carrying liquefied gases in bulk and on ships utilizing liquefied natural gas as fuel;

.5 CCC 4/INF.3 (Republic of Korea), providing updated technical information for high manganese austenitic steel for cryogenic service, reflecting the observations and comments from the Correspondence Group on Suitability of High Manganese Austenitic Steel for Cryogenic Service;

.6 CCC 4/INF.17 (Republic of Korea), providing two example design and fabrication cases of LNG tanks using high manganese austenitic steel, one type B tank for a 20,000 TEU containership and one type C tank for a 50,000 DWT bulk carrier, based on relevant requirements in the IGF and IGC Codes; and

.7 CCC 4/4/2 (Japan), commenting on the report of the Correspondence Group on the Suitability of High Manganese Austenitic Steel for Cryogenic Service, and putting forward the view that consideration of the suitability of high manganese austenitic steel for cryogenic service should be suspended until its safety is verified through actual safety records of LNG tanks made of high manganese austenitic steel, or, if consideration were to proceed without actual safety records, recommending that an exhaustive safety evaluation would be necessary with a view to addressing the points listed in the annex to document CCC 4/4/2.

4.4 Having considered the report of the Correspondence Group (CCC 4/4), the Sub-Committee approved it in general and noted the discussion of the Correspondence Group on the development of test acceptance criteria and the discussion on the consideration of the suitability of high manganese austenitic steel for cryogenic service. The Sub-Committee also noted that the development of draft amendments to the IGC and IGF Codes had not been considered by the Correspondence Group due to time constraints.

4.5 In considering the remaining documents under this agenda item (paragraphs 4.3.3 to 4.3.7 above) in light of the Correspondence Group's report, the Sub-Committee noted the statement by the delegation of the Russian Federation, as set out in annex 7, putting forward the view that there was a need to develop guidelines which would formalize the process for authorizing the use of new materials, clearly describe the algorithm and sequence of actions, the origin of requirements, the volume of tests and the estimated timeline of the whole process.

4.6 The Sub-Committee also noted, inter alia, the following views expressed on the matter:

.1 the technical consideration by the Correspondence Group was not sufficient;

.2 an exhaustive safety evaluation based on the annex to document CCC 4/4/2 or on actual safety records from the operation of ships is indispensable for achieving a complete evaluation of the suitability of high manganese austenitic steel for cryogenic service and for ensuring an appropriate safety level;

.3 the safety record of ships utilizing high manganese austenitic steel for cryogenic service is a more reliable way of ensuring the safety of real structures rather than simulation;

.4 stress corrosion and fatigue fracture analyses are required for robust consideration of the new material;

.5 it is difficult to evaluate the stress corrosion and fatigue fracture disposition of a material without trials and operation of actual ships for a certain period of time, since such aspects are largely dependent on the operational environment at sea, which includes exposure to sea salt as well as random and complex forces and moments caused by wind and waves;

.6 further effort is warranted to achieve the satisfactory resolution of issues that were raised in the Correspondence Group and remain pending;

.7 the identification by a working group of specific technical issues that need to be addressed for the evaluation of the suitability of high manganese austenitic steel for cryogenic service, together with the information required to support informed decisions on the known risks associated with the new material, is the most suitable way forward;

.8 in lieu of amendments to the IGC and IGF Codes, the development of interim guidelines for the application of high manganese austenitic steel in cryogenic services would allow for its use and further refinement;

.9 in general, the data and test results submitted to the Sub-Committee with regard to high manganese austenitic steel cover all aspects requested in the Correspondence Group and indicate that the new material is suitable for cryogenic service;

.10 consideration of the suitability of high manganese austenitic steel for cryogenic service would benefit from the submission of full technical reports presenting detailed unfiltered test data in addition to the documentation that has been submitted to the Sub-Committee to date, which has mainly taken the form of summary results, as they would enable verification of the results;

.11 in order to fully consider design-specific application requirements, it is the prerogative of Administrations to request additional documentation not addressed by the IGC Code or the IGF Code;

.12 high manganese austenitic steel should not be incorporated into the IGC and IGF Codes until trial constructions and operation of ships with tanks made of the new material are carried out;

.13 interim guidelines of a more limited scope than those envisaged by the delegation of the Russian Federation (see also paragraph 4.5) could be developed, with a view to offering guidance on the procedure for considering and approving new metallic materials for cryogenic service, including cold rolled products and high manganese austenitic steel;

.14 the mechanism for using new materials is already provided in section 2.3 (Alternative design) of the IGF Code and section 1.3 (Equivalents) of the IGC Code;

.15 the process of evaluating the suitability of high manganese austenitic steel could be a paradigm for the consideration of other new materials for cryogenic service in the future, taking into account that, prior to the approval of the output relating to high manganese austenitic steel, no new metallic materials had been put forward for consideration since the adoption of the IGC Code in 1983; and

.16 the development of test acceptance criteria for high manganese austenitic steel for cryogenic service should be possible, taking into account that a ship with tanks made of the new material is close to being commissioned. The work of developing test acceptance criteria could potentially build upon the criteria developed by classification societies that were involved in the approval and certification of ships using the new material.

4.7 The Sub-Committee recalled that, notwithstanding interventions to the effect that the use of high manganese austenitic steel on gas-fuelled ships and liquefied gas tankers could be adequately addressed by applying the provisions for alternative design and arrangements (IGF Code) or equivalents (IGC Code), MSC 96 had tasked the Sub-Committee with evaluating the suitability of the above material with the expectation that progress would be made in that regard.

4.8 With regard to the proposal to develop guidelines that would formalize the process by which the Organization would evaluate new materials and approve their use (see also paragraphs 4.5 and 4.6.13), the Sub-Committee agreed that it fell outside the scope of the existing output on "Suitability of high manganese austenitic steel for cryogenic service and development of any necessary amendments to the IGC Code and IGF Code".

4.9 Having considered the above views and having noted that the majority of those who spoke supported the establishment of a working group, the Sub-Committee agreed that the following items could be progressed in order of priority:

.1 compilation of a comprehensive list of technical points that should be addressed in order to evaluate the suitability of the new material and ensure transparency of the process;

.2 identification of the information required to address the technical points; and

.3 development of test acceptance criteria based on the information available.

Establishment of a Working Group

4.10 Subsequently, the Sub-Committee established the Working Group on the Suitability of High Manganese Austenitic Steel for Cryogenic Service and instructed it, taking into account the comments made and decisions taken in plenary, to:

.1 prepare a full list of technical discussion points for assessing the suitability of high manganese austenitic steel for cryogenic service, based on documents CCC 4/4/1 and CCC 4/4/2;

.2 specify what information is required to address the technical discussion points, taking into account documents CCC 4/4/2, CCC 4/4/3, CCC 4/INF.3 and CCC 4/INF.17;

.3 if time permits, develop draft test acceptance criteria, based on the aforementioned information; and

.4 prepare draft terms of reference for a correspondence group for consideration by the Sub-Committee.

Report of the Working Group on Suitability of High Manganese Austenitic Steel for Cryogenic Service

4.11 Having considered the report of the Working Group on Suitability of High Manganese Austenitic Steel for Cryogenic Service (CCC 4/WP.4), the Sub-Committee approved it in general and endorsed the following:

.1 the Working Group's decision that consideration of the suitability of high manganese austenitic steel for cryogenic service should be limited to steel plates only;

.2 the list of technical discussion points for assessing the suitability of high manganese austenitic steel for cryogenic service, as set out in annex 1 to document CCC 4/WP.4;

.3 the information required to address the technical discussion points for assessing the suitability of high manganese austenitic steel for cryogenic service and draft test acceptance criteria, as set out in annex 2 to document CCC 4/WP.4; and

.4 the Working Group's decision that draft Interim guidelines for the application of high manganese austenitic steel for cryogenic service should be developed at this stage, instead of draft amendments to the IGC and IGF Codes.

4.12 Having noted the deliberations of the Working Group regarding how the Organization would benefit from the development of generic guidance on the procedure for considering and approving new metallic materials for cryogenic service, the Sub-Committee endorsed the Working Group's view that a justification for expansion of the existing output should be prepared accordingly for consideration by CCC 5, with a view to subsequent submission to the Committee, in accordance with the document on *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5).

Re-establishment of the Correspondence Group

4.13 Having considered the above matters and in order to progress the work intersessionally, the Sub-Committee decided to re-establish the Correspondence Group on Suitability of High Manganese Austenitic Steel for Cryogenic Service, under the coordination of Norway[2], and instructed it to:

.1 further consider the information required to address the technical discussion points for assessing the suitability of high manganese austenitic steel for cryogenic service, as set out in annex 2 to document CCC 4/WP.4, in the context of its applicability to steel plates for the construction of LNG fuel tanks under provisions of the IGF Code;

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.2 further consider the acceptance of the cross-weld tensile test carried out by the Republic of Korea in accordance with the rules of a classification society, taking into account that it did not meet the acceptance criteria in paragraph 6.5.3.5.1 of the IGC Code;

.3 decide on what requirements of the IGC Code should be referenced as test acceptance criteria for the ductile fracture toughness test;

.4 finalize the test acceptance criteria for high manganese austenitic steel for cryogenic service, in the context of its applicability to steel plates, taking into account the outcomes of subparagraphs .1 to .3 above;

.5 assess the suitability of high manganese austenitic steel for cryogenic service, in the context of its applicability to steel plates, based on the test acceptance criteria in subparagraph .4 above, taking into account the actual test reports, information regarding fatigue tests and results of the Charpy impact test (carried out in accordance with paragraph 6.5.3.4.4 of the IGC Code) to be provided by the Republic of Korea;

.6 if the suitability of high manganese austenitic steel for cryogenic service, in the context of its applicability to steel plates, is confirmed, develop draft Interim guidelines for the application of high manganese austenitic steel for cryogenic service;

.7 develop a justification for expansion of the existing output, with a view to developing generic guidance on the procedure for considering and approving new metallic materials for cryogenic service, for submission to the Committee, in accordance with MSC-MEPC.1/Circ.5; and

.8 submit a report to CCC 5.

Extension of the target completion year

4.14 Consequently, the Sub-Committee invited the Committee to extend the target completion year for this output to 2019.

5 AMENDMENTS TO THE IMSBC CODE AND SUPPLEMENTS

GENERAL

5.1 The Sub-Committee recalled that MSC 98 had adopted amendments (04-17) to the IMSBC Code by resolution MSC.426(98), which was expected to enter into force on 1 January 2019.

5.2 The Sub-Committee noted that, after consideration of the submissions under this agenda item, it would provide clear advice, instruction and authorization to E&T 29, in order to prepare draft amendments (05-19) to the IMSBC Code, for consideration at CCC 5.

REPORT OF E&T 26

5.3 The Sub-Committee considered the report of E&T 26 (CCC 4/5), together with the related documents submitted to the session and, having approved it in general, took action as indicated in paragraphs 5.4 to 5.25.

Amendment 04-17 to the IMSBC Code

5.4 The Sub-Committee noted that E&T 26 had finalized draft amendment 04-17 to the IMSBC Code for circulation in accordance with SOLAS article VIII, for adoption by MSC 98.

Consequential amendments to MSC.1/Circ.1395/Rev.2

5.5 The Sub-Committee noted that E&T 26 had agreed to some consequential amendments to MSC.1/Circ.1395/Rev.2 on *Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective* and requested the Secretariat to prepare draft MSC.1/Circ.1395/Rev.3 for submission to MSC 98 for approval. In this context, the Sub-Committee also noted that MSC 98 had approved MSC.1/Circ.1395/Rev.3 on *Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective*.

Fish meal

5.6 The Sub-Committee noted the Group's invitation to interested Member States and international organizations to submit proposals on a separate individual schedule for FISH MEAL Group C and that there were no related submissions to this session.

Palm kernel shells

5.7 The Sub-Committee endorsed the Group's view that additional consideration was needed with regard to the draft new individual schedule for palm kernel shells, and noted the Group's invitation to interested Member States and international organizations to submit proposals and that there were no related submissions to this session.

Direct Reduced Iron (D)

5.8 The Sub-Committee noted the discussions and deliberations of the Group with regard to the draft new individual schedule for Direct Reduced Iron (D), and the Group's invitation to interested Member States and international organizations to submit proposals to this session.

5.9 In this context, the Sub-Committee noted document CCC 4/INF.9 (IIMA), providing an update on progress made since E&T 26 towards a new individual schedule for DRI (D), in particular that initial analysis of the data had not revealed any definitive correlation between cargo properties and hydrogen evolution and that a more detailed regression analysis was now under way.

Ammonium Nitrate Based Fertilizer (non-hazardous)

5.10 The Sub-Committee noted that the Group urged the industry to provide more data and information on AMMONIUM NITRATE BASED FERTILIZER (non-hazardous), in particular on the different types of fertilizer and their specific properties that were being shipped under this schedule and on the necessity of the existing requirements for these different types of fertilizer. The Sub-Committee also noted the Group's invitation to interested Member States and international organizations to submit new proposals.

5.11 In this context, the Sub-Committee had for its consideration the following documents:

.1 CCC 4/5/9 (CEFIC), proposing amendments to the existing schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous). In accordance with the results of a test programme on a number of fertilizer products, the sponsor stated that ammonium nitrate based fertilizers (non-hazardous) do not propagate combustion, are not flammable solids, are not self-heating and do not show self-sustaining decomposition behaviour;

.2 CCC 4/INF.13 (CEFIC), providing a "clean" version of the amended schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous); and

.3 CCC 4/INF.14 (CEFIC), providing additional information on AMMONIUM NITRATE BASED FERTILIZER (non-hazardous), specifically, the report on the testing of five fertilizers according to UN Tests N1, N4 and S1, as conducted by the German Federal Institute for Materials Research and Testing (Bundesanstalt für Materialforschung und -Prüfung (BAM)) as well as the BAM "Opinion on Transport Classification", in order to support the proposal in document CCC 4/5/9.

5.12 With regard to document CCC 4/5/9, the Sub-Committee noted the following views expressed during the discussion:

.1 the tests carried out and efforts made by the industry should be acknowledged;

.2 the proposed amendments, in particular the reduction of hazard statements, carriage requirements and emergency procedures, are downgrading the hazards of such cargo and reducing awareness; and

.3 the test report by BAM does not contain a specific statement to the effect that the tested products are not liable to undergoing a self-sustaining exothermic decomposition when carried in bulk.

5.13 Following the discussion, the Sub-Committee also noted that:

.1 the existing individual schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) covers a wide range of different fertilizers and that the safety requirements vary depending on their specific properties, types and compositions;

.2 dividing the existing individual schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) into two schedules, i.e. for Group B and Group C, could be a way forward;

.3 in lack of the criteria for classification of Group B cargoes, the fertilizers could be differentiated by their composition or type;

.4 the practical experiences and lessons learned from incidents should be sufficient justification for reclassification;

.5 the relevant technical data and scientific justification for reclassification to Group B MHB(OH) had already been provided in documents CCC 2/5/24 and CCC 3/5/9 (Germany), referring to the research of the University of Edinburgh and relevant industry guidelines; and

.6 the incidents of **MV Cheshire** and **Purple Beach** may have an impact on the outcome of the ongoing discussion regarding the reclassification of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) and the investigation reports should be considered as soon as they are made available.

5.14 Following the discussion, the Sub-Committee decided:

.1 that the new submissions from CEFIC, in particular the test reports, do not satisfy the request from E&T 26 and that the proposed amendments to the existing individual schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) were not supported;

.2 that, at this stage, the reclassification for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) from Group C to Group B could not be achieved;

.3 to instruct the Working Group on IMSBC Code Matters to develop a draft CCC.1 circular on safety awareness for the transport of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous); and

.4 to instruct E&T 29 to carry out a comprehensive review on the existing schedule for AMMONIUM NITRATE BASED FERTILIZER (non-hazardous).

5.15 Subsequently, the Sub-Committee invited interested Member States and international organizations to provide more data and information on AMMONIUM NITRATE BASED FERTILIZER (non-hazardous) to E&T 29, and in particular, on the different types of fertilizer and the specific properties that were being shipped under this schedule and on the necessity of the existing requirements for these different types of fertilizer.

References within the IMSBC Code

5.16 The Sub-Committee endorsed the decision of the Group to keep the references within the Code as simple as possible and to improve consistency within the Code for this aspect at a future stage, possibly when preparing a consolidated version of the IMSBC Code.

Table for "Characteristics"

5.17 The Sub-Committee considered paragraphs 4 and 6.2 of document CCC 4/5/4 (China), commenting on document CCC 4/5 regarding the draft amendments to the table for "Characteristics", i.e. instead of directly referencing the "see 'hazards' section" in the "MHB" box of the amended "Characteristics" table, adding "If there is a "-" in the 'MHB' box of 'Characteristics' table, refer to the description in the 'hazards' section." after the form in paragraph 9.2.3.1.5 of the IMSBC Code.

5.18 Following the discussion, the Sub-Committee confirmed that, under the draft "Characteristics" table, the link between the "MHB" box and the "hazards" section was a reference only and that in doing so the "hazards" section is not made mandatory. In this context, the Sub-Committee agreed to amend the table for "Characteristics" and related parts

of the IMSBC Code, and instructed E&T 29 to further develop the amendments, based on the outcomes of E&T 26 (CCC 4/5, paragraph 4.6 and annex 6), with a view to inclusion in draft amendment 05-19 to the IMSBC Code.

5.19 The Sub-Committee also considered paragraphs 5 and 6.3 of document CCC 4/5/4 (China), commenting on document CCC 4/5 on the application of the amended table for "Characteristics" in all existing individual schedules in appendix 1 of the IMSBC Code.

5.20 During the discussion, the Sub-Committee noted the following views expressed on this matter:

.1 the notational reference for MHB cargoes should only apply to new individual schedules;

.2 a reclassification or reassessment of all existing MHB cargoes should not be conducted; and

.3 document CCC 2/5/26 (Germany) could be used to specify MHB notifications.

5.21 Having considered the above views, the Sub-Committee agreed that the amendments to the table for "Characteristics" should apply to all existing and new individual schedules in appendix 1 of the IMSBC Code. The Sub-Committee also instructed E&T 29 to incorporate the amended "Characteristics" into amendment 05-19 of the IMSBC Code, and to allocate a notational reference to the existing MHB cargoes, as much as possible, based on the information contained in the "Hazard" section and other additional information, as appropriate.

Consolidated version of the IMSBC Code

5.22 The Sub-Committee endorsed the Group's recommendation to follow a similar approach to that of the IMDG Code and to prepare a consolidated version of the IMSBC Code, starting from amendment 05-19 to the IMSBC Code.

Definition of materials hazardous only in bulk (MHB)

5.23 The Sub-Committee noted that the Group could not reach an agreement on the need to amend the definition of Materials hazardous only in bulk (MHB). In this context, the Sub-Committee also noted paragraphs 3 and 6.1 of document CCC 4/5/4 (China), proposing to deal prudently with the modification of the MHB definition, and not take action before reviewing the enactment process of the BC Code and assessing the effect of amending the definition of MHB.

Seed Cake

5.24 The Sub-Committee noted the discussions and deliberations of the Group with regard to the revision of individual schedules for SEED CAKE (CCC 4/5, paragraphs 5.1 to 5.2).

Editorial correction in resolution MSC.393(95)

5.25 The Sub-Committee noted that the Group had identified an editorial correction in resolution MSC.393(95), i.e. in paragraph 7.3.1.2, the reference to "4.2.2.9, 4.2.2.10" should be replaced by "4.2.2.1.9, 4.2.2.1.10". In this context, the Sub-Committee also noted that document MSC 95/22/Add.2/Corr.1 had been issued accordingly on 26 September 2016.

Report of the Correspondence Group on Evaluation of properties of bauxite and revision of individual schedules for SEED CAKE

Revision of draft individual schedules for SEED CAKE

5.26 The Sub-Committee considered part 1 of the report of the Correspondence Group on the revision of draft individual schedules for SEED CAKE (CCC 4/5/1), together with the related documents submitted to the session and, having approved it in general, took action as indicated in paragraphs 5.27 to 5.35.

Draft individual schedules for MHB and Group C cargoes

5.27 Having considered the draft individual schedules for MHB and Group C cargoes as prepared by the Correspondence Group (CCC 4/5/1, annexes 2 and 3), the Sub-Committee noted that a uniform classification approach was necessary for cargoes with similar properties and that, in the long term, the criteria for classification of MHB(OH) cargoes should be developed.

5.28 Following the discussion, the Sub-Committee also noted that:

.1 the absence of guidance for determining whether a cargo is cohesive or non-cohesive is open to broad interpretation and may result in catastrophic consequences;

.2 the classification of cohesive/non-cohesive properties of solid bulk cargoes may be outside the scope of this agenda item;

.3 the discussion on classification of cohesive/non-cohesive properties of solid bulk cargoes has a long history and that it has been very difficult to reach a conclusion; and

.4 consequential amendments to appendix 3 to the Code may be required.

5.29 In this context, the Sub-Committee invited interested Member States and international organizations to submit more information, i.e. regarding the cohesiveness/non-cohesiveness of cargoes and the properties or hazards of these cargoes with regard to dust explosion, to E&T 29.

5.30 Subsequently, the Sub-Committee instructed the Working Group on IMSBC Code Matters to further develop the draft individual schedules for MHB and Group C cargoes, based on annexes 2 and 3 to document CCC 4/5/1.

Draft amendments to the IMSBC Code for the classification of SEED CAKE cargoes

5.31 Having considered the draft amendments to section 9 of the Code as prepared by the Correspondence Group (CCC 4/5/1, annexes 4 and 5), the Sub-Committee instructed the Working Group on IMSBC Code Matters to further develop the draft amendments to the IMSBC Code for the classification of SEED CAKE cargoes, based on annexes 4 and 5 to document CCC 4/5/1.

Amendments to individual schedules for UN 1386 (a), UN 1386 (b) and UN 2217

5.32 Having noted that the Correspondence Group had identified an error in the authentic text (CCC 4/5/1, paragraph 39), the Sub-Committee decided to instruct E&T 29 to include this correction in draft amendment 05-19 to the IMSBC Code.

5.33 The Sub-Committee noted the discussion of the Correspondence Group on the following matters:

.1 the amendments to the sections for "Precautions" of individual schedules for UN 1386 (b) and UN 2217 with regard to closure of hatches;

.2 the provisions on the use of carbon dioxide in the sections for "Precautions" of the individual schedules for UN 1386 (b) and UN 2217; and

.3 the mandatory application provision of the individual schedule for UN 2217.

5.34 After consideration, the Sub-Committee instructed the Working Group on IMSBC Code Matters to further consider and prepare the amendments to the draft individual schedules for SEED CAKE UN 1386 (a), SEED CAKE UN 1386 (b) and SEED CAKE UN 2217, and the possible consequential amendments to the IMDG and IMSBC Codes, taking into account paragraphs 40 to 46 and annex 6 to document CCC 4/5/1.

5.35 In this regard, the Sub-Committee invited interested Member States and international organizations to submit proposals towards the possible harmonization within the IMDG and IMSBC Codes and the UN Model Regulations.

Evaluation of properties of BAUXITE

5.36 Before considering part 2 of the report of the Correspondence Group, the Sub-Committee considered document CCC 4/5/8 (Australia, Brazil and Malaysia), supporting the work of the Global Bauxite Working Group (GBWG) and the outcome of the Correspondence Group, and also proposing some editorial corrections to the draft new test procedure for determining the TML for bauxite cargoes. In this context, the Sub-Committee noted the proposal that further discussions on dynamic separation as well as a consideration of the relevance of CCC.1/Circ.2 were needed. The Sub-Committee also noted documents CCC 4/INF.10 and Corr.1 (Australia, Brazil and Malaysia), providing the GBWG's final report (Report on Research into the Behaviour of Bauxite during Shipping and the associated peer review letter from Imperial College, London).

5.37 Following a general discussion, the Sub-Committee expressed its appreciation for the research work carried out by the GBWG in progressing the development of safety requirements regarding bauxite cargoes and noted that the outcome of the deliberations of the GBWG would contribute to the improvement of the safety of carriage of bauxite.

5.38 Subsequently, the Sub-Committee considered part 2 of the report of the Correspondence Group on the evaluation of properties of bauxite (CCC 4/5/1/Add.1), together with the related documents submitted to the session and, having approved it in general, took action as indicated in paragraphs 5.39 to 5.49.

Hazard and criteria for Group A and Group C cargoes

5.39 Having considered the section for Hazard in the draft individual schedule for Group A cargoes as prepared by the Correspondence Group (CCC 4/5/1/Add.1, paragraphs 5 and 6 and annex 2), the Sub-Committee instructed the Working Group on IMSBC Code Matters to finalize the section for Hazard in the draft individual schedule for Group A cargoes, based on annex 2 to document CCC 4/5/1/Add.1.

5.40 After consideration, the Sub-Committee agreed, in principle, with the criterion for Group A and Group C cargoes proposed by the GBWG and agreed by the Correspondence Group. Furthermore, the Sub-Committee instructed the Working Group on IMSBC Code Matters to further consider the mandatory application provisions in the individual schedules for Group A and Group C cargoes.

New phenomenon – dynamic separation

5.41 Having considered the recommendation regarding dynamic separation by the GBWG and comments on the recommendation (CCC 4/5/1/Add.1, paragraphs 10 and 11), the Sub-Committee noted the following views expressed on this matter:

.1 the new phenomenon of dynamic separation should not impact on the finalization of the draft individual schedules of bauxite, and could be a long-term consideration initiated by the Maritime Safety Committee;

.2 both liquefaction and dynamic separation are moisture-related mechanisms and there is a need to expand the existing definition of Group A to cover the new phenomenon of dynamic separation;

.3 the impact of the new phenomenon of dynamic separation on the IMSBC Code needs to be further examined;

.4 some existing Group A cargoes may not be liable to liquefaction, but to dynamic separation;

.5 the test method for the Transportable Moisture Limit (TML) and mechanisms for dealing with the identified risks regarding dynamic separation are the same as for other Group A cargoes; and

.6 there is a need to raise the awareness of seafarers on the safety requirements related to dynamic separation.

5.42 Following the discussion, the Sub-Committee agreed that the new phenomenon of dynamic separation should be considered in the long term and decided to invite interested Member States and international organizations to submit proposals to the Maritime Safety Committee, with a view to amending the IMSBC Code to address this moisture-related mechanism.

Draft new test procedure for determining the TML for bauxite cargoes

5.43 The Sub-Committee agreed, in principle, to include the new test procedure for determining the TML for bauxite cargoes in appendix 2 to the IMSBC Code.

5.44 The Sub-Committee also agreed, in principle, with the draft new test procedure for determining the TML for bauxite cargoes.

5.45 Subsequently, the Sub-Committee instructed the Working Group on IMSBC Code Matters to finalize the draft new test procedure for determining the TML for bauxite cargoes, based on annex 1 to document CCC 4/5/1/Add.1.

Relevance of CCC.1/Circ.2

5.46 Having recalled the comments in document CCC 4/5/8 regarding the relevance of CCC.1/Circ.2, i.e. the draft new test procedures may be employed by competent authorities, the Sub-Committee agreed to instruct the Working Group on IMSBC Code Matters to prepare a revised circular (CCC.1/Circ.2), for consideration by the Sub-Committee.

Draft individual schedules for Group A and C cargoes

5.47 The Sub-Committee had for its consideration the following issues from part 2 of the report of the Correspondence Group (CCC 4/5/1/Add.1):

.1 the text in the section for Loading of the draft individual schedule for Group A cargoes;

.2 the text in the section for Carriage of the draft individual schedule for Group A cargoes; and

.3 the text in the section for Precautions of the draft individual schedules for both Group A and Group C cargoes.

5.48 After consideration, the Sub-Committee instructed the Working Group on IMSBC Code Matters to finalize the draft individual schedules for Group A and C cargoes, based on annexes 2 and 3 to document CCC 4/5/1/Add.1.

Consequential amendments to the IMSBC Code

5.49 The Sub-Committee agreed, in principle, with the draft consequential amendments to appendix 2 to the Code. Having noted that consequential amendments to appendices 4 and 5 to the Code were necessary, the Sub-Committee instructed the Working Group on IMSBC Code Matters to prepare the corresponding draft consequential amendments to the IMSBC Code.

PROPOSALS FOR AMENDMENT 05-19 TO THE IMSBC CODE

Amendments to existing individual schedules and provisions in the IMSBC Code

Self-Heating Coal and Information Regarding the Australian Industry Self-Heating Coal Research Project

5.50 The Sub-Committee considered document CCC 4/5/3 (Australia), providing information regarding the self-heating properties of coal and the ongoing coal self-heating research project being undertaken in Australia, and noted the summary of the need for research and the goals of the project by the Australian Coal Industry's Research Program (ACARP) as well as a copy of the determination which allows coal to be declared as MHB (SH) based on the results of tests carried out in accordance with section 33.3.1.6 of the UN Manual of Tests and Criteria, issued by the Australian Maritime Safety Authority (AMSA). In this context, the delegation of Germany informed the Sub-Committee that the German research institute BAM was currently working on this issue and would further cooperate with interested Member States in order to progress on this matter.

5.51 The Sub-Committee expressed its general support for the proposal contained in document CCC 4/5/3, and encouraged interested Member States and international organizations to continue working on this issue.

Test Methods to Determine Corrosivity of Solid Bulk Cargoes

5.52 The Sub-Committee considered document CCC 4/5/11 (Australia, Canada and IIMA), providing information on the research programmes being undertaken by a Global Industry Alliance, in order to better understand the assessment of corrosion of steel by solid bulk cargoes and to identify an appropriate test protocol for assessing the corrosivity of solid bulk cargoes.

5.53 The Sub-Committee expressed its general support for the proposal contained in document CCC 4/5/11, and encouraged interested Member States and international organizations to continue working on this issue.

Review of the test methods given in the IMSBC Code for classifying materials which evolve flammable gas when wet

5.54 The Sub-Committee considered document CCC 4/5/6 (United Kingdom), commenting on the criteria for classifying cargoes that evolve flammable gas when wet – MHB (WF), and in particular that provisions 9.2.3.4.2 (MHB (WF)) and 9.2.3.5.2 (MHB (WT)) of the IMSBC Code could be revised to require the MHB tests to use a larger sample, i.e. 1 kg, and to request that the test substance be fully saturated during the course of the test.

5.55 During the discussion, the Sub-Committee noted the following views expressed on this matter:

.1 the proposal may lead to an amendment to the UN Manual of Tests and Criteria, which could be initiated from the UN Committee of Experts on the Transport of Dangerous Goods; and

.2 more information and test reports are needed in order to further progress the modification on the criteria for classification of MHB (WF) and MHB (WT) cargoes.

5.56 Subsequently, the Sub-Committee agreed to forward document CCC 4/5/6 to E&T 29 for further consideration, and invited interested Member States and international organizations to submit more information and test reports to E&T 29.

Guidance given within the IMSBC Code to Administrations who are commencing a Tripartite Agreement

5.57 The Sub-Committee considered document CCC 4/5/7 (United Kingdom), proposing to amend the IMSBC Code to include more detailed guidance on the process for commencing a tripartite agreement, and in particular:

.1 to consider if additional guidance should be provided within the IMSBC Code for the methods by which parties can commence and track a tripartite agreement; and

.2 should it be decided that additional tripartite agreement guidance is to be issued, to consider if this might be supported by an online platform for hosting tripartite agreements.

5.58 Following the discussion, the Sub-Committee unanimously agreed to amend the IMSBC Code to include more detailed guidance on the method used by a competent authority to initiate a tripartite agreement that establishes the preliminary conditions of carriage for transporting a cargo not listed in the Code.

5.59 Having noted the possible administrative burdens related to a dedicated area for hosting the IMSBC Code tripartite agreements within the IMO website, the Secretariat advised the Sub-Committee of its willingness to cooperate with interested Member States in order to investigate a way forward, taking into account the ongoing comprehensive review on data and knowledge management for the Organization.

5.60 Subsequently, the Sub-Committee invited interested Member States and international organizations to submit proposals regarding the inclusion in the IMSBC Code of more detailed guidance on the method used by a competent authority to initiate a tripartite agreement.

Editorial amendment to the foreword of the IMSBC Code

5.61 The Sub-Committee considered document CCC 4/5/10 (Philippines), proposing an amendment to the "Foreword" of the IMSBC Code, i.e. amend "The IMSBC Code that was adopted by resolution MSC.268(85) was recommended to Governments for adoption or for use as the basis for national regulations in pursuance of their obligations under regulation of the SOLAS Convention, as amended." to read "The IMSBC Code that was adopted by resolution MSC.268(85) was for adoption and implementation of Governments or for use as the basis for national regulations in pursuance of their obligations under the SOLAS Convention, as amended."

5.62 After consideration, the Sub-Committee agreed to the proposal, in principle, and decided to refer the document to E&T 29 for consideration and incorporation, as appropriate, into draft amendment 05-19 to the IMSBC Code.

PROPOSALS FOR NEW INDIVIDUAL SCHEDULES

Metal Sulphide Concentrates, Self-Heating, UN 3190

5.63 The Sub-Committee considered documents CCC 4/5/2, CCC 4/INF.5 and CCC 4/INF.6 (Australia), proposing a new individual schedule for Metal Sulphide Concentrates, Self-heating, UN 3190 as a Group A and B cargo and providing the IMO Solid Bulk Cargo Information Reporting Questionnaire and supporting test documentation and reports.

5.64 During the ensuing discussion, the Sub-Committee noted that there were currently already two similar individual schedules in the IMSBC Code, i.e. METAL SULPHIDE CONCENTRATES and MINERAL CONCENTRATES. In this context, the Sub-Committee noted that the proposed new individual schedule could be limited to copper concentrates, in order to avoid possible confusion.

5.65 After consideration, the Sub-Committee agreed to the proposal, in principle, and decided to refer these documents to E&T 29 for consideration and incorporation, as appropriate, into draft amendment 05-19 to the IMSBC Code.

Brucite

5.66 The Sub-Committee considered documents CCC 4/5/5 and CCC 4/INF.8 (China), proposing a new individual schedule for Brucite as a Group C cargo and providing the supporting documentation, such as the IMO Solid Bulk Cargo Information Reporting Questionnaire, the Material Safety Data Sheet and related test reports.

5.67 After consideration, the Sub-Committee agreed to the proposal, in principle, and decided to refer these documents to E&T 29 for consideration and incorporation, as appropriate, into draft amendment 05-19 to the IMSBC Code.

ESTABLISHMENT OF A WORKING GROUP

5.68 The Sub-Committee established the Working Group on IMSBC Code Matters and instructed it, taking into account the comments and decisions made in plenary, to:

.1 finalize the draft new test procedure for determining the TML for bauxite cargoes, based on annex 1 to document CCC 4/5/1/Add.1 and the annex to document CCC 4/5/8;

.2 finalize the draft individual schedules for Group A and Group C bauxite cargoes, based on annexes 2 and 3 to document CCC 4/5/1/Add.1;

.3 prepare consequential amendments to the IMSBC Code regarding bauxite cargoes;

.4 prepare a revised CCC.1/Circ.2 on carriage of bauxite that may liquefy;

.5 prepare a draft CCC.1 circular on safety awareness for the transport of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous);

.6 further develop the draft individual schedules for MHB and Group C seed cake cargoes, based on annexes 2 and 3 to document CCC 4/5/1;

.7 further develop the draft amendments to section 9 of the IMSBC Code on the classification of seed cakes, based on annexes 4 and 5 to document CCC 4/5/1; and

.8 develop the amendments to individual schedules for SEED CAKE UN 1386 (a), SEED CAKE UN 1386 (b) and SEED CAKE UN 2217, and the consequential amendments to the IMDG and IMSBC Codes, taking into account document CCC 4/5/1.

REPORT OF THE WORKING GROUP

5.69 Having considered the report of the Working Group (CCC 4/WP.5) on IMSBC Code Matters, the Sub-Committee approved it, in general, and took action as indicated in paragraphs 5.70 to 5.82 below.

Draft new test procedure for determining the TML for bauxite cargoes

5.70 The Sub-Committee endorsed the draft Test procedure for determining the TML for Bauxite, as set out in annex 1 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code.

Draft Individual schedule for Bauxite of Group A

5.71 The Sub-Committee endorsed the draft Individual schedule for Bauxite of Group A, as set out in annex 2 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code. In this context, the Sub-Committee also instructed E&T 29 to make the necessary editorial modifications to the Characteristics table of the draft new individual schedule for Bauxite of Group A, in order to harmonize the table with the amendments (05-19) to the IMSBC Code.

Draft amendments to the individual schedule for Bauxite of Group C

5.72 The Sub-Committee endorsed the draft amendments to the Individual schedule for Bauxite of Group C, as set out in annex 3 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code.

Draft consequential amendments to the IMSBC Code

5.73 The Sub-Committee agreed, in principle, to the draft consequential amendments to appendices 2 (Laboratory test procedures, associated apparatus and standards), 4 (Index) and 5 (Bulk Cargo Shipping Names in three languages (English, Spanish and French)) to the Code regarding Bauxite cargoes, as set out in annex 4 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code.

Revised CCC.1 circular on the Carriage of Bauxite

5.74 The Sub-Committee approved CCC.1/Circ.2/Rev.1 on the *Carriage of Bauxite which may liquefy*. Bearing in mind the urgency for this information to be available to all stakeholders, the Sub-Committee instructed the Secretariat to issue the circular as soon as possible after the session and invited the Committee to endorse this decision.

5.75 In this context, the Sub-Committee requested the Secretariat to inform the HTW Sub-Committee regarding CCC.1/Circ.2/Rev.1, with a view to promoting awareness of the safe carriage of bauxite.

CCC.1 circular on the Carriage of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)

5.76 The Sub-Committee approved CCC.1/Circ.4 on the *Carriage of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous).* Bearing in mind the urgency for this information to be available to all stakeholders, the Sub-Committee instructed the Secretariat to issue the circular as soon as possible after the session and invited the Committee to endorse this decision.

Draft amendments related to seed cake

5.77 The Sub-Committee noted the Group's discussion with regard to the words "exclusion" and "exemption" in the Loading section in the draft individual schedules for MHB and Group C seed cake cargoes, in particular that the word "exempted" may cause confusion as it may imply that an Exemption Certificate should be issued by the competent Authority for that cargo (CCC 4/WP.5, paragraph 15).

5.78 Having considered the need for the IMSBC Code to provide necessary guidance on the test method to assess the cohesive properties of solid bulk cargoes, the Sub-Committee invited interested Member States and international organizations to submit proposals, in particular on the information regarding the cohesive properties, to E&T 29.

5.79 The Sub-Committee agreed, in principle, to the draft individual schedule for MHB seed cake cargoes, as set out in annex 7 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code.

5.80 The Sub-Committee agreed, in principle, to the draft individual schedule for Group C seed cake cargoes, as set out in annex 8 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code.

5.81 The Sub-Committee endorsed the Group's decision that the draft amendments to section 9 of the IMSBC Code should not be further developed/finalized at this stage.

5.82 The Sub-Committee agreed, in principle, to the draft amendments to individual schedules for SEED CAKE UN 1386 (b) and SEED CAKE UN 2217, as set out in annex 9 to document CCC 4/WP.5, with a view to inclusion in the draft amendments (05-19) to the IMSBC Code.

DRAFT AMENDMENT 05-19 TO THE IMSBC CODE AND INSTRUCTIONS TO THE E&T GROUP

Instructions to the E&T Group

5.83 Having considered the above matters, the Sub-Committee instructed E&T 29 to prepare the draft amendments (05-19) to the IMSBC Code, based on the documents submitted to CCC 4 and related documents submitted to E&T 29, taking into account comments made and decisions taken by the Sub-Committee, and submit a written report to CCC 5, and invited the Committee to endorse this decision.

5.84 The Sub-Committee also instructed E&T 29 to consider new proposals, if submitted, and advise CCC 5 accordingly.

5.85 The Sub-Committee noted that the provisional agenda for E&T 29 would be available in due course as document E&T 29/1.

Model course for IMSBC Code

5.86 Having noted that the comprehensive decisions taken during this session, e.g. draft amendments regarding bauxite, modifications of the table of "Characteristics" and consolidated version of the IMSBC Code, the Sub-Committee noted that a model course on the IMSBC Code could be beneficial. In this context, the Secretariat advised the Sub-Committee of its willingness to cooperate with interested Member States in order to initiate the development of a model course at a future stage.

6 AMENDMENTS TO THE IMDG CODE AND SUPPLEMENTS

GENERAL

6.1 The Sub-Committee recalled that MSC 96 had adopted amendments (38-16) to the IMDG Code by resolution MSC.406(96), which was expected to enter into force on 1 January 2018.

6.2 The Sub-Committee also recalled that CCC 3 had instructed the Editorial and Technical Group (E&T 27) to prepare the draft amendments (39-18) to the IMDG Code and the draft editorial corrections to amendment 38-16 to the IMDG Code.

6.3 The Sub-Committee noted that, after consideration of the submissions under this agenda item, it should provide clear advice, instruction and authorization to E&T 28, in order to finalize the draft amendments (39-18) to the IMDG Code, with a view to adoption at MSC 99 in 2018.

REPORT OF E&T 27

6.4 The Sub-Committee considered the report of E&T 27 (CCC 4/6), together with the related documents submitted to the session and, having approved it in general, took action as indicated in paragraphs 6.5 to 6.25.

Draft editorial corrections to amendment 38-16 to the IMDG Code

6.5 The Sub-Committee agreed, in principle, to the draft editorial corrections to amendment 38-16 to the IMDG Code, as prepared by E&T 27 (CCC 4/6, annex 1) and referred the document to E&T 28, together with document CCC 4/6/6 (France), presenting editorial corrections to the IMDG Code amendment 38-16, for consideration and finalization.

6.6 Having noted that E&T 27 requested the Secretariat to draw the IAEA's attention to the Transport index (TI) and Criticality safety index (CSI) limits for the hold and the total vessel with a view to harmonizing the IMDG Code and SSR-6, the Sub-Committee also noted that the IAEA's thirty-fourth session of the Transport Safety Standards Committee (TRANSSC 34) recognized that the issue may need to be further clarified. However, as the existing TI and CSI limits were introduced into SSR-6 back in the 1970s, more time was needed for further investigation. In this context, the Sub-Committee requested the Secretariat to follow the IAEA's discussion on this matter and provide updates to the Sub-Committee accordingly.

Draft amendment 39-18 to the IMDG Code

Provisions for batteries installed in cargo transport units

6.7 The Sub-Committee considered document CCC 4/6/11 (China), proposing a new special provision on the transportation of batteries (UN 2800) installed in cargo transport units, acting as the emergency power supply equipment of the container data centres secured in the same cargo transport units, which also consist of fixed fire suppression systems (fire extinguishers) and air-conditioning systems (refrigerating machines).

6.8 Following the discussion, the Sub-Committee noted the following views expressed on this matter:

.1 the classification of the article should be further considered and UN 3547 could be assigned;

.2 the proposal is a multimodal issue and the discussion should be initiated from UN Sub-Committee of Experts on the Transport of Dangerous Goods (UNSCETDG); and

.3 the impacts of the proposed draft special provision may unintentionally go beyond the scope of the IMDG Code.

6.9 After consideration, the Sub-Committee agreed to refer document CCC 4/6/11 to E&T 28 for further consideration, with a view to providing recommendations to the delegation of China on the application of new provisions on the classification of the articles, in order to prepare a future proposal to UNSCETDG, if appropriate.

Battery-vehicles

6.10 The Sub-Committee considered document CCC 4/6/13 (CEFIC), proposing a set of amendments to the IMDG Code regarding the sea transport of battery-vehicles for compressed gases, and noted that these battery-vehicles were currently shipped under exemptions, in accordance with paragraph 7.9.1.2 of the IMDG Code.

6.11 During the discussion, the Sub-Committee noted the following views expressed on this matter:

.1 the existing requirements on multiple-element gas containers (MEGCs) and road tank vehicles should be applicable to the sea transport of battery-vehicles, the introduction of a new IMO type 9 tank is not necessary;

.2 the use of battery-vehicles to transport compressed gases is for short international voyages only;

.3 the proposed requirements for a battery-vehicle to deliver a similar safety level to MEGCs, and the necessary deviations are caused by its nature as a vehicle, not a container framework;

.4 the relation between battery-vehicles, MEGCs and road tank vehicles should be further clarified; and

.5 the proposed amendments to the IMDG Code are related to vehicles and will have no direct impact on the UN Model Regulations.

6.12 After consideration, the Sub-Committee decided to refer document CCC 4/6/13 to E&T 28 for further consideration.

Fish meal

6.13 The Sub-Committee considered the following documents:

.1 CCC 4/6/14 (Peru), commenting on the report of E&T 27 (CCC 4/6, annex 2) and proposing amendments to the IMDG Code regarding FISH MEAL (FISH SCRAP), STABILIZED (UN 2216), and in particular the removal of the restriction of 3,000 kg in SP 308 and the deletion of SP 945; and

.2 CCC 4/INF.12 (Peru), providing additional data (the complete self-heating test results), with a view to supporting proposals regarding the draft amendments to SP 308 and SP 945 as contained in document CCC 4/6/14.

6.14 During the discussion, the Sub-Committee noted that the restriction of 3,000 kg in SP 308 was introduced by E&T 27 due to the lack of test reports on bulk transport of fish meal. Having noted the additional information provided in documents CCC 4/6/14 and CCC 4/INF.4, the Sub-Committee agreed that the amendments related to fish meal could be finalized accordingly.

6.15 In this context, the Sub-Committee agreed, in principle, to the above proposals and decided to refer documents CCC 4/6/14 and CCC 4/INF.12 to E&T 28 for further consideration and inclusion, if appropriate, in the draft amendments (39-18) to the Code.

6.16 Subsequently, the Sub-Committee agreed, in principle, to draft amendment 39-18 to the IMDG Code (parts 1 and 2), as prepared by E&T 27 (CCC 4/6, annexes 2 and 3) and agreed to refer these draft amendments to E&T 28 for finalization.

6.17 The Sub-Committee noted that E&T 27 had requested the Secretariat to invite the UNSCETDG to consider relevant amendments to the IMDG Code, as highlighted in annexes 1 and 2 to document CCC 4/6, and that the relevant amendments to the IMDG Code had been considered by the fifty-first session of the UNSCETDG and had been incorporated into the UN Model Regulations, as appropriate. In this context, the Sub-Committee also noted that the new corrections to the twentieth revised edition of UN Model Regulation (ST/SG/AC.10/C.3/102/Add.1), as adopted by the fifty-first session of the UNSCETDG, would be incorporated into amendment 39-18 to the IMDG Code, as appropriate.

6.18 Finally, the Sub-Committee considered document CCC 4/6/17 (ICHCA), providing detailed comments and observations on the draft editorial corrections to amendment 38-16 (CCC 4/6, annex 1) and draft amendment 39-18 (CCC 4/6, annexes 2 and 3) to the IMDG Code prepared by E&T 27. After consideration, the Sub-Committee agreed to refer the above document to E&T 28 for detailed consideration and possible incorporation into the editorial corrections to amendment 38-16 or draft amendment 39-18 to the IMDG Code, as appropriate.

EmS Guide

6.19 The Sub-Committee had for its consideration document CCC 4/6/9 (Germany), proposing to reinsert special cases for UN 3332 and UN 3333 in schedule S-S of the EmS Guide. Having noted that the special cases for UN 3332 and UN 3333 were introduced into the EmS Guide in MSC.1/Circ.1025 but were deleted in the draft consolidated version of the EmS Guide, the Sub-Committee agreed to reinsert special cases for UN 3332 and UN 3333 in schedule S-S of the EmS Guide and agreed to refer the proposed amendments as contained in document CCC 4/6/9 to E&T 28 for incorporation in the draft consolidated version of the EmS Guide.

6.20 The Sub-Committee also considered the following documents:

.1 CCC 4/6/15 (Islamic Republic of Iran), providing information on two separate fire incidents related to dangerous goods which occurred in Iranian container terminals, and in particular the lessons learned from the method used to extinguish the fire, proposing that the EmS Guide (F-A, S-Q) regarding UN 3377 and UN 3378 should be amended to an appropriate fire schedule and that column 15 of the Dangerous Goods List in the IMDG Code should also be amended accordingly; and

.2 CCC 4/6/16 (ICHCA), commenting on document CCC 4/6/15 and proposing to review the *Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas* (MSC.1/Circ.1216), with a view to helping ports and terminals handle and store dangerous goods in an appropriate manner and prepare themselves for emergency response in the event of an incident.

6.21 With regard to the EmS Guide (F-A, S-Q) for UN 3377 and UN 3378, the Sub-Committee noted that UN 3377 Sodium Perborate Monohydrate and UN 3378 Sodium Carbonate Proxy Hydrate were oxidizing substances but not combustible. In case of fire, the water spray was mainly for cooling down the surroundings of these substances, and the source of the fire as well as its possible reaction with water should also be taken into account. In this context, the Sub-Committee also noted that, in order to carry out a full analysis, more detailed reports of the incidents referred to in document CCC 4/6/15 were needed and, therefore, agreed not to amend the existing EmS schedules (F-A, S-Q) for UN 3377 and UN 3378.

6.22 During the discussion, the Sub-Committee also highlighted that the EmS Guide contained the emergency response procedures and guidelines for ships specifically and they may not always be the best option for operations in a port area. Subsequently, the Sub-Committee agreed that further guidance on emergency responses, in particular the safety advice for seafarers, could be developed at a future stage and encouraged interested Member States and international organizations to continue working on this issue and submit a concrete proposal to a future session.

6.23 Following the discussion on the proposed review of MSC.1/Circ.1216, the Sub-Committee noted the following views expressed on this matter:

.1 the implementation of MSC.1/Circ.1216 should be further enhanced;

.2 MSC.1/Circ.1216 could be used as a basis for safety legislations on dangerous cargo operations and related activities in port areas;

.3 a gap analysis on the MSC.1/Circ.1216 could be initiated; and

.4 a review of MSC.1/Circ.1216 could be beneficial to the emergency responses and operations of dangerous goods in ports. However, an authorization from Maritime Safety Committee is necessary.

6.24 After consideration, the Sub-Committee encouraged international organizations to advise their respective memberships accordingly, with a view to improving the safe transport of dangerous cargoes and related activities in port areas. Meanwhile, the Sub-Committee also invited interested Member States and international organizations to submit a proposal for a new output to the Maritime Safety Committee in accordance with the provisions of the document on the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5).

6.25 Subsequently, the Sub-Committee agreed, in principle, to draft a consolidated Revised Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS) Guide (CCC 4/6, annex 4) and refer it to E&T 28 for finalization, with a view to approval at MSC 99 in 2018.

AMENDMENT 39-18 TO THE IMDG CODE AND SUPPLEMENTS

Clarification in SP 963 for UN 3496 nickel-metal hydride batteries

6.26 The Sub-Committee considered document CCC 4/6/1 (Germany), proposing to amend SP 963 in order to clarify the exemption provided for nickel-metal hydride button cells, nickel-metal hydride cells or batteries packed with or contained in equipment.

6.27 During the discussion, the Sub-Committee confirmed that the Nickel Metal Hydride (NiMH) button cells should be exempted in any case. In this context, the Sub-Committee noted that for entry UN 3496, column 17 of the Dangerous Goods List should also be amended accordingly.

6.28 Subsequently, the Sub-Committee agreed, in principle, to the above proposal and to refer document CCC 4/6/1 to E&T 28 for further consideration and inclusion, if appropriate, in the draft amendments (39-18) to the Code.

Segregation code SG1

6.29 The Sub-Committee considered document CCC 4/6/2 (Germany), proposing to amend the description of segregation code SG1 in order to clarify its intention and meaning, in particular that the segregation should take account of the (main) class as well as of the subsidiary risk.

6.30 Having noted that the proposed draft text for SG 1 could be further improved, the Sub-Committee agreed, in principle, to this proposal and to refer document CCC 4/6/2 to E&T 28 for further consideration and inclusion, if appropriate, in the draft amendments (39-18) to the Code.

Segregation provisions for uranium hexafluoride

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

.1 CCC 4/6/3 (Germany), proposing to amend the segregation codes and Dangerous Goods List, and to adapt the segregation requirements for uranium hexafluoride, in order to reflect the additional risk of class 6.1; and

.2 CCC 4/6/12 (WNTI), proposing to amend the segregation codes and Dangerous Goods List, and to adapt the segregation requirements for uranium hexafluoride, in order to reflect the additional risk of class 6.1, and in particular that the requirements for segregation shall be a combination of those in table 7.2.4 for class 6.1, 7 and 8 for UN 2977 and UN 2978, and for class 6.1 and 8 for UN 3507.

6.32 Following the discussion, the Sub-Committee agreed to amend the segregation codes and Dangerous Goods List, and to adapt the segregation requirements for uranium hexafluoride, in order to reflect the additional risk of class 6.1. Furthermore, the Sub-Committee decided that the segregation requirements should not be mixed with stowage requirements.

6.33 In this context, the Sub-Committee instructed E&T 28, based on document CCC 4/6/3, to further develop the related draft amendments for inclusion, if appropriate, in the draft amendments (39-18) to the Code.

Packing instruction P403

6.34 The Sub-Committee considered document CCC 4/6/4 (Germany), proposing to clarify the application of special packing provision PP31 in packing instruction P403, with a view to eliminating the inconsistency, i.e. in packing instruction P403 the words "except for solid fused material" should be deleted.

6.35 After consideration, the Sub-Committee agreed, in principle, to this proposal and to refer this document to E&T 28 for further consideration and inclusion, if appropriate, in the draft amendments (39-18) to the Code.

Fumigated cargo transport unit (UN 3359) and MSC.1/Circ.1361

6.36 The Sub-Committee considered document CCC 4/6/5 (Germany), reviewing the structure and content of the provisions on fumigated cargo transport units and proposing amendments to the IMDG Code, in particular to delete the mandatory reference to MSC.1/Circ.1361 in the IMDG Code.

6.37 During the discussion, the Sub-Committee noted the following views expressed on this matter:

.1 the reference in provision 5.5.2.5.1 of the IMDG Code does not make MSC.1/Circ.1361 mandatory;

.2 there are general concerns on the deletion of paragraph 5.5.2.5.2 regarding specific gas detecting devices;

.3 after having amended the related parts of the IMDG Code, the necessity of MSC.1/Circ.1361 should be further considered;

.4 there might be overlapping requirements with the other IMO instruments, e.g. resolution A.1050(27) on the *Revised recommendations for entering enclosed spaces aboard ships*; and

.5 the proposal may have a multimodal impact and the UN Model Regulations would need to be amended.

6.38 After consideration, the Sub-Committee instructed E&T 28 to:

.1 further consider the proposals in paragraphs 16 (regarding reference to MSC.1/Circ.1361) and 17.2 (regarding column 17 of entry UN 3359) of document CCC 4/6/5 and inclusion, if appropriate, in the draft amendments (39-18) to the Code; and

.2 conduct a review on all related provisions in the IMDG Code and MSC.1/Circ.1361 and propose the best way forward to CCC 5.

Special provision 363

6.39 The Sub-Committee considered document CCC 4/6/7 (France), proposing to amend special provision 363 regarding the additional marking requirements for UN 3530, in order to specify the differences for marine pollutant placards, i.e. with a minimum dimension of 250 mm x 250 mm. The Sub-Committee agreed, in principle, to this proposal and to refer this document to E&T 28 for further consideration and inclusion, if appropriate, in the draft amendments (39-18) to the Code.

Medical First Aid Guide (MFAG)

6.40 The Sub-Committee considered document CCC 4/6/8 (Germany), proposing draft amendments concerning the use of paracetamol, medication advice under table 19, the use of furosemide and the text of appendix 2 of the MFAG.

6.41 Following the discussion, the Sub-Committee agreed with the proposed amendments on medication advice under table 19, the use of furosemide and the text of appendix 2 of the MFAG. With regard to the proposed amendments on use of paracetamol, the Sub-Committee noted that due to the side effects of ibuprofen, replacement of paracetamol by ibuprofen should be carefully considered.

6.42 In this context, the Sub-Committee noted that the German delegation is willing to submit a new proposal on the use of paracetamol to CCC 5. Subsequently, the Sub-Committee decided to hold the finalization of the draft amendments on medication advice under table 19, the use of furosemide and the text of appendix 2 of the MFAG, until a decision on the use of paracetamol is taken at a future session.

Segregation groups in the Dangerous Goods List

6.43 The Sub-Committee considered document CCC 4/6/10 (Germany), proposing to include the information on segregation groups in the Dangerous Goods List, in particular to provide the name or the number of the segregation code to which a particular dangerous good is allocated within the dangerous goods table.

6.44 During the discussion, the Sub-Committee noted the following views expressed on this matter:

.1 the proposed amendments on provision 5.4.1 regarding dangerous goods transport information could lead to modifications on the current IT systems and need to be carefully considered; and

.2 the reference code "SGG" could be replaced by "GOS" (group of segregation), in order to avoid possible confusions with "SG".

6.45 After consideration, the Sub-Committee agreed, in principle, to this proposal and to refer this document (except the draft amendments on provision 5.4.1 regarding dangerous goods transport information) to E&T 28 for further consideration and inclusion, if appropriate, in the draft amendments (39-18) to the Code.

DRAFT AMENDMENT 39-18 TO THE IMDG CODE AND INSTRUCTIONS TO THE E&T GROUP

Instructions to the E&T Group

6.46 The Sub-Committee authorized E&T 28 to finalize the draft amendments (39-18) to the IMDG Code, based on documents submitted to CCC 4 and taking into account comments made and decisions taken by the Sub-Committee, with a view to submitting the draft amendments to MSC 99 for consideration and adoption; and to submit a written report to CCC 5.

6.47 The Sub-Committee requested the Secretary-General to circulate, in accordance with SOLAS article VIII, the draft amendments to the IMDG Code (consolidated replacement text), incorporating the draft amendments as prepared by E&T 28, for consideration and subsequent adoption by MSC 99.

6.48 The Sub-Committee further instructed E&T 28 to prepare related recommendations and circulars for submission to MSC 99 for approval, together with the adoption of amendments to the IMDG Code.

6.49 The Sub-Committee also instructed E&T 28 to finalize editorial corrections to amendment 38-16 to the Code (resolution MSC.406(96)) and requested the Secretariat to issue such editorial corrections before 1 January 2018, the date when amendment 38-16 enters into force.

6.50 The Sub-Committee noted that the provisional agenda for E&T 28 was available as document E&T 28/1.

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

General

7.1 The Sub-Committee recalled that this was a continuous item on the biennial agenda and that the Assembly, at its twenty-eighth session, had expanded the output to include all proposed Unified Interpretations (UIs) to provisions of IMO safety, security and environment-related conventions, so that any newly developed or updated draft unified interpretation could be submitted for the consideration of the Sub-Committee, with a view to developing an appropriate IMO interpretation.

Loading limit for liquefied gas fuel tanks

7.2 The Sub-Committee recalled that it had considered annex 1 to document CCC 4/7 (IACS), providing a draft IACS UI on paragraph 6.8.2 of the IGF Code, under agenda item 3 (see paragraphs 3.50 and 3.51).

Enclosed LNG fuel tanks on open deck

7.3 In considering annex 2 to document CCC 4/7, providing a draft IACS UI on paragraph 11.3.2 of the IGF Code, the Sub-Committee noted that the draft IACS UI had been developed based on IACS's view that A-60 shielding of the boundary of accommodation spaces, service spaces, control stations, escape routes and machinery spaces was not required if an LNG fuel tank was on open deck and the tank's connections were installed in an A-0 enclosure, since any fire was expected to be contained within the enclosure. In addition, vacuum insulated type C tanks with integrated tank connection space were, in the view of IACS, considered to be enclosed in A-0 class divisions.

7.4 In this regard, the Sub-Committee noted the following comments expressed on this matter:

.1 minimum distance criteria between accommodation spaces, service spaces, control stations, escape routes or machinery spaces and A-0 class divisions containing fuel tanks should be included in the draft unified interpretation in order to maintain the same level of fire protection as the requirements in paragraph 11.3.3 of the IGF Code;

.2 there is potential, with further discussion, to reach consensus with regard to the proposed unified interpretation provided that A-0 class divisions and minimum distance criteria provide an equivalent level of safety as A-60 class divisions; and

.3 taking into account that paragraph 11.3.2 of the IGF Code addresses fuel tanks on open deck, the 900 mm distance requirement in paragraph 11.3.3 may not be directly relevant, but a different minimum distance criterion may be agreed.

7.5 Following discussion, the Sub-Committee agreed to instruct the IGF Code Working Group, established under agenda item 3, to further consider annex 2 to document CCC 4/7, with a view to developing a unified understanding, and advise the Sub-Committee accordingly (see also paragraph 7.21).

Examples of other rooms with high fire risk

7.6 In considering annex 3 to document CCC 4/7, providing a draft IACS UI on paragraph 11.3.3 of the IGF Code, with a view to clarifying which spaces should, as a minimum, be considered to be "other rooms with high fire risk", the Sub-Committee noted general agreement to the proposed unified interpretation and agreed to instruct the IGF Code Working Group to further consider annex 3 to document CCC 4/7, particularly the examples of spaces that should as a minimum be considered as "other rooms with high fire risk", and prepare the draft unified interpretation for consideration by the Sub-Committee with a view to endorsement (see also paragraph 7.22).

Fuel-level indicator

7.7 Having considered document CCC 4/7/1 (IACS), providing a draft unified interpretation of paragraph 15.3.2 of the IGF Code, with a view to clarifying that a level indicator was understood to be required for the purposes of indicating a high-level alarm and not for indicating the actual level of the fuel and that, in this regard, a level switch (float switch) can be considered as an instrument that meets the requirement, the Sub-Committee agreed to the draft unified interpretation of paragraph 15.3.2 of the IGF Code (CCC 4/7/1, paragraph 5), for inclusion in the consolidated draft MSC circular containing the unified interpretations related to the IGF Code that were agreed at this session (see paragraph 7.23 and annex 3).

Appropriate location of premixed engines using fuel gas mixed with air before the turbocharger

7.8 The Sub-Committee considered document CCC 4/7/2 (Belgium), proposing a modification to the unified interpretation of paragraph 5.4.1 of the IGF Code that was approved by MSC 97 (MSC.1/Circ.1558), clarifying the conditions that would make it acceptable for premixed engines using fuel-gas mixed with air before the turbocharger to be located in gas safe machinery spaces.

7.9 In this regard, the Sub-Committee noted the following comments expressed on this matter:

.1 in general, the installation of premixed engines in gas safe machinery spaces is not supported because they do not meet the safety concept expressed in paragraph 5.4.1.1 of the IGF Code, and the additional clarification proposed in document CCC 4/7/2 would not ensure that the requirement for a single failure not leading to a release of fuel gas into a machinery space would be met;

.2 there may be some merit in further considering the acceptability of certain arrangements of premixed engines within the gas safe machinery spaces if additional mitigation measures are implemented to ensure that the requirements in paragraph 5.4.1.1 of the IGF Code are met; and

.3 the proposed arrangement of premixed engines is not acceptable, based on the current requirements in the IGF Code, and it is not appropriate to address the matter by means of a unified interpretation. An amendment to the IGF Code would be required instead.

7.10 Following a brief discussion, the Sub-Committee did not agree with the proposal in document CCC 4/7/2 and suggested that the delegation of Belgium and other interested Member States and international organizations take the above comments into account and, if deemed appropriate, develop a revised proposal, in the form of an amendment to the IGF Code, for submission to a future session of the Sub-Committee.

Electrical equipment in hazardous areas

7.11 The Sub-Committee considered document CCC 4/7/3 (Belgium), proposing that a unified interpretation of paragraph 12.3.2 of the IGF Code be developed to clarify the equipment protection level of electrical equipment that can be used in hazardous areas.

7.12 In this regard, the Sub-Committee noted the following comments expressed on this matter:

.1 if the issue raised in document CCC 4/7/3 was to be addressed, it should be brought forward as a draft amendment to the IGF Code, since the proposed flexibility in the selection of electrical equipment in hazardous areas on gas-fuelled ships is not currently provided for in the requirements of the IGF Code;

.2 a unified interpretation should be developed but be limited to gas admission valves only;

.3 the goal-based approach of chapter 12, the consideration of the functional requirements in section 12.2 and the corresponding regulations in section 12.4 of the IGF Code ensure a desired safety level in a technology-open way and the development of a draft unified interpretation would achieve a consistent application of gas admission valves to dual fuel and gas engines in particular; and

.4 more detailed proposals should be submitted in order for the Sub-Committee to be in a position to further consider the issues raised in document CCC 4/7/3.

7.13 Having taken the above comments into account, the Sub-Committee invited the delegation of Belgium and other interested Member States and international organizations to develop a more detailed proposal with regard to the selection of electrical equipment in hazardous areas on gas-fuelled ships, with a view to submission at a future session of the Sub-Committee.

Definitions of the terms "each dry-docking", "high-level alarms" and "first occasion of full loading" in the IGF and IGC Codes

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

.1 CCC 4/7/4 (IACS), providing a copy of IACS Unified Interpretation (UI) GC18 regarding the terms "each dry-docking", "high-level alarms" and "first occasion of full loading" in paragraph 13.3 of the IGC Code, as amended by resolution MSC.370(93), and informing the Sub-Committee that item 1 of the interpretation in UI GC18 will be applied by IACS Members on or after 1 January 2018, whereas items 2 and 3 of the interpretation in UI GC18 will be applied by IACS Members on or after 1 July 2018, unless provided with written instructions to apply a different interpretation by the Administration on whose behalf they are authorized to act as a recognized organization; and

.2 CCC 4/7/5 (IACS), providing a copy of IACS Unified Interpretation (UI) GF1 regarding the terms "each dry-docking", "high-level alarms" and "first occasion of full loading" in paragraph 15.4.2 of the IGF Code, and informing the Sub-Committee that item 1 of the interpretation in UI GF1 will be applied by IACS Members on or after 1 January 2018, whereas items 2 and 3 of the interpretation in UI GF 1 will be applied by IACS Members on or after 1 July 2018, unless provided with written instructions to apply a different interpretation by the Administration on whose behalf they are authorized to act as a recognized organization.

7.15 In the ensuing discussion, the Sub-Committee noted the following views on the above two IACS Unified Interpretations:

.1 on the issue of testing of high-level alarms, IACS has attempted to address valid concerns with regard to safety limits being pushed to the maximum on board liquefied gas tankers. Taking into account the potential for testing scenarios to lead to serious accidents, particularly when taking into account the human element, the issue needs to be resolved;

.2 provisions for test results to be recorded by the Master in the ship's logbook should not be included in a unified interpretation but through amendments to the IGC and IGF Codes if considered necessary;

.3 the unified interpretations should not specify the way in which test results should be logged and, therefore, the words "in the ship's logbook" and "or cargo log" should be deleted;

.4 the interpretation of the expression "each dry-docking" in the IGC Code is acceptable but the interpretation of the same expression in the IGF Code should accurately reflect the provisions in section 5.10 of the *Survey Guidelines under the Harmonized System of Survey and Certification (HSSC), 2015* (resolution A.1104(29)), for a minimum of two inspections in the case of passenger ships and the option of reducing it to one available to the Administration;

.5 the intent of paragraph 13.3.5 of the IGC Code is to have the high liquid level alarm and the ESD overflow alarm tested and verified as operational before commissioning and after each survey;

.6 the interpretations of the expression "first occasion of full loading" in the IGC and IGF Codes should not include references to only testing certain sensors by simulation as they are not equivalent to testing with liquid;

.7 the interpretations of the same terms in the IGC and IGF Codes may be addressing similar issues but the contexts are very different; and

.8 a unified interpretation should not remove the requirement in paragraph 13.3.5 of the IGC Code for testing with liquid. A different approach to that of UI GC18 should be developed to ensure that testing requirements are clear and maintain the level of safety while finding a solution for the difficulties some vessels may face with compliance and certification.

7.16 Having taken the above comments into account and having noted the range of views expressed on the interpretations of the expressions "high-level alarms" and "first occasion of full loading" in the IGC and IGF Codes, the Sub-Committee urged interested Member States and international organizations to work with IACS to further consider the relevant interpretations intersessionally.

7.17 With regard to the interpretation of the expression "each dry-docking" in paragraph 13.3.5 of the IGC Code, the Sub-Committee agreed to the text set out in paragraph 1 of IACS UI GC18 (CCC 4/7/4, annex) and subsequently agreed to the draft MSC circular on Unified interpretation of paragraph 13.3.5 of the IGC Code (as amended by resolution MSC.370(93)), as set out in annex 2, and invited the Committee to approve it.

7.18 In the context of the IGF Code, the Sub-Committee agreed to a modification to the text provided in paragraph 1 of UI GF1 (CCC 4/7/5, annex) in order to accurately reflect the provisions on the dry-docking of passenger ships in section 5.10 of the Survey Guidelines under the HSSC and subsequently agreed to the draft unified interpretation of the expression "each dry-docking" in paragraph 15.4.2.3 of the IGF Code (CCC 4/WP.6, annex 1), for inclusion in the consolidated draft MSC circular containing the unified interpretations related to the IGF Code that were agreed at this session (see paragraph 7.23 and annex 3).

Instructions to the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels

7.19 The Sub-Committee instructed the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels (see paragraph 3.42), taking into account comments made and decisions taken in plenary, to further consider the draft IACS Unified Interpretations set out in annexes 2 and 3 to document CCC 4/7, and refine the proposed unified interpretations, as appropriate, for consideration by the Sub-Committee with a view to endorsement.

Report of the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels

7.20 Having considered the part of the report of the Working Group on Amendments to the IGF Code and Development of Guidelines for Low-flashpoint Fuels (CCC 4/WP.3) dealing with the agenda item, the Sub-Committee took action as outlined in paragraphs 7.21 to 7.24 below.

LNG fuel tanks on open decks

7.21 With regard to paragraph 11.3.2 of the IGF Code and the technical issues related to enclosed LNG fuel tanks on an open deck (see also paragraphs 7.3 to 7.5), the Sub-Committee noted the Working Group's view that the matter should be addressed by means of amendments to the IGF Code, to be submitted to a future session.

Other rooms with high fire risk

7.22 The Sub-Committee agreed to the draft unified interpretation of paragraph 11.3.3 of the IGF Code, as prepared by the Working Group (CCC 4/WP.3, annex 3), for inclusion in the consolidated draft MSC circular containing the unified interpretations related to the IGF Code that were agreed at this session (see paragraph 7.23 and annex 3).

Draft MSC circular on unified interpretations of the IGF Code

7.23 Having considered the above matters and the draft unified interpretations of the IGF Code agreed during this session, the Sub-Committee endorsed the consolidated draft MSC circular on Unified interpretations of the IGF Code, as set out in annex 3, and invited the Committee to approve it.

7.24 In this regard, the Sub-Committee invited MSC 99, subject to the draft unified interpretations of paragraphs 13.3.5 of the IGC Code and 15.4.2.3 of the IGF Code being approved by the Committee, to task III 5 with considering consequential updates to the Survey Guidelines under the HSSC.

8 CONSIDERATION OF REPORTS OF INCIDENTS INVOLVING DANGEROUS GOODS OR MARINE POLLUTANTS IN PACKAGED FORM ON BOARD SHIPS OR IN PORT AREAS

General

8.1 The Sub-Committee recalled that CCC 3 had expressed its appreciation to Member States for submitting the results of container inspection programmes and had requested them to continue to submit such reports in accordance with MSC.1/Circ.1442 (as amended by MSC.1/Circ.1521).

Inspection programmes for cargo transport units carrying dangerous goods

8.2 The Sub-Committee noted documents CCC 4/8 (Germany), CCC 4/8/1 (Sweden), CCC 4/8/2 (Chile), CCC 4/8/3 (United States) and CCC 4/8/5 (Republic of Korea), reporting the results of container inspection programmes; and document CCC 4/INF.4/Rev.1 (Secretariat), containing the consolidated results. The Sub-Committee was informed that, among the 73,400 CTUs inspected, 8,324 (11.34%) were found with deficiencies. As to the type of deficiencies, placarding and marking accounted for 42.9%, followed by securing/stowage inside the unit (26.2%) and marking and labelling of packages (18.8%).

8.3 In this context, the Sub-Committee had for its consideration document CCC 4/8/4 (ICHCA), providing an analysis of the reports of the results of inspection programmes for CTUs carrying dangerous goods submitted to CCC 3 and previous sessions going back to DSC 8, commenting on the potential scale of the problem of CTU deficiencies, including CTUs not packed with dangerous goods, and putting forward recommendations as to what could be done to address the problem.

8.4 In the ensuing discussion, the Sub-Committee noted the following comments expressed on the matter:

.1 it is necessary to encourage Member States to carry out inspections of CTUs and to report back to the Organization;

.2 the level of reporting is not sufficient to draw concrete conclusions by which to steer the work of the Sub-Committee, improve compliance or increase safety;

.3 the absence of reporting should not necessarily lead to the conclusion that inspections are not being carried out;

.4 assuming that inspection programmes are not applied to the extent that they should be, an amendment to MSC.1/Circ.1442 is unlikely to improve the situation; and

.5 MSC.1/Circ.1442 has already been amended by MSC.1/Circ.1521 to address undeclared dangerous goods and it is explicitly mentioned that inspections should also apply to undeclared dangerous goods.

8.5 In this context, the Sub-Committee noted the information provided by the delegation of the United Kingdom, regarding plans to make the CTU inspection regime in the United Kingdom even more robust as well as the intention of the United Kingdom to submit a document in this regard to CCC 5.

8.6 The Sub-Committee also noted the analysis provided by ICHCA in document CCC 4/8/4 and invited Member States to submit information to future sessions of the Sub-Committee on experience and lessons learned from the application of national CTU inspection programmes, for the Sub-Committee to consider how to improve the level of reporting and current inspection practices.

8.7 With regard to the proposal in document CCC 4/8/4 to amend relevant instruments, such as MSC.1/Circ.1442, the Sub-Committee agreed that Member States and international organizations interested in pursuing such an approach could submit a proposal for a new output to the Maritime Safety Committee in accordance with MSC-MEPC.1/Circ.5.

8.8 The Sub-Committee expressed its appreciation to those Member States that submitted results of container inspection programmes and its concern about the high rate of deficiencies and the lack of adherence to the provisions of the IMDG Code.

8.9 Subsequently, the Sub-Committee invited Member States to continue submitting such reports and urged Member States which had not yet carried out container inspection programmes to do so and to submit the relevant information to the Organization in accordance with MSC.1/Circ.1442 (as amended by MSC.1/Circ.1521).

Uploading future reports to GISIS

8.10 In this respect, the Secretariat updated the Sub-Committee on the feasibility of developing a GISIS functionality that would allow Member States to fill out an electronic version of the form to report the results of inspection programmes. The Sub-Committee noted the recommendation by the Secretariat that the development of such a functionality was indeed feasible and that the electronic version of the form in annex 2 to MSC.1/Circ.1442 and the generation of consolidated reports was being tested on the GISIS development server. The

Sub-Committee also noted that testing was expected to be completed by the end of 2017 and that Member States would be notified of the general availability of the functionality, together with a short user guide, via a Circular Letter early in 2018.

8.11 Consequently, the Sub-Committee encouraged Member States to submit the results of the 2017 inspection programmes via GISIS, subject to the aforementioned functionality being available well before the first submission deadline for CCC 5, and requested the Secretariat to only prepare the consolidated report as an information document under this agenda item at future sessions.

9 BIENNIAL STATUS REPORT AND PROVISIONAL AGENDA FOR CCC 5

Outcome of MSC 97, MSC 98, MEPC 71 and C 118

9.1 The Sub-Committee noted that MSC 98 and MEPC 71 had confirmed the Sub-Committee's biennial status report for the 2016-2017 biennium (MSC 98/23, paragraph 20.12; and MEPC 71/17, paragraph 14.33).

9.2 With regard to new outputs, the Sub-Committee noted that MSC 98 had agreed:

.1 to include in the 2018-2019 biennial agenda of the CCC Sub-Committee and the provisional agenda for CCC 5, an output on "Amendments to the CSS Code with regard to weather-dependent lashing", with a target completion date of 2019, and had forwarded document CCC 3/10/4 (IACS) to CCC 5 for further consideration in the context of the new agreed output (MSC 98/23, paragraphs 20.7 and 20.8); and

.2 to include in the post-biennial agenda of the Maritime Safety Committee, an output on "Amendments to the IMDG Code related to portable tanks with shells made of Fibre Reinforced Plastics (FRP) for multimodal transportation of dangerous goods", based on the proposal in document MSC 98/20/11 (Russian Federation), with two sessions needed to complete the item, assigning the CCC Sub-Committee as the coordinating organ, and for the work to commence only after the recommendation from UNTDG had been received (MSC 98/23, paragraph 20.11).

9.3 The Sub-Committee also noted that MSC 97 had instructed the sub-committees to prepare their proposed biennial agendas for the coming biennium and had requested the Secretariat to assist them in the usual manner, taking into account that (MSC 97/22, paragraph 19.29):

.1 outputs selected for the biennial agenda should be phrased in SMART terms;[3]

.2 where the target completion year for a specific output goes beyond that 2018-2019 biennium, an interim output should be placed in the biennial agenda with a target completion year of 2018 or 2019, as appropriate, and that a related output should be placed in the Committee's post-biennial agenda with the anticipated completion year; and

[3] SMART: specific, measurable, achievable, realistic and time-bound.

.3 biennial and provisional agendas should not contain sub-items, and items placed on the provisional agendas should correspond with the outputs in the Sub-Committee's biennial agenda.

9.4 The Sub-Committee further noted that C 118 had approved the draft Strategic Plan for the Organization for the 2018-2023 period as set out in annex 1 to document C 118/WP.4, together with the associated draft Assembly resolution, and had forwarded them to the thirtieth regular session of the Assembly for adoption.

Biennial status report and proposed biennial agenda for the 2018-2019 biennium

9.5 Taking into account the progress made at the session, the Sub-Committee updated the biennial status report for the 2016-2017 biennium (CCC 4/WP.2, annex 1) and prepared the proposed biennial agenda for the 2018-2019 biennium (CCC 4/WP.2, annex 2), as set out in annexes 4 and 5, for submission to C/ES.29, for approval by A 30, MEPC 72 and MSC 99, as appropriate.

Proposed provisional agenda for CCC 5

9.6 Taking into account the progress made at the session, the Sub-Committee prepared the proposed provisional agenda for CCC 5 (CCC 4/WP.2, annex 3), as set out in annex 6, for approval by MEPC 72 and MSC 99.

Correspondence Groups established at the session

9.7 The Sub-Committee established Correspondence Groups on the following subjects, due to report to CCC 5:

.1 development of technical provisions for the safety of ships using low-flashpoint fuels (agenda item 3); and

.2 suitability of high manganese austenitic steel for cryogenic service (agenda item 4).

Arrangements for the next session

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

.1 amendments to the IGF Code and development of guidelines for low-flashpoint fuels (agenda item 3)[4];

.2 suitability of high manganese austenitic steel for cryogenic service (agenda item 4);

.3 IMSBC Code matters (agenda item 5); and

.4 amendments to the CSS Code with regard to weather-dependent lashing,

whereby the Chair, taking into account the submissions received on the respective subjects, would advise the Sub-Committee before CCC 5 on the final selection of such groups.

[4] Refer to annex 6.

Intersessional meetings

9.9 Having noted that MSC 98 confirmed the twenty-eighth meeting of the Editorial and Technical (E&T) Group (IMDG Code) to take place from 18 to 22 September 2017, directly after CCC 4, and approved the twenty-ninth meeting of the E&T Group (IMSBC Code) to take place in the first half of 2018, subsequently also approved by C 118, the Sub-Committee invited MSC 99 to approve the thirtieth meeting of the E&T Group (IMSBC Code) to take place directly after CCC 5, with a view to finalizing the next set of draft amendments (05-19) to the IMSBC Code for submission to MSC 101 for adoption.

Date of the next session

9.10 The Sub-Committee noted that the fifth session of the Sub-Committee had been tentatively scheduled to take place from 10 to 14 September 2018.

10 ELECTION OF CHAIR AND VICE-CHAIR FOR 2018

10.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. Xie Hui (China) as Chair and unanimously elected Ms. Gudula Schwan (Germany) as Vice-Chair, both for 2018.

11 ANY OTHER BUSINESS

Preventing the use of counterfeit refrigerants

11.1 The Sub-Committee had for its consideration document CCC 4/11 (IICL), reporting the final outcome of the Informal Industry Correspondence Group on Preventing the Use of Counterfeit Refrigerants, chaired by the IICL.

11.2 Specifically, the Sub-Committee noted the following:

.1 the Air Conditioning, Heating, & Refrigeration Institute (AHRI), having determined that a level not exceeding 300 ppm of R-40 contamination in refrigerant gas supplies is acceptable, had included that determination in AHRI Standard 700-2016;

.2 the usage of the halide torch test or other tests with a similar sensitivity, as previously recommended by the Informal Industry Correspondence Group, would ensure levels of R-40 in conformance with the AHRI findings; and

.3 the Informal Industry Correspondence Group had decided to amend the recommended steps accordingly, and to rename them as Industry best practices for preventing the use of counterfeit refrigerants.

11.3 Subsequently, the Sub-Committee expressed its appreciation for the work carried out by the Informal Industry Correspondence Group on Preventing the Use of Counterfeit Refrigerants and encouraged Member States and international organizations to disseminate the Industry best practices for preventing the use of counterfeit refrigerants, as set out in paragraph 6 of, and the annex to, document CCC 4/11, to all interested parties.

Measures to prevent loss of containers

Revision of ISO 1161 (Series 1 freight containers – Corner fittings – Specifications)* and *ISO 3874 (Series 1 freight containers – Handling and securing)

11.4 The Sub-Committee considered document CCC 4/11/1 (ISO), reporting on the progress of the revision of ISO standards 1161 and 3874, following the request of DSC 18 to ISO to revise ISO 3874 in regard to the equipment used on board ships to secure containers, taking into account the report of the Lashing@sea project, and noted the following information:

.1 a liaison has been established with ISO/TC 8/SC 4 (Outfitting and deck machinery) in respect of DIS 17905 (Ships and Marine Technology – Installation, Inspection and Maintenance of Container Securing Devices for Ships), which is a complementary standard to ISO 3874 (*Series 1 freight containers – Handling and securing*), as a necessary step in establishing the mandate for reviewing the strength of lashing gear and securing devices and in order to avoid any possibility of conflicting data between ISO 3874 and ISO 668 (*Series 1 freight containers – Classification, dimensions and ratings*);

.2 the updated ISO 3874 will include design and strength characteristics for automatic twistlocks;

.3 the work relating to ISO 1161 (*Series 1 freight containers – Corner fittings – Specifications*), which was revised and published on 11 July 2016, may be reopened subject to a new work item proposal being communicated to the ISO Secretariat; and

.4 the final issue of ISO 3874 (*Series 1 freight containers – Handling and securing*) has been prepared and is at the ISO/DIS phase with a view to being published in the autumn of 2017. The revised standard takes into account the increase of the maximum gross weight of the containers global fleet and incorporates a new chapter on automatic twistlocks.

11.5 Subsequently, the Sub-Committee expressed its appreciation for the work carried out by ISO in response to the request by DSC 18.

Estimate of containers lost at sea

11.6 The Sub-Committee considered document CCC 4/11/5 (WSC), reporting on the methodology and results of surveys undertaken by the WSC in 2011, 2014 and 2017, to obtain an estimate of the number of containers lost at sea on an annual basis and noted the following information:

.1 for the combined nine-year period from 2008 to 2016, on average, there were 568 containers lost at sea each year, not counting catastrophic events, and 1,582 containers lost at sea each year including catastrophic events;

.2 on average, 64% of containers lost during this period were attributed to a catastrophic event;

.3 based on the 2017 survey results, for the years 2014, 2015 and 2016, on average, there were approximately 612 containers lost at sea each year, not counting catastrophic events, which is about 16% less than the average of 733 units lost each year for the previous three-year period; and

.4 when catastrophic losses are included, an average total loss per year of approximately 1,390 containers was estimated for the years 2014, 2015 and 2016 (i.e. a 48% reduction from the annual total losses of 2,683 estimated in 2014).

11.7 The Sub-Committee noted the information provided in document CCC 4/11/5 as well as the following comments:

.1 the use of linear extrapolation to estimate the losses corresponding to the 20% of the industry's capacity not covered by the survey may not produce reliable projections as the assumption that the companies that did not provide data adopt the same level of safety as the companies that did is questionable;

.2 container losses resulting from catastrophic events are as significant as other losses and should be fully reflected when considering the issue of containers lost at sea; and

.3 information on whether or not the containers lost overboard were empty as well as on the nature of the materials packed in the lost containers would add value to the analyses presented in document CCC 4/11/5.

11.8 In this context, the Sub-Committee also noted the information provided by the delegation of Brazil regarding an incident that took place on 11 August 2017, involving the containership **Log In Pantanal**, which resulted in the loss of 45 containers overboard on 11 August 2017 while the ship was at the outer anchorage of Santos Port. The delegation of Brazil also informed the Sub-Committee that the results of an investigation being conducted by the Sao Paulo Port Authority would be made public upon its conclusion.

Implementation of SOLAS chapter VI requirements for the verification of the gross mass of packed containers

11.9 The Sub-Committee noted with appreciation the information in document CCC 4/11/3 (Chile), regarding the implementation status of the requirements for the verification of the gross mass of packed containers in Chile, specifically that activities relating to verification of the gross mass of packed containers were being conducted at Chile's maritime ports and terminals in a fully efficient and normal manner, in accordance with reports from representatives of the Maritime and Port Chamber of Chile, the Chilean National Association of Shipping Agencies, the National Directorate of Customs, and the Chilean National Association of Shipowners, and that no difficulties of interpretation have been identified so far.

11.10 In this context, the observer from FONASBA made a statement, as set out in annex 7, informing the Sub-Committee of the completion of a survey of FONASBA members relating to implementation, compliance monitoring and the possible impact of the SOLAS requirements to verify the gross mass of packed containers on trade patterns.

BoxTech Technical Characteristics Database

11.11 The Sub-Committee noted with appreciation the update provided in document CCC 4/11/4 (BIC), regarding the BIC's progress in deploying the BoxTech Technical Characteristics Database, which was launched by the BIC on 1 July 2016 to provide a single industry platform for container technical information, including container tare weights needed for method 2 declarations of verified gross mass (VGM), required under SOLAS since 1 July 2016.

ACEP information

11.12 Having considered document CCC 4/11/2 (BIC), reporting on the activity of the Global ACEP Database since CCC 3, the Sub-Committee expressed its appreciation to the BIC for its continued commitment to maintaining and running the Global ACEP Database. The Sub-Committee also urged CSC 1974 Contracting Parties to make their ACEP information publicly available and communicate to the Secretariat the location where the ACEP information has been posted, so that the *List of locations of publicly available ACEP information* (CSC.1/Circ.153) can be updated accordingly.

Safety management system for packaged dangerous goods transported by road

11.13 The Sub-Commitee noted with appreciation the information in document CCC 4/INF.16 (Republic of Korea), regarding a safety management system, which the Ministry of Oceans and Fisheries in the Republic of Korea has been developing and operationally testing since 2016, for packaged dangerous goods transported by road, with a view to improving accident prevention and safety levels.

Risk assessment of a medium-sized Floating Regasification Unit

11.14 The Sub-Commitee noted with appreciation the report of a case study-based research project designed to investigate, by means of a Hazard and Operability (HAZOP) study at the design stage of a medium-sized Floating Regasification Unit (FRU), the risk associated with new compact LNG regasification systems fitted on medium-sized FRUs, as set out in the annex to document CCC 4/INF.18 (Republic of Korea).

Contact points under the CSC 1972, and the IMDG and IMSBC Codes in GISIS

11.15 The Sub-Commitee noted the information provided by the Secretariat that relevant categories had been added to the GISIS Contact Points module to allow Member States to update the contact details of the designated national competent authorities for matters relating to dangerous goods in packaged form and solid bulk cargoes and grain, as well as the contact details of organizations authorized for container testing, inspection and approval. Member States were encouraged to check, and update if necessary, the contact details on the GISIS Contact Points module that had been populated by the Secretariat using the information available in MSC.1/Circ.1563, BC.1/Circ.7 and CSC.1/Circ.156, with a view to inclusion in the next issue of the aforementioned circulars at the end of this year.

Collision between a tanker and a dredger

11.16 The Sub-Commitee noted the information provided by the delegations of Indonesia, Malaysia and Singapore regarding the collision between the Indonesian-registered tanker **Kartika Segara** and the Dominican-registered dredger **JBB de Rong 19** that took place in Singaporean territorial waters on 13 September 2017, and expressed its sincere condolences to the families of the crew members that had perished or were missing.

Expressions of appreciation

11.17 The Sub-Committee expressed its appreciation to the following delegates and members of the Secretariat who had recently relinquished their duties, retired or been transferred to other duties, or were about to do so, for their invaluable contribution to its work and wished them a long and happy retirement or, as the case might be, every success in their new duties:

- Mr. Thomas Höfer (Germany) (on retirement)
- Mr. Youqiang Li (IMO) (on retirement)
- Mr. Ashok Mahapatra (IMO) (on retirement)
- Mr. James Paw (IMO) (on retirement)
- Mr. Patrick Van Lancker (Belgium) (on retirement)

12 ACTION REQUESTED OF THE COMMITTEES

12.1 The Maritime Safety Committee, at its ninety-ninth session, is invited to:

.1 invite ISO/TC 8 to consider developing a standard for methyl/ethyl alcohol as a marine fuel (paragraph 3.14);

.2 invite ISO/TC 8 to develop a standard for methyl/ethyl alcohol fuel couplings (paragraph 3.16)

.3 approve the draft amendments to parts A and A-1 of the IGF Code related to natural gas-specific requirements, taking into account the check/monitoring sheet and records for regulatory development, with a view to approval and subsequent adoption at MSC 100 (paragraph 3.44 and annex 1);

.4 authorize the Secretariat to effect the editorial corrections to sections 6.14.16 (paragraph numbering) and 16.7.2 (incorrect reference) of the IGF Code (resolution MSC.391(95)) agreed by the Sub-Committee, using the established procedure for correcting errors that are editorial in nature via a Note Verbale (paragraph 3.45);

.5 bearing in mind the urgency for the information to be available to all stakeholders, endorse the decision of the Sub-Committee to approve and issue CCC.1/Circ.2/Rev.1 on the *Carriage of Bauxite which may liquefy* (paragraph 5.74);

.6 bearing in mind the urgency for the information to be available to all stakeholders, endorse the decision of the Sub-Committee to approve and issue CCC.1/Circ.4 on the *Carriage of AMMONIUM NITRATE BASED FERTILIZER (non-hazardous)* (paragraph 5.76);

.7 endorse the decision that the Sub-Committee authorized E&T 29 to prepare the draft amendments (05-19) to the IMSBC Code, for submission to CCC 5 (paragraphs 5.83 to 5.85);

.8 endorse the decision that the Sub-Committee authorized E&T 28 to finalize the draft amendments (39-18) to the IMDG Code, together with related recommendations and circulars for submission to MSC 99 for approval and subsequent adoption, as appropriate, and requested the Secretary-General to circulate, in accordance with SOLAS article VIII, the draft amendments to the IMDG Code prepared by E&T 28 (paragraphs 6.46 to 6.48);

.9 approve the draft unified interpretation of paragraph 13.3.5 of the IGC Code (as amended by resolution MSC.370(93)) and the associated draft MSC circular (paragraph 7.17 and annex 2);

.10 approve the draft unified interpretations of the IGF Code and the associated draft MSC circular (paragraph 7.23 and annex 3);

.11 subject to the approval of the proposed unified interpretations of paragraphs 13.3.5 of the IGC Code and 15.4.2.3 of the IGF Code, instruct III 5 to consider consequential updates to the Survey Guidelines under the HSSC (paragraph 7.24 and annexes 2 and 3);

.12 approve the updated biennial status report of the Sub-Committee for the 2016-2017 biennium (paragraph 9.5 and annex 4);

.13 approve the proposed biennial agenda of the Sub-Committee for the 2018-2019 biennium (paragraph 9.5 and annex 5);

.14 approve the proposed provisional agenda for CCC 5 (paragraph 9.6 and annex 6);

.15 approve the thirtieth meeting of the E&T Group (IMSBC Code), to take place directly after CCC 5, with a view to finalizing the next set of draft amendments (05-19) to the IMSBC Code for submission to MSC 101 for adoption (paragraph 9.9); and

.16 approve the report in general.

12.2 The Marine Environment Protection Committee, at its seventy-second session, is invited to:

.1 approve the updated biennial status report of the Sub-Committee for the 2016-2017 biennium (paragraph 9.5 and annex 4);

.2 approve the proposed biennial agenda of the Sub-Committee for the 2018-2019 biennium (paragraph 9.5 and annex 5);

.3 approve the proposed provisional agenda for CCC 5 (paragraph 9.6 and annex 6); and

.4 approve the report in general.

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ANNEX 1[1]

DRAFT AMENDMENTS TO PARTS A AND A-1 OF THE IGF CODE

PART A

2 GENERAL

2.2 Definitions

1 The following new definition 2.2.42 is introduced after 2.2.41:

"2.2.42 *Ship constructed on or after [date of entry into force]* means:

.1 for which the building contract is placed on or after [*date of entry into force*];

.2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after [*date of entry into force + six* months]; or

.3 the delivery of which is on or after [*date of entry into force + 48 months*]."

PART A-1

SPECIFIC REQUIREMENTS FOR SHIPS USING NATURAL GAS AS FUEL

5 SHIP DESIGN AND ARRANGEMENT

5.3 Regulations – General

2 The text defining f_v in paragraph 5.3.4 is amended to read as follows:

"f_v is calculated by use of the formulations for factor v contained in SOLAS regulation II-1/7-2.6.1.1 and reflects the probability that the damage is ~~not~~ extending vertically above the lowermost boundary of the fuel tank. The formulations to be used are:"

6 FUEL CONTAINMENT SYSTEM

6.8 Regulations on loading limit for liquefied gas fuel tanks

3 The following regulation is added after existing 6.8.2:

"6.8.2*bis* For ships constructed on or after [*date of entry into* force], in cases where the tank insulation and tank location make the probability very small for the tank contents to be heated up due to an external fire, special considerations may be made to allow a higher loading limit than calculated using the reference temperature, but

[1] Tracked changes are created using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

never above 95%. ~~This also applies in cases where a second system for pressure maintenance is installed, (refer to 6.9). However, if the pressure can only be maintained / controlled by fuel consumers, the loading limit as calculated in 6.8.1 shall be used.~~"

9 FUEL SUPPLY TO CONSUMERS

9.5 Regulations for fuel distribution outside of machinery space

4 The following regulations are added after 9.5.2:

"9.5.3 The requirements in 9.5.4 to 9.5.7 shall apply to ships constructed on or after [*date of entry into force*] in lieu of the requirements in 9.5.1 and 9.5.2.

9.5.4 Where gaseous fuel pipes pass through enclosed spaces in the ship, they shall be protected by a secondary enclosure. This enclosure can be a ventilated duct or a double wall piping system. The duct or double wall piping system shall be mechanically underpressure ventilated with 30 air changes per hour, and gas detection as required in 15.8 shall be provided. Other solutions providing an equivalent safety level may also be accepted by the Administration.

9.5.5 The requirement in 9.5.4 need not be applied for fully welded fuel gas vent pipes led through mechanically ventilated spaces.

9.5.6 Liquefied fuel pipes shall be protected by a secondary enclosure able to contain leakages. If the piping system is in a fuel preparation room or a tank connection space, the Administration may waive this requirement.

The secondary enclosure shall be able to withstand the maximum pressure that may build up in the enclosure in case of leakage from the fuel piping. For this purpose, the secondary enclosure may need to be arranged with a pressure relief system that prevents the enclosure from being subjected to pressures above their design pressures."

10 POWER GENERATION INCLUDING PROPULSION AND OTHER GAS CONSUMERS

10.3 Regulations for internal combustion engines of piston type

5 New regulation 10.3.1.1*bis* is added after existing 10.3.1.1 as follows:

"10.3.1.1*bis* For ships constructed on or after [*date of entry into* force], the exhaust system shall be equipped with explosion relief ~~ventilation sufficiently dimensioned to prevent excessive explosion pressures in the event of ignition failure of one cylinder followed by ignition of the unburned gas in the system.~~ systems unless designed to accommodate the worst case overpressure due to ignited gas leaks or justified by the safety concept of the engine. A detailed evaluation of the potential for unburnt gas in the exhaust system is to be undertaken covering the complete system from the cylinders up to the open end. This detailed evaluation shall be reflected in the safety concept of the engine."

11 FIRE SAFETY

11.3 Regulations for fire protection

6 Regulation 11.3.3 is amended as follows:

"11.3.3 The space containing the fuel containment system shall be separated from the machinery spaces of category A or other rooms with high fire risks. The separation shall be done by a cofferdam of at least 900 mm with insulation of A-60 class. When determining the insulation of the space containing the fuel containment system from other spaces with lower fire risks, the fuel containment system shall be considered as a machinery space of category A, in accordance with SOLAS regulation II-2/9. ~~The boundary between spaces containing fuel containment systems shall be either a cofferdam of at least 900 mm or A-60 class division.~~ For type C tanks, the fuel storage hold space may be considered as a cofferdam.

7 The following new regulation 11.3.3*bis* is added after regulation 11.3.3:

11.3.3*bis* Notwithstanding 11.3.3, for ships constructed on or after [*date of entry into force*], for type C tanks, the fuel storage hold space may be considered as a cofferdam provided the type C tank is not located directly above machinery spaces of category A or other rooms with high fire risk. When the fuel storage hold space is considered as a cofferdam, the minimum distance to the A-60 boundary from the outer shell of the type C tank or the boundary of the tank connection space, if any, shall be at least 900 mm."

APPENDIX 1[2]

CHECK/MONITORING SHEET FOR THE PROCESSING OF AMENDMENTS TO THE CONVENTION AND RELATED MANDATORY INSTRUMENTS (PROPOSAL/DEVELOPMENT)

Part III – Process monitoring to be completed during the work process at the sub-committee and checked as part of the final approval process by the Committee (Refer to section 3.2.1.3)

1	The sub-committee, at an initial engagement, has allocated sufficient time for technical research and discussion before the target completion date, especially on issues needing to be addressed by more than one sub-committee and for which the timing of relevant sub-committees meetings and exchanges of the result of consideration needed to be carefully examined.	x
2	The scope of application agreed at the proposal stage was not changed without the approval of the Committee.	x
3	The technical base document/draft amendment addresses the proposal's issue(s) through the suggested instrument(s); where it does not, the sub-committee offers the Committee an alternative method of addressing the problem raised by the proposal.	x
4	Due attention has been paid to the *Interim guidelines for the systematic application of the grandfather clauses* (MSC/Circ.765-MEPC/Circ.315).	x
5	All references have been examined against the text that will be valid if the proposed amendment enters into force.	n/a
6	The location of the insertion or modified text is correct for the text that will be valid when the proposed text enters into force on a four-year cycle of entry into force, as other relevant amendments adopted might enter into force on the same date.	x
7	There are no inconsistencies in respect of scope of application between the technical regulation and the application statement contained in regulation 1 or 2 of the relevant chapter, and application is specifically addressed for existing and/or new ships, as necessary.	x
8	Where a new term has been introduced into a regulation and a clear definition is necessary, the definition is given in the article of the Convention or at the beginning of the chapter.	x
9	Where any of the terms "fitted", "provided", "installed" or "installation" are used, consideration has been given to clarifying the intended meaning of the term.	x

[2] This appendix is reproduced in English only.

10	All necessary related and consequential amendments to other existing instruments, including non-mandatory instruments, in particular to the forms of certificates and records of equipment required in the instrument being amended, have been examined and included as part of the proposed amendment(s).	n/a
11	The forms of certificates and records of equipment have been harmonized, where appropriate, between the Convention and its Protocols.	n/a
12	It is confirmed that the amendment is being made to a currently valid text and that no other bodies are concurrently proposing changes to the same text.	x
13	All entry-into-force criteria (building contract, keel laying and delivery) have been considered and addressed.	x
14	Other impacts of the implementation of the proposed/approved amendment have been fully analysed, including consequential amendments to the "application" and "definition" regulations of the chapter.	x
15	The amendments presented for adoption clearly indicate changes made with respect to the original text, so as to facilitate their consideration.	x
16	For amendments to mandatory instruments, the relationship between the Convention and the related instrument has been observed and addressed, as appropriate.	x
17	The related record format has been completed or updated, as appropriate.	x

APPENDIX 2[3]

RECORDS FOR REGULATORY DEVELOPMENT

The following records should be created and kept updated for each regulatory development.

The records can be completed by providing references to paragraphs of related documents containing the relevant information, proposals, discussions and decisions.

1	**Title (number and title of regulation(s))**
Regulations 2.2 (Definitions), 6.8 (Regulations on loading limit for liquefied gas fuel tanks), 9.5 (Regulations for fuel distribution outside of machinery space), 10.3 (Regulations for internal combustion engines of piston type), 11.3 (Regulations for fire protection) and 15.8 (Regulations for gas detection) of the IGF Code.	
2	**Origin of the requirement (original proposal document)**
CCC 4/3/1 (IACS), CCC 4/3/2 (China) and CCC 4/3/6/Rev.1.	
3	**Main reason for the development (extract from the proposal document)**
"With regard to the output on 'Amendments to the IGF Code and development of guidelines for low-flashpoint fuels" (5.2.1.2)', the Chairman of the CCC Sub-Committee stated that, under the agenda item, the Sub-Committee would also consider matters related to LNG, based on experience gained by the IGF Code to be adopted at MSC 95, in addition to low-flashpoint fuels other than LNG, which should be considered in the second phase of the IGF Code. The Committee endorsed this approach." (MSC 94/21, paragraph 18.6)	
4	**Related output**
Amendments to the IGF Code and development of guidelines for low-flashpoint fuels (5.2.1.2).	
5	**History of the discussion (approval of work programmes, sessions of sub-committees, including CG/DG/WG arrangements)**
CCC 4, considered draft amendments to regulations 2.2 (Definitions), 5.3 (Regulations – General), 6.8 (Regulations on loading limit for liquefied gas fuel tanks), 9.5 (Regulations for fuel distribution outside of machinery space), 10.3 (Regulations for internal combustion engines of piston type) and 11.3 (Regulations for fire protection) of the IGF Code. In this context, the Sub-Committee endorsed the draft amendments finalized by the IGF Code Working Group and noted that such amendments were expected to enter into force on 1 January 2024 based on the four-year cycle provided in MSC.1/Circ.1481.	
6	**Impact on other instruments (e.g. codes, performance standards, guidance circulars, certificates/records format, etc.)**
N/A	
7	**Technical background**
7.1	**Scope and objective (to cross check with items 4 and 5 in part II of the checklist)**
The work carried out under this output is aimed at providing consistency to the IGF Code, as adopted by resolution MSC 391(95), regarding the existing requirements for ships using natural gas as fuel (part A-1) by introducing the necessary amendments based on the experience gained on the application of the Code.	

[3] This appendix is reproduced in English only.

7.2	**Technical/operational background and rationale (summary of FSA study, etc., if available or, engineering challenge posed, etc.)**

Introduction of new application provisions only in those amendments which tightened up requirements based on the understanding that, if the amendment entails a relaxation of the original requirement, ships built in compliance with the original more stringent requirement would also satisfy the more lenient amended requirement.

Regulation 5.3: revision of the text describing f_v in order to align it with SOLAS regulation II-1/7-2.6.1.

Regulation 6.8: revision of the conditions to allow for fuel tanks loading limits higher than calculated based on the tank insulation and the probability of an external fire heating the tank contents up.

Regulation 9.5: appropriate addressing of the secondary enclosure requirements for gaseous and liquefied fuel pipes.

Regulation 10.3: addressing of the gap in the current requirements in 10.3.1.1 of the Code for explosion relief valve capability in the exhaust system, which does not take into account the:

.1 safety concept of different engines; and

.2 the functional requirement in 10.2.2 of the Code, which foresees that relevant engine components or systems may be designed with the strength to withstand the worst case over pressure due to ignited gas leaks.

Regulation 11.3:

.1 deletion of the fire protection requirements for boundaries between fuel containment systems; and

.2 inclusion of additional fire protection requirements for boundaries of type C tanks located above machinery spaces of category A or other rooms with high fire risk.

7.3	**Source/derivation of requirement (non-mandatory instrument, industry standard, national/regional requirement)**

Regulations 2.2 (Definitions), 6.8 (Regulations on loading limit for liquefied gas fuel tanks), 9.5 (Regulations for fuel distribution outside of machinery space), 10.3 (Regulations for internal combustion engines of piston type) and 11.3 (Regulations for fire protection) of the IGF Code.

7.4	**Short summary of requirement (what is the new requirement – in short and lay terms)**

See sections 7.1 and 7.2 above.

7.5	**Points of discussions (controversial points and conclusion)**

See paragraphs 4 to 17 of document CCC 4/WP.3.

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ANNEX 2

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF PARAGRAPH 13.3.5 OF THE IGC CODE (AS AMENDED BY RESOLUTION MSC.370(93))

1 The Maritime Safety Committee, at its [ninety-ninth session (16 to 25 May 2018)], with a view to providing more specific guidance on the expression "each dry-docking" in the context of testing of high-level alarms on liquefied gas tankers approved the unified interpretation of paragraph 13.3.5 the IGC Code (as amended by resolution MSC.370(93)) prepared by the Sub-Committee on Carriage of Cargoes and Containers, at its fourth session, as set out in the annex.

2 Member States are invited to use the annexed unified interpretation as guidance when applying the relevant provision of the IGC Code and to bring the unified interpretation to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATION OF PARAGRAPH 13.3.5 OF THE IGC CODE (AS AMENDED BY RESOLUTION MSC.370(93))

Testing of high-level alarms

The expression "each dry-docking" is considered to be the survey of the outside of the ship's bottom required for the renewal of the Cargo Ship Safety Construction Certificate and/or the Cargo Ship Safety Certificate.

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ANNEX 3

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATIONS OF THE IGF CODE

1 The Maritime Safety Committee, at its [ninety-ninth session (16 to 25 May 2018)], with a view to providing more specific guidance for the application of the relevant requirements of the International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code), approved unified interpretations of the IGF Code prepared by the Sub-Committee on Carriage of Cargoes and Containers, at its fourth session, as set out in the annex.

2 Member States are invited to use the annexed unified interpretations as guidance when applying relevant provisions of the IGF Code and to bring them to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS OF THE IGF CODE

1 Storage tanks loading limits higher than calculated using the reference temperature (paragraph 6.8.2)

The alternative loading limit option given under 6.8.2 is understood to be an alternative to 6.8.1 and should only be applicable when the calculated loading limit using the formulae in 6.8.1 gives a lower value than 95%.

2 Other rooms with high fire risk (paragraph 11.3.3)

The following "other rooms with high fire risk" should as a minimum be considered, but not be restricted to:

.1 cargo spaces except cargo tanks for liquids with flashpoint above 60°C and except cargo spaces exempted in accordance with SOLAS regulations II-2/10.7.1.2 or II-2/10.7.1.4;

.2 vehicle, ro-ro and special category spaces;

.3 service spaces (high risk): galleys, pantries containing cooking appliances, saunas, paint lockers and store-rooms having areas of 4 m^2 or more, spaces for the storage of flammable liquids and workshops other than those forming part of the machinery space, as provided in SOLAS regulations II-2/9.2.2.4, II-2/9.2.3.3 and II-2/9.2.4; and

.4 accommodation spaces of greater fire risk: saunas, sale shops, barber shops and beauty parlours and public spaces containing furniture and furnishing of other than restricted fire risk and having deck area of 50 m^2 or more, as provided in SOLAS regulation II-2/9.2.2.3.

3 Level indicator in the bilge well of tank connection spaces of independent liquefied gas storage tanks (paragraph 15.3.2)

The "level indicator" required by 15.3.2 of the IGF Code is understood to be required for the purposes of indicating an alarm status only; a level switch (float switch) is an instrument example considered to meet this requirement.

4 Testing of high level alarms (paragraph 15.4.2.3)

The expression "each dry-docking" refers to:

.1 for cargo ships, the survey of the outside of the ship's bottom required for the renewal of the Cargo Ship Safety Construction Certificate and/or the Cargo Ship Safety Certificate; and

.2 for passenger ships, the survey of the outside of the ship's bottom to be carried out according to paragraphs 5.10.1 and 5.10.2 of the *Survey Guidelines under the Harmonized System of Survey and Certification, (HSSC), 2015* (resolution A.1104(29), as may be amended).

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ANNEX 4

BIENNIAL STATUS REPORT OF THE SUB-COMMITTEE FOR THE 2016-2017 BIENNIUM AND OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDATHAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/ SDC /SSE/NCSR		Ongoing	Ongoing	MSC 78/26, paragraph 22.12; CCC 3/15, section 10; MSC 97/22, paragraphs 10.9 and 10.10; and CCC 4/12, section 7
2.0.1.5	Amendments to SOLAS regulations II-2/20.2 and II-2/20-1 to clarify the fire safety requirements for cargo spaces containing vehicles with fuel in their tanks for their own propulsion	2017	MSC	SSE	CCC	Completed		MSC 96/25, paragraph 23.6; and MSC 98/23, paragraphs 3.14 to 3.17, 3.59 and 3.61 to 3.63

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2016	MSC	HTW/PPR/SDC/SSE	CCC	Extended	Extended	MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; and CCC 4/12, section 3
Notes: MSC 97 approved the request of CCC 3 to extend the target completion year to 2017 (MSC 97/22, paragraph 19.2). MSC 98 granted a further extension until 2019 taking into account that, based on the relevant submissions to CCC 4, the Sub-Committee was unlikely to complete the output by 2017 (MSC 98/23, annex 38). CCC 4 confirmed the request to extend until 2019.								
5.2.1.9	Safety requirements for carriage of liquefied hydrogen in bulk	2016	MSC	CCC		Completed		MSC 94/21, paragraph 18.3; and MSC 97/22, paragraph 10.2
5.2.1.26	Suitability of high manganese austenitic steel for cryogenic service and development of any necessary amendments to the IGC Code and IGF Code	2017	MSC	CCC		In progress	Extended	MSC 96/25, paragraph 23.4; CCC 3/15, section 8; and CCC 4/12, section 4
Notes: MSC 98 extended the target completion year to 2019 taking into account that, based on the relevant submissions to CCC 4, it was considered possible that the Sub-Committee would be unable to complete the output by 2017 (MSC 98/23, annex 38). CCC 4 confirmed the request to extend until 2019.								

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
5.2.3.3	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC		Ongoing	Ongoing	MSC 86/26, paragraph 7.2; MSC 98/23, paragraphs 3.72 to 3.78; and CCC 4/12, section 5
5.2.3.4	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC		Ongoing	Ongoing	MSC 75/24, paragraph 7.36; CCC 3/15, section 6; and CCC 4/12, section 6

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
7.1.1.1	Mandatory requirements for classification and declaration of solid bulk cargoes as harmful to the marine environment	2017	MEPC	CCC		Completed		MEPC 68/21, paragraphs 12.35, 17.16 and 17.17; MSC 95/22, paragraph 19.1; MEPC 69/21, paragraphs 13.13 to 13.21; MSC 96/25, paragraphs 10.14 and 10.15; MEPC 70/18, paragraph 3.31; MSC 97/22, paragraph 10.6; and MSC 98/23, paragraphs 3.72 to 3.78
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC/MEPC	III	CCC	Ongoing	Ongoing	MSC 79/23, paragraph 12.7; CCC 3/15, section 11; and CCC 4/12, section 8

OUTPUTS ON THE COMMITTEE'S POST-BIENNIAL AGENDA THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
POST-BIENNIAL OUTPUTS								
Number	**Biennium (when the output was placed on the post-biennial agenda)**	**Reference to High-level Actions**	**Description**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organs(s)**	**Timescale (sessions)**	**References**
	2016-2017	5.2.3	Amendments to the IMDG Code related to portable tanks with shells made of Fibre Reinforced Plastics (FRP) for multimodal transportation of dangerous goods	MSC		CCC	2	MSC 98/23, paragraphs 20.9 to 20.11

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ANNEX 5

PROPOSED BIENNIAL AGENDA FOR THE 2018-2019 BIENNIUM

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
1.1.2.3	Unified interpretation of provisions of IMO safety, security, and environment-related conventions	Continuous	MSC/MEPC	III/PPR/CCC/SDC /SSE/NCSR				MSC 78/26, paragraph 22.12; CCC 3/15, section 10; MSC 97/22, paragraphs 10.9 and 10.10; and CCC 4/12, section 7
5.2.1.2	Amendments to the IGF Code and development of guidelines for low-flashpoint fuels	2019	MSC	HTW/PPR/SDC/SSE	CCC			MSC 94/21, paragraphs 18.5 and 18.6; MSC 96/25, paragraphs 10.1 to 10.3; and CCC 4/12, section 3

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
5.2.1.26	Suitability of high manganese austenitic steel for cryogenic service and development of any necessary amendments to the IGC Code and IGF Code	2019	MSC	CCC				MSC 96/25, paragraph 23.4; CCC 3/15, section 8; and CCC 4/12, section 4
5.2.3.3	Amendments to the IMSBC Code and supplements	Continuous	MSC	CCC				MSC 86/26, paragraph 7.2; MSC 98/23, paragraphs 3.72 to 3.78; and CCC 4/12, section 5
5.2.3.4	Amendments to the IMDG Code and supplements	Continuous	MSC	CCC				MSC 75/24, paragraph 7.36; CCC 3/15, section 6; and CCC 4/12, section 3

SUB-COMMITTEE ON CARRIAGE OF CARGOES AND CONTAINERS (CCC)								
Output number	**Description**	**Target completion year**	**Parent organ(s)**	**Associated organ(s)**	**Coordinating organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
5.2.3 (New)*	Amendments to the CSS Code with regard to weather-dependent lashing	2019	MSC	CCC				MSC 98/23, paragraph 20.7
12.3.1.1	Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas	Annual	MSC/MEPC	III	CCC			MSC 79/23, paragraph 12.7; and CCC 3/15, section 11

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* New output approved by MSC 98. Number of the output to be assigned in due course.

ANNEX 6

PROPOSED PROVISIONAL AGENDA FOR CCC 5

Opening of the session

1 Adoption of the agenda

2 Decisions of other IMO bodies

3 Amendments to the IGF Code and development of guidelines for low-flashpoint fuels

4 Suitability of high manganese austenitic steel for cryogenic service and development of any necessary amendments to the IGC Code and the IGF Code

5 Amendments to the IMSBC Code and supplements

6 Amendments to the IMDG Code and supplements

7 Amendments to the CSS Code with regard to weather-dependent lashing

8 Unified interpretation of provisions of IMO safety, security and environment-related conventions

9 Consideration of reports of incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas

10 Biennial status report and provisional agenda for CCC 6

11 Election of Chair and Vice-Chair for 2019

12 Any other business

13 Report to the Committees

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ANNEX 7

STATEMENTS BY DELEGATIONS AND OBSERVERS*

AGENDA ITEM 3

Statement by the delegation of Italy

"We thank the Coordinator and all Members of the Correspondence Group involved in the submission of document CCC 4/3.

In particular, Italy appreciates the works done in relation to the draft amendments to the "IGF Code relating to Fuel Cells" and "technical provisions for safety of ships using methyl/ethyl alcohol as fuel" - set out in the annexes of the document - and is of the view that the pending issues should be progressed as far as possible by the WG at this session as a matter of priority taking into account: the good progress on the development of such drafts, as stated in document CCC 4/3.

It is understood that a final consolidation of the work carried out so far is necessary before sending the draft of the "technical provisions for safety of ships using methyl/ethyl alcohol as fuel" to other Sub-Committees, as suggested in paragraph 69 of the document.

However, Italy suggests that - except for the safety provisions to be submitted to other Sub-Committees - the finalized text agreed at the end of this session is made available for implementation and application by the industry, although pending the final consideration by the Maritime Safety Committee.

This proposal aims at giving to Administrations and industry a clearer and better defined regulatory framework which is urgently needed on some on-going novel projects under development, therefore easing and speeding up the approval process on the technical pending issues on fuel cells installations.

Thank you, Chair, and may we request that this statement be included in the report of CCC 4."

AGENDA ITEM 4

Statement by the delegation of the Russian Federation

"Russian Federation supports the efforts undertaken by the Republic of Korea and other countries in developing new materials for the maritime industry and would like to make general comments on the process of submission and consideration in the IMO of new and innovative materials.

At MSC 98 the Russian Federation also presented an innovative polymer-composite material and the contruction of portable tanks with shells made of that material.

* Statements have been included in this annex in the order in which they are listed in the report, sorted by agenda items, and in the language of submission (including translation into any other language if such translation was provided).

We are firmly convinced that the emergence of innovative materials and constructions is no longer a rare case but a systemwide event in many sectors of global industry, and every year the numbers involved will inevitably increase. Therefore in our view the maritime industry should not allow itself to lack behind in the use of new materials and should make the process of the authorization as logical, transparent and streamlined as possible.

Based on our experience of the authorization of the portable tanks with shells of polymer-composite material in the IMO and having observed the process of authorization of high manganese austenitic steel as presented and proposed by the Republic of Korea, the Russian Federation is increasingly convinced that our Organization is sometimes not sufficiently efficient in its approach to finding a constructive solution for such issues, given the various approaches in national regulations and procedures and taking into account the various interests of stakeholders.

A large number of documents have been presented to the current session of the Sub-Committee but at the same time views expressed are not convergent and there is an impression of a closed loop which could make the process long and unrpoductive.

Therefore the Russian Federation urges the Sub-Committee to deal with this issue with a traditional rational and system-wide approach which has always been and remains the main and key method of work of the Organization.

We propose to raise the issue of development of an interim guidelines for the future which would formalize the process for authorizing the use of new materials, clearly describe the algorithm and sequence of actions, the origin of requirements, the volume of tests and estimated timeline of the whole process.

As part of the guidelines relevant check-lists could be developed aimed at avoiding long descriptive procedures, but without overlooking the objective evaluation of facts and results connected with authorizing the new material.

Understanding that such guidelines goes beyond the remit of this Sub-Committee we would propose that MSC be asked to formulate new output."

"Российская Федерация поддерживает усилия Кореи и других стран, разрабатывающих инновационные материалы для морской индустрии.

Российская Федерация также представила на КБМ98 инновационный полимерно-композитный материал и конструкцию контейнера-цистерны с сосудом из него.

Российская Федерация твердо верит, что появление инновационных материалов и конструкций сегодня становится не отдельными редкими фактами, а является системным событием во многих областях мировой индустрии, и что с каждым годом количество таковых фактов будет неуклонно возрастать.

Поэтому, на наш взгляд, морская индустрия не должна допускать отставание в применении инновационных материалов и должна сделать их легализацию как можно более логичной, прозрачной и рациональной.

Опираясь на собственный опыт легализации в ИМО контейнера-цистерны с сосудом из ПКМ и, наблюдая за процессом легализации аустенитной стали с высоким содержанием марганца, представленной Республикой Корея, Российская Федерация все больше укрепляется во мнении, что ИМО подчас не достаточно оперативно подходит к

выработке конструктивного решения подобных вопросов, принимая во внимание разные подходы, применяемые национальные правила и процедуры, интересы тех или иных сторон.

Сегодня мы наблюдаем на Подкомитете большое количество представленных документов, значительную активность участников, но при этом мы видим, что мнения участников варьируются.

У нас создается впечатление, что получается некий замкнутый круг, и этот процесс может стать затянутым во времени и непродуктивным.

В связи с этим, Российская Федерация призывает Подкомитет подойти к вопросу с традиционным рациональным и системным подходом, который всегда был и остается главным и важнейшим в этих стенах.

Мы предлагаем поднять вопрос о создании временного руководства, которое бы формализовало процесс легализации инновационных материалов, четко описывало последовательность действий, источники требований, объем испытаний и измерений, и расчетные сроки всего процесса.

В рамках этого руководства, могут быть разработаны соответствующие чек-листы, позволяющие избегать долгих описательных процессов, при этом не упуская четкой и объективной оценки фактов и результатов, связанных с процессом легализации материала.

Понимая, что такое руководство выходит за рамки повестки дня этого Подкомитета, считаем возможным и целесообразным предложить Комитету по безопасности на море сформировать новый результат."

AGENDA ITEM 11

Statement by the observer from FONASBA

"On the subject of container weighing, FONASBA would like to take the opportunity of the previous intervention by the distinguished delegate from Chile to advise this sub-committee that our Federation, representing ship agents and ship brokers in 56 member states worldwide, has been involved with the development of the SOLAS VI.2 amendments since they were first proposed.

The issue of correctly verifying the gross mass of a container is a major issue for our ship agent members, who are required to deal with the implementation of the revised procedures and also the consequences of the rejection of a container resulting from a failure to provide a VGM certificate.

FONASBA has therefore carried out a number of surveys of our members before, during and after the Regulation took effect. The information revealed in those surveys was used by our members in their discussions with their national designated authorities and a corresponding document was submitted to MSC 96 (MSC 96/INF.7).

Earlier this year FONASBA undertook a further survey, this time concentrating on implementation, compliance monitoring and the possible impact of the measures on trade patterns after the end of the three-month post-introduction transition period. The eight questions included in the survey were developed with input from the IMO Secretariat and circulated to our members. A summary of the responses to that survey, provided by FONASBA Members in 41 countries, has now been posted to the public area of our website, under the "Membership Surveys" section of the website, and is therefore available for review by interested parties (https://www.fonasba.com/wp-content/uploads/2017/09/IMO-Survey-Response-Form-FINAL-1.pdf). FONASBA intends to submit same to MSC 99 as there was insufficient time to prepare a submission to CCC 4.

We trust that delegates and national administrations will find the results of the survey useful."

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