

SUB-COMMITTEE ON BULK LIQUIDS AND  
GASES  
16th session  
Agenda item 16

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

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## 1 GENERAL

1.1 The Sub-Committee on Bulk Liquids and Gases (BLG) held its sixteenth session from 30 January to 3 February 2012 under the chairmanship of Mr. S. Oftedal (Norway). The Vice-Chairman, Mr. R. Zhang (China), was also present.

1.2 The session was attended by delegations from the following Member Governments:

ALGERIA	LIBERIA
ANGOLA	LIBYA
ARGENTINA	MALAYSIA
AUSTRALIA	MALTA
BAHAMAS	MARSHALL ISLANDS
BELGIUM	MEXICO
BRAZIL	MOROCCO
CANADA	NETHERLANDS
CHILE	NEW ZEALAND
CHINA	NIGERIA
COLOMBIA	NORWAY
COOK ISLANDS	PANAMA
CYPRUS	PHILIPPINES
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	POLAND
DENMARK	REPUBLIC OF KOREA
DOMINICAN REPUBLIC	RUSSIAN FEDERATION
EGYPT	SAINT KITTS AND NEVIS
ESTONIA	SAUDI ARABIA
FINLAND	SINGAPORE
FRANCE	SOUTH AFRICA
GERMANY	SPAIN
GHANA	SWEDEN
GREECE	SWITZERLAND
INDONESIA	SYRIAN ARAB REPUBLIC
IRAN (ISLAMIC REPUBLIC OF)	TURKEY
IRAQ	TUVALU
IRELAND	UKRAINE
ITALY	UNITED KINGDOM
JAPAN	UNITED STATES
KIRIBATI	VANUATU
LATVIA	VENEZUELA (BOLIVARIAN REPUBLIC OF)

by the following Associate Member of IMO:

HONG KONG, CHINA

by observers from the following intergovernmental organizations:

EUROPEAN COMMISSION (EC)  
INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)

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and by observers from the following non-governmental organizations in consultative status:

INTERNATIONAL CHAMBER OF SHIPPING (ICS)  
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)  
INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)  
INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS (IAPH)  
BIMCO  
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)  
EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)  
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)  
INTERNATIONAL COUNCIL OF MARINE INDUSTRY ASSOCIATIONS (ICOMIA)  
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)  
COMMUNITY OF EUROPEAN SHIPYARDS' ASSOCIATIONS (CESA)  
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS  
(INTERTANKO)  
THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN)  
SOCIETY OF INTERNATIONAL GAS TANKER AND TERMINAL OPERATORS  
LIMITED (SIGTTO)  
DANGEROUS GOODS ADVISORY COUNCIL (DGAC)  
CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA)  
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS  
(INTERCARGO)  
INTERNATIONAL MARITIME LECTURERS ASSOCIATION (IMLA)  
THE EUROPEAN ASSOCIATION OF INTERNAL COMBUSTION ENGINE  
MANUFACTURERS (EUROMOT)  
INTERNATIONAL PETROLEUM INDUSTRY ENVIRONMENTAL CONSERVATION  
ASSOCIATION (IPIECA)  
THE INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY  
(IMarEST)  
INTERNATIONAL SHIP MANAGERS' ASSOCIATION (InterManager)  
INTERNATIONAL PARCEL TANKERS ASSOCIATION (IPTA)  
INTERNATIONAL SAILING FEDERATION (ISAF)  
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)  
INTERFERRY  
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION (IBIA)  
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)  
INTERNATIONAL PAINT AND PRINTING INK COUNCIL (IPPIC)  
NACE INTERNATIONAL  
THE NAUTICAL INSTITUTE  
CLEAN SHIPPING COALITION (CSC)

### **Opening address of the Secretary-General**

1.3 The Secretary-General welcomed participants and informed the Sub-Committee of his three objectives for the Organization: a revitalized and forward-looking organization, strengthened authority in global standard-setting and an efficient and cost-conscious organization. With regard to the meeting, he referred, in particular, to the importance of the entry into force of the Ballast Water Management Convention and urged the Sub-Committee to complete its work on the sampling and analysis protocol to aid its implementation.

1.4 On wider issues, he informed the Sub-Committee that he had recently met the United Nations Secretary-General, Mr. Ban Ki-moon, at the UN Headquarters in New York City, and had discussed matters related to IMO's work and enhanced cooperation between the UN and IMO, in particular, concerning the combating of Somalia-based piracy. In this

regard, the Secretary-General informed the Sub-Committee of a Counter-piracy Capacity-building Conference planned to be held on 15 May 2012 at the IMO Headquarters, as well as his intention to promote a high-level policy debate on arms on board to take place on the first day of the Maritime Safety Committee's next meeting (MSC 90), to be held from 16 to 25 May 2012. He encouraged high-level participation in these events from the United Nations and IMO Member Governments.

1.5 The Secretary-General provided an update on developments related to the **Costa Concordia** accident. He reported that he had urged the Italian Administration to carry out its investigation into the casualty and to report its findings to the Organization as soon as possible, so that IMO could consider seriously any lessons to be learned. The Secretary-General also expressed his gratitude to the Italian authorities for agreeing to his request for IMO to be represented as an observer on the body overseeing the casualty investigation in order to monitor progress closely and remain abreast of emerging issues, as they arise. In the context of the Organization's proactive approach to safety of passenger ships, the Secretary-General informed the Sub-Committee of a channel of communication he had opened with passenger ship operators – through the Cruise Lines International Association (CLIA) – immediately following the **Costa Concordia** accident and welcomed CLIA's positive response to his request to hold meetings with him to discuss the safety of passenger ships in general and, in particular, any findings and recommendations from its own, internal, review of current practices and safety procedures in the operation of passenger ships.

1.6 Given that the safe operation of passenger ships is of major interest to the whole international community, particularly to those who travel as passengers, the Secretary-General urged all IMO Member Governments to take the necessary actions to ensure that their current national safety regulations and procedures are being implemented fully and effectively, including those aiming at ensuring safe operations on board passenger ships.

1.7 He stated that IMO is the right international body to deal with safety of passenger ships and, in particular, any safety review after **Costa Concordia**. He also informed the Sub-Committee that, following consultations with the Chairman of the Maritime Safety Committee, he had decided to include "Passenger Ship Safety" in the Maritime Safety Committee's agenda for MSC 90, in order to provide an opportunity for IMO Members and international organizations to consider any issues arising in regard to the safety of passenger ships and encouraged Member States to make any relevant contributions to the meeting.

#### **Statement by the delegation of Italy**

1.8 Following the remarks of the Secretary-General, the delegation of Italy informed the Sub-Committee that search and rescue operations have continued since the accident and that a casualty investigation related to the **Costa Concordia** was being carried out by the Italian Coast Guard and that the results of the above investigation would be submitted to the Organization as soon as available. The full text of their statement is set out in annex 11.

#### **Statement by the observer from CLIA**

1.9 The observer from CLIA informed the Sub-Committee that it had launched a Cruise Industry Operational Safety Review, which would include a comprehensive assessment of the critical human factors and operational aspects of maritime safety, in response to the **Costa Concordia** casualty. The full text of their statement is set out in annex 12.

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## Chairman's remarks

1.10 The Chairman, in thanking the Secretary-General, stated that his words of encouragement as well as his advice and requests would be given every consideration and that his helpful guidance on the subjects to be considered by the Sub-Committee was very much appreciated.

## Adoption of the agenda

1.11 The Sub-Committee adopted the agenda (BLG 16/1) and agreed, in general, to be guided in its work by the annotations to the provisional agenda contained in document BLG 16/1/1. The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document BLG 16/INF 9.

## 2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the outcomes of FSI 19, MSC 89, MEPC 62, FP 55, DSC 16, C/ES.26 and A 27 relevant to the work of the Sub-Committee, as reported in documents BLG 16/2, BLG 16/2/1 and BLG 16/2/2 (Secretariat) and took them into account in its deliberations when dealing with relevant agenda items.

2.2 The Sub-Committee noted, in particular, that the twenty-seventh regular session of the Assembly had adopted the *Strategic Plan for the Organization* (for the six-year period 2012 to 2017) (resolution A.1037(27)) and the *High-level Action Plan of the Organization and Priorities for the 2012-2013 Biennium* (resolution A.1038(27)) (see also paragraph 13.1).

## 3 EVALUATION OF SAFETY AND POLLUTION HAZARDS OF CHEMICALS AND PREPARATION OF CONSEQUENTIAL AMENDMENTS

3.1 The Sub-Committee recalled that this part of the agenda traditionally contains routine classification tasks which are normally put directly to the ESPH Working Group prior to further consideration by the Sub-Committee. Notwithstanding the above, the Sub-Committee also recalled that it traditionally considers the report of the intersessional meeting of the ESPH Working Group and any other documents submitted to the session containing matters of principle for which discussions in plenary are necessary.

### Report of ESPH 17

3.2 In considering the report of the seventeenth intersessional meeting of the ESPH Working Group (BLG 16/3), the Sub-Committee approved the report in general and, in particular:

- .1 agreed with the evaluation of new products and consequential inclusion in the IBC Code;
- .2 concurred with the evaluation of cleaning additives, noting that 24 formulations had been evaluated, 19 of which were approved for inclusion in the list of cleaning additives meeting the requirements of the criteria outlined in MEPC.1/Circ.590;
- .3 noted the concern of the working group with regard to the usage in some cleaning additives of components that are carcinogenic, mutagenic, reprotoxic or sensitizing;

- .4 noted that new data on electrical equipment for inclusion in chapter 17 of the IBC Code has been incorporated into List 1 of MEPC.2/Circ.17;
- .5 agreed to other product additions, amendments and deletions introduced for MEPC.2/Circ.17;
- .6 noted the discussion with regard to the "contains" name used for mixtures with safety hazards for entry into List 3 of the MEPC.2/Circular and the request for interested parties to submit their views on this matter for further consideration;
- .7 noted the work being undertaken by the GESAMP/EHS Working Group to update and improve GESAMP Reports and Studies No.64 dealing with the revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships;
- .8 agreed to the scope of the draft 2012 amendments to be prepared for chapters 17, 18 and 19 of the IBC Code for approval and adoption by MEPC and MSC;
- .9 noted the successful completion of the collation of missing information on electrical equipment criteria as requested in MSC.1/Circ.1325 and agreed to the listing of a final group of products in List 1 of MEPC.2/Circ.18 pending the inclusion of all of these amendments in the next revision of the IBC Code;
- .10 noted the discussions in relation to undertaking a review of chapters 17 and 18 of the IBC Code and endorsed the proposals for progressing this issue, noting that further discussions on this topic would take place at this session;
- .11 noted the discussions and the conclusions reached on the reissue of Chemical Carrier Code Certificates of Fitness;
- .12 concurred with the view expressed by the group in relation to the recirculation of a cargo during a voyage with respect to its compliance with MSC-MEPC.2/Circ.8; and
- .13 approved the future work programme of the ESPH Working Group notwithstanding any additional tasks that may be given to it following discussion of items relevant to its work.

3.3 With regard to paragraph 3.2.11 above relating to the reissue of Chemical Carrier Code Certificates of Fitness and noting that the group had not reached any consensus on this point, it was proposed by the representative of IACS that the matter should be considered again by the group with a view to establishing some core principles on the issue which IACS might then be able to utilize in order to formulate an appropriate guidance text. This was supported by the Sub-Committee and it was agreed that this item should be added to the terms of reference for the working group to be established for this session.

3.4 In relation to paragraph 3.2.12, the delegation of the Cook Islands proposed that the conclusion reached on cargo recirculation was an important issue and that it needed not only to be recorded in a report but should be communicated more widely. The Sub-Committee agreed with this view and tasked the working group also to consider this proposal accordingly.

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## Outcomes of MSC 89 and MEPC 62

3.5 The Sub-Committee noted that a number of issues arising from the outcomes of MSC 89 and MEPC 62 as reported in documents BLG 16/2 and BLG 16/2/1 (both by the Secretariat) required attention under this agenda item as summarized below:

- .1 MSC 89, in considering draft amendments to SOLAS chapter VI, regarding the prohibition of the blending of bulk liquid cargoes during the sea voyage, had considered document MSC 89/11/1 (Netherlands), proposing that an additional regulation should be added to specifically prohibit production processes on board ships that result in new products and, having noted the general support for the importance of the issues raised, had decided to refer this document to BLG 16 to consider this further and advise MSC 90 accordingly;
- .2 MEPC 62, having established a correspondence group to further develop the draft revised Guidelines for the implementation of the revised MARPOL Annex V, had instructed the BLG Sub-Committee to consider the issue of discharge of cleaning agents or additives in deck washing water, as referred to in regulations 4.2 and 6.2 of the revised MARPOL Annex V, and to advise it accordingly; and
- .3 MEPC 62 had also considered a proposal by the Russian Federation (MEPC 62/7/9) to delete all references to "oil-like substances" in the *Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers* (resolution MEPC.108(49)). Having concurred on the existence of inconsistencies in the Guidelines, MEPC 62 had instructed the BLG Sub-Committee to consider the issue and advise it accordingly, in light of the newly approved MEPC.1/Circ.761 on the *2011 Guidelines for the carriage of blends of petroleum oil and biofuels*.

3.6 The Sub-Committee agreed that the working group should address these points by adding them to their agenda and then report to the Sub-Committee with their conclusions as appropriate.

3.7 In relation to paragraph 3.5.1, the representative of OCIMF noted that in the case of the **Probo Koala** tragedy, the loss of life was not caused by processing on board but by disposal of residues on land and accordingly, it was suggested that the generation of waste may need to be given attention. Additionally, the representative of IMCA requested that in considering any further regulation, clarification with respect to the requirements of Offshore Support Vessels should be taken into account, as was the case in the development of the proposed SOLAS chapter VI, regulation 5-2.

3.8 As a general point, it was noted that care needed to be exercised not to confuse blending and production processes and the representative of IBIA also requested that it should be made clear that restrictions to blending operations do not apply to bunker barges.

3.9 The Sub-Committee, noting all of these points, requested the working group to take full account of these issues as they progressed this agenda item.

**Outcomes of FP 55**

3.10 The Sub-Committee noted that FP 55 had reviewed the use of alcohol resistant foams when carrying ethanol/gasoline blend cargoes. This review recognized that, in view of the borderline percentage set for ethanol/gasoline biofuel blends (e.g. 25/75), it was necessary to clarify the ethanol percentage at which such blends carried under MARPOL Annex I would need stricter fire protection requirements under SOLAS regulation II-2/1.6.2.

3.11 The Sub-Committee noted that the view of the Working Group on Performance Testing and Approval Standards for Fire Safety Systems established at FP 55 was that, in general, any blends containing more than five per cent ethanol should be protected by alcohol resistant foams in accordance with the IBC Code. In this regard, the group also noted that no matter what type of foam concentrate is used, a gentle application technique is critical to proper extinguishment of ethanol/gasoline blends. This requires the crew to fight the fire by directing the foam stream onto a vertical surface such as a structural member or piping manifold and allowing it to run down onto the burning cargo. The group was of the view that crew members on ships carrying such cargoes should be trained accordingly.

3.12 In considering this information, the Sub-Committee fully endorsed the views expressed and proposed that any consequential actions should now be considered accordingly.

3.13 Additionally, FP 55, as noted in document BLG 16/3/2 (Secretariat), had requested the BLG Sub-Committee to:

- .1 prepare amendments to chapter 11 of the IBC Code to reflect the application of the amendments to SOLAS regulation II-2/4.5.5;
- .2 taking into account paragraph 7 of document FP 55/6/3 (United States), prepare amendments to chapters 17 and 18 of the IBC Code to refer to SOLAS regulation II-2/4.5.5 and to identify the cargoes to which inerting media may apply; and
- .3 note the discussion reflected in paragraphs 6 to 9 of document BLG 16/3/2 (Secretariat), and concur with the proposed text contained in paragraph 6, in order to develop appropriate editorial modifications when preparing draft amendments to the IBC Code.

3.14 In this connection, the Sub-Committee considered document BLG 16/3/4 and the related information document BLG 16/INF.8 (both by Norway), highlighting some new considerations related to the outcome of FP 55 and the resulting amendments to SOLAS regulation II-2/4.5.5 in terms of consequential amendments to the IBC Code. After some discussion, the Sub-Committee noted that whilst there was a general agreement in principle for the need to address all relevant chapters of the IBC Code, some of the specific points raised could not be fully supported. In particular, when considering the operational phases when inerting media should be applied, it was stressed that there should be no diversion from the direction provided by the FP Sub-Committee which was that the application of inert gas to render the cargo tank non-flammable should take place before the commencement of unloading;

3.15 Taking account of the concerns raised, it was agreed that the working group should be instructed to examine these issues further in order to finalize the relevant amendments required for the IBC Code.

3.16 Highlighting the importance of inert gas provisions, the representative from OCIMF gave a statement reflecting on two recent oil tanker explosions which tragically resulted in a subsequent loss of life. The full text of their statement is set out in annex 13.

### **Evaluation of products**

3.17 The Sub-Committee noted documents BLG 16/3/3 (Singapore) and BLG 16/3/7 (INTERTANKO) relating to the evaluation of a new mixture product and the re-evaluation of an existing IBC Code substance respectively.

3.18 The Sub-Committee tasked the working group to carry out the evaluation of these two proposals since it was recognized that the evaluation of such products is a routine task of the working group, which is normally put directly to the group prior to any consideration by the Sub-Committee.

### **IBC Code amendments**

3.19 Similarly, the Sub-Committee agreed to forward document BLG 16/3/8 (Secretariat) dealing with proposed amendments to chapters 17 and 18 of the IBC Code directly to the working group for consideration and action as appropriate.

### **ODME approval and information on HVO biofuel**

3.20 The Sub-Committee noted the concerns expressed in document BLG 16/3/1 (Brazil) relating to biofuel blends and the approval of Oil Discharge Monitoring Equipment (ODME) and particularly the need for information to be submitted on any development activities for biofuel blends containing 75 per cent or more petroleum oil.

3.21 In this context, it was proposed that the following aspects should be addressed:

- .1 information on ODME which may already be certified for biofuel blends;
- .2 if new ODME equipment and/or retro-fit kit for existing equipment will be required and if so, if this is available;
- .3 what costs may be associated both with new ODME approved for biofuel blends and with modifying existing ODME; and
- .4 for any ODME which is approved and already installed on board, if its operational performance has been satisfactory (including details of the manufacturer and the classification society responsible for certification).

3.22 The Sub-Committee agreed that such information would be useful and endorsed this view. Two delegations were of the view that, having this information available was not a condition for the requirement set out in the *2011 Guidelines for Carriage of Blends of Petroleum Oil and Biofuels* (MEPC.1/Circ.761) that, from 1 January 2016, Oil Discharge Monitoring Equipment shall be in compliance with regulation 31 of Annex I of MARPOL and should be approved for the mixture being transported.

3.23 It was agreed that all interested parties should submit any relevant technical information for consideration to the next session of the Sub-Committee and it was proposed that, given the limited number of manufacturers involved with this equipment, Administrations or industry representatives who have contacts where the manufacturers are based should bring this issue to their attention.

3.24 The Sub-Committee took note of the interesting update on Hydrotreated Vegetable Oil (HVO) Renewable Diesel as reported in BLG 16/INF.7 (Finland) and the view expressed of a potential future need to review MARPOL Annex I in order to accommodate synthetic hydrocarbon products produced using renewable raw materials. It was noted, however, that to progress this issue further, it would be necessary to propose a new work item to review this proposal to MEPC for consideration.

### **Review of chapters 17 and 18 of the IBC Code**

3.25 The Sub-Committee considered two documents, BLG 16/3/5 and BLG 16/3/6 (both by Norway, the Netherlands and CEFIC), which addressed the review of chapters 17 and 18 of the IBC Code and the possible use of some of the inherent properties of chemical substances to assist with this work.

3.26 It was agreed that addressing certain aspects of chapter 21 to utilize inherent properties was a valid pathway to explore and both documents were accordingly referred to the working group for further consideration and action as appropriate.

### **Establishment of the Working Group**

3.27 Recognizing the necessity to make further progress on the above issues, the Sub-Committee established the Working Group on Evaluation of Safety and Pollution Hazards of Chemicals (ESPH) and instructed it, taking into account the comments and decisions made in plenary, to:

- .1 consider issues relating to the evaluation of new products;
- .2 conduct an evaluation of cleaning additives;
- .3 review the MEPC.2/Circular – Provisional classification of liquid substances transported in bulk, and other related matters;
- .4 consider the introduction of an additional regulation to address production processes on board ships in relation to the amendments approved at MSC 89 for SOLAS chapter VI regarding the prohibition of the blending of bulk liquid cargoes during the sea voyage;
- .5 consider the issue of the discharge of cleaning agents or additives in deck and cargo hold washwater with reference to regulations 4.2 and 6.2 of the revised MARPOL Annex V;
- .6 consider the proposal to delete all references to "oil-like substances" in the *Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers* (resolution MEPC.108(49)) in the light of changes introduced in MARPOL and the distribution of MEPC.1/Circ.761 setting out the *2011 Guidelines for the carriage of blends of petroleum oil and biofuels*;
- .7 address the issues arising from FP 55 and, taking account of the comments made in plenary, prepare draft amendments for various chapters of the IBC Code accordingly;

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- .8 finalize the scope and contents of the 2012 amendments to chapters 17, 18 and 19 of the IBC Code in order to facilitate the generation of updated listings for subsequent approval by MSC and MEPC;
  - .9 further consider options addressing the inconsistencies in carriage requirements noted for a number of entries in chapters 17 and 18 of the IBC Code, including undertaking a review of relevant chapter 21 guidance and develop a revised timeline for this work;
  - .10 consider further the development of guidance for the re-issue of Chemical Carrier Code Certificates;
  - .11 develop a draft text to address cargo circulation within a tank or through a heat exchanger in the context of MSC-MEPC.2/Circ.8 and propose a dissemination route for this information; and
  - .12 prepare the work programme and agenda for ESPH 18.

### **Report of the ESPH Working Group**

#### ***Discussion on the draft new SOLAS regulation on prohibition of the production process of bulk liquid cargoes during the sea voyage***

3.28 The observer from IMCA, in referring to the draft new SOLAS regulation on prohibition of the production process of bulk liquid cargoes during the sea voyage, expressed concern that the regulation as proposed was too wide-ranging and may lead to a prohibition of some accepted operational activities on ships used to facilitate the search and exploitation of seabed mineral resources (for example, hydration processes associated with cement and drilling muds). Additionally, although noting that the prohibition was intended specifically for processes taking place "during the sea voyage", there was equally a concern that this might be taken to apply to any Mobile Offshore Drilling Unit (MODU) with Dynamic Positioning (DP) if such a unit was construed to be always "underway" and not "working on station". This might result in a ban being misapplied to MODUs mixing fluids which are critical to maintaining well control or are necessary for the stimulation of oil and gas production.

3.29 Whilst acknowledging that no information on operational practices had been available to the working group so as to be able to consider these points, IMCA stated that there was a need for an exemption for the offshore industry to be introduced. IMCA proposed to provide an appropriate input to MSC 90 and requested therefore that this feedback should be taken into account before finalizing the new regulation. With respect to the input to be provided by IMCA, it was requested by the Chairman of the Working Group that the specific information requirements as noted in paragraph 6.4 of document BLG 16/WP.3 should be addressed.

#### ***Action taken by the Sub-Committee***

3.30 Having considered the report of the ESPH Working Group (BLG 16/WP.3), the Sub-Committee approved it in general and, in particular:

- .1 agreed to the evaluation of the Trade-named mixture OLOA 49819, for inclusion in List 3 of the MEPC.2/Circular with validity for all countries and no expiry date, and to the revision of the carriage requirements for Hexamethylenediamine (molten), subject to endorsement by MEPC 64;

- .2 concurred with the evaluation of cargo tank cleaning additives found to meet the requirements of regulation 13.5.2 of MARPOL Annex II, as set out in annex 1, for inclusion in the next edition of the MEPC.2/Circular, subject to the endorsement by MEPC 64;
- .3 noted the review undertaken of MEPC.2/Circ.17 and the discussion clarifying two erroneous entries present in annex 6 of the circular (Synonyms for vegetable oils);
- .4 concurred with the view of the group that an additional regulation to address production processes on board ships, in relation to the amendments approved for SOLAS chapter VI regarding the prohibition of the blending of bulk liquid cargoes during the sea voyage, should be introduced, and endorsed the proposed draft text as set out in annex 2 for consideration by MSC 90, noting the need for additional information to be supplied to MSC 90 regarding the activity of ships engaged in oil-related activities as summarized in paragraphs 3.28 and 3.29 above, in order to finalize the draft text;
- .5 agreed with the conclusion of the group in relation to the discharge of cleaning agents with reference to regulations 4.2 and 6.2 of the revised MARPOL Annex V whereby:
  - .1 an alternative system of classification to that employed for MARPOL Annex II cleaning additives should be utilized, given the potential diversity of products employed and this should function on a producer self-classification basis in line with principles already established in the IMDG Code; and
  - .2 classification criteria should require that the cleaning product is not a harmful substance in accordance with MARPOL Annex III and does not contain any components which are known to be carcinogenic, mutagenic or reprotoxic;
- .6 agreed that references to "oil-like substances" in the *Revised Guidelines and Specification for Oil Discharge Monitoring and Control Systems for Oil Tankers* (resolution MEPC.108(49)) should be deleted and that the guidelines should also be updated taking into account MARPOL revisions and the new *Guidelines for the carriage of blends of petroleum oil and biofuels* (MEPC.1/Circ.761) and noted that this work will be finalized at ESPH 18 and that there would then be a requirement to consider consequential amendments to Appendix II to Annex I of MARPOL: Form of IOPP Certificate and Supplements, point 6.1.5;
- .7 agreed to the proposed amendments to *2011 Guidelines for the carriage of blends of petroleum oil and biofuels* (MEPC.1/Circ.761) concerning the need for ethanol/gasoline blends containing more than five per cent ethanol to be protected by alcohol resistant foams and a corresponding amendment to column I for the entry Biofuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume), set out in annex 3, for consideration and approval by MEPC 64;

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- .8 noted the discussions in relation to the outcome of FP 55 and the intent to finalize all consequential amendments to the IBC Code at ESPH 18 and agreed that the group may then report to FP 56 directly;
- .9 agreed to the draft amendments to the IBC Code, as set out in annex 4, and requested the Secretariat to incorporate all of the changes into new consolidated listings and to submit the proposed amendments for subsequent approval by MEPC 63 and MSC 90;
- .10 noted the progress on the review of inconsistencies in carriage requirements observed for a number of entries in chapters 17 and 18 of the IBC Code and agreed with the proposed work programme and timeline for these activities;
- .11 noted the discussion on the re-issue of chemical code certificates and the request for further information to be submitted to ESPH 18 for consideration;
- .12 endorsed the conclusion of the group that the prohibition of the blending of cargoes, as set out in MSC-MEPC.2/Circ.8, does not apply where cargo is recirculated within its cargo tank or through an external heat exchanger during the voyage for the purpose of maintaining cargo homogeneity or temperature control, including when two or more different products have previously been loaded into the same cargo tank within port limits and invited MSC 90 to take this into account when considering the draft new SOLAS regulation VI/5.2;
- .13 approved the future work programme for the intersessional meeting of the ESPH Working Group in October 2012; and
- .14 agreed to request MSC 90 and MEPC 64 to approve an intersessional meeting of the ESPH Working Group in 2013.

#### ***Clarification on the evaluation of cleaning additives***

3.31 With respect to the evaluation of cleaning additives, some clarification was requested by the delegation of the Cook Islands on the range of products which had been rejected in the evaluation process as noted in paragraph 4.4 of the Working Group's report (BLG 16/WP.3). The Sub-Committee were advised that products which had been turned down were not intended for use with cargo tank washing machines to remove cargo residues but that rather, they had other specific functionality/intended uses. It was noted that such rejections are routinely applied in the evaluation activities of the group and that they have been regularly recorded in many of the past reports of the Working Group.

#### **4 DEVELOPMENT OF GUIDELINES AND OTHER DOCUMENTS FOR UNIFORM IMPLEMENTATION OF THE 2004 BWM CONVENTION**

4.1 The Sub-Committee noted that, since BLG 15, six more States (the Islamic Republic of Iran, Lebanon, Mongolia, Montenegro, Palau and Trinidad and Tobago) have acceded to the Ballast Water Management Convention, which brought the number of Contracting Governments to 33, representing 26.46 per cent of the world merchant fleet tonnage. The Sub-Committee urged the other Member States to ratify this Convention at the earliest possible opportunity.

4.2 The Sub-Committee recalled that BLG 15 had agreed to re-establish the Ballast Water and Biofouling Working Group at this session to deal with agenda items 4 and 5, with the provisional terms of reference set out in annex 4 to document BLG 15/WP.4.

### **Planning of work**

4.3 The Sub-Committee had for its consideration three documents submitted under this item and agreed to plan its work as follows:

- .1 development of a BWM circular on ballast water sampling and analysis, taking into account document BLG 16/4 (European Commission); and
- .2 consideration of other matters related to ballast water management and control, taking into account documents BLG 15/5/7 (Canada) and BLG 16/4/1 (Republic of Korea).

### **Development of a BWM circular on ballast water sampling and analysis protocols**

4.4 The Sub-Committee recalled that BLG 15, having acknowledged that sampling and analysis continues to be a high priority, with ramifications related to the Guidelines for port State control, currently under development by the FSI Sub-Committee, agreed that additional time is needed to discuss all the aspects related to this matter. In this respect, BLG 15 agreed to establish a correspondence group under the coordination of the European Commission to continue this work intersessionally.

4.5 Having considered document BLG 16/4 (European Commission) introducing the Report of the Correspondence Group to finalize the development of a BWM circular on ballast water sampling and analysis, the Sub-Committee thanked the coordinator for the comprehensive work accomplished and noted the concerns regarding the manner of confirming compliance in accordance with the sampling and analysis protocols, expressed by ICS, Japan, the Bahamas, INTERTANKO and IACS as well as the suggestions for improvement made by the United States and the Russian Federation.

4.6 The Sub-Committee agreed on the need to finalize this circular as soon as possible in light of the expected entry into force of the BWM Convention, and requested the working group, in case it was not able to complete the BWM circular at this session, to provide a clear indication of the future work that may be necessary to complete this task in order to facilitate a realistic review of the target completion date of this agenda item.

### **Other matters related to ballast water management and control**

4.7 Following consideration of document BLG 15/5/7 (Canada), containing a proposal to utilize ballast water exchange in combination with a ballast water management system to achieve an enhanced level of protection, the Sub-Committee noted the concerns expressed by ICS and INTERTANKO and agreed to refer this document to the Ballast Water and Biofouling Working Group for detailed consideration if time permits.

4.8 Following consideration of document BLG 16/4/1 (Republic of Korea), the Sub-Committee noted the concerns expressed by ICS, Japan and the United Kingdom and agreed that it would be premature to revisit the scaling guidance at this stage. Nevertheless, the Sub-Committee agreed to instruct the Ballast Water and Biofouling Working Group to further consider that document and advise it accordingly, time permitting.

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## **Establishment of the working group**

4.9 Having considered the above matters, the Sub-Committee established the Working Group on Ballast Water and Biofouling (see also paragraph 5.10) and instructed it, taking into account the comments made and decisions taken in plenary, to:

- .1 finalize as a matter of urgency, if possible, the BWM circular to provide ballast water sampling and analysis protocols and to give advice on the uniform application of these protocols, using the text contained in annex 1 to document BLG 16/4; if not finalized, develop a timeline for the future work;
- .2 time permitting, consider documents BLG 15/5/7 (Canada) and BLG 16/4/1 (Republic of Korea) and advise the Sub-Committee as appropriate; and
- .3 submit a written report on the work carried out, including recommendations to MEPC, for consideration by the Sub-Committee.

4.10 The Sub-Committee recalled that MEPC 62 had agreed, in accordance with paragraph 6.9 of circular MSC-MEPC.1/Circ.4, that urgent matters regarding the development of Guidelines and other documents for uniform implementation of the 2004 BWM Convention, emanating from BLG 16, should be reported to MEPC 63, and instructed the working group to consider the completion of the BWM circular to provide ballast water sampling and analysis protocols as its highest priority.

## **Report of the working group**

4.11 Having considered the part of the report of the working group (BLG 16/WP.4) relating to this agenda item, the Sub-Committee approved the report in general and took action with respect to ballast water issues, as outlined hereunder.

4.12 While acknowledging the progress made by the working group, the observer from ICS, supported by a number of delegations, expressed serious concerns regarding the manner of confirming compliance in accordance with the draft circular on ballast water sampling and analysis. A major concern represented the relationship between the draft circular and the type approval testing of ballast water management systems according to the Guidelines (G8) and the potential for properly used and maintained type-approved systems being found non-compliant when assessed in accordance with the circular. Other concerns included the representativeness of samples, the lack of standardized procedures for conducting the sampling and analysis, and the limited level of confidence of the sampling process.

4.13 An equal number of other delegations expressed the view that the draft Circular contains the current state-of-the-art science with respect to sampling and analysing ships' ballast water and should be submitted for consideration by MEPC 63 as it would facilitate the development of harmonized standard operating procedures for sampling and analysis of ballast water. They were also of the view that the Sub-Committee should only deal with the scientific aspects related to sampling and analysis, leaving aspects concerning port State control inspections to the FSI Sub-Committee.

4.14 Due to the significant difference in views over its implications and its relationships with other guidelines, the Sub-Committee decided to note the outcome of the working group and to develop the draft Circular further at the next session.

4.15 The Chairman of the Sub-Committee expressed his intention to provide an overview of the requirements of the Ballast Water Management Convention, Guidelines (G2) and (G8), other guidance documents regarding this matter and their relations with the draft Circular in order to clarify the implications of approving the Circular and facilitate the harmonization of the views expressed.

4.16 The Sub-Committee agreed to invite MEPC 64 to endorse the forwarding of documents BLG 16/4 and BLG 16/WP.4 to the FSI Sub-Committee for consideration in the context of developing guidelines for port State control under the 2004 BWM Convention.

4.17 The Sub-Committee noted the intention of Canada to provide further information regarding ballast water exchange followed by treatment for freshwater ports.

4.18 The Sub-Committee noted the intention of the Republic of Korea and some other delegations to further elaborate on the proposed changes to the Guidance on scaling of ballast water management systems.

4.19 The Sub-Committee urged Member States and observers to share their experience in implementing the sampling and analysis procedures through submissions to BLG 17 to facilitate the development of harmonized standard operating procedures.

4.20 The Sub-Committee noted the group's recommendation to re-establish the Ballast Water and Biofouling Working Group at BLG 17 (see paragraph 5.16) with the following provisional terms of reference:

- .1 finalize the BWM circular on ballast water sampling and analysis using the text contained in BLG 16/WP.4, annex 1 as a basis;
- .2 develop a harmonized standard operating procedure for ballast water sampling and analysis to give advice on the uniform application of the sampling and analysis;
- .3 finalize the draft time frame, criteria and process for evaluating the effectiveness of the Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species, using the previous work undertaken under this agenda item; and
- .4 provide a written report to BLG 17.

In this context, the Sub-Committee also noted that the Chairman would advise well in time before BLG 17 on the final arrangements of working and drafting groups, taking into account the submissions received on the respective subjects (see paragraph 13.4).

## **5 DEVELOPMENT OF INTERNATIONAL MEASURES FOR MINIMIZING THE TRANSFER OF INVASIVE AQUATIC SPECIES THROUGH BIOFOULING OF SHIPS**

5.1 The Sub-Committee recalled that MEPC 56 had approved the inclusion of a new high-priority item "Development of international measures for minimizing the transfer of invasive aquatic species through biofouling of ships" in the BLG Sub-Committee's work programme with the target completion date of 2010, which was extended by MEPC 61 to the year 2012.

5.2 The Sub-Committee also recalled that, having completed the work on the draft Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species, BLG 15 agreed that, due to time constraints, it was not possible to finalize the work on this output and agreed to re-establish the Ballast Water and Biofouling Working Group at BLG 16 with the terms of reference set out in annex 4 to document BLG 15/WP.4.

### **Planning of work**

5.3 The Sub-Committee had for its consideration two documents submitted under this item. In addition, the discussion on the potential need for guidance on the disposal of in-water cleaning material to land-based facilities was referred by BLG 15 to this session (see document BLG 15/19, paragraphs 9.9.4 and 9.10.3). The Sub-Committee agreed to plan its work as follows:

- .1 consideration of the draft guidance for minimizing the transfer of invasive aquatic species as biofouling (hull fouling) for recreational craft, taking into account document BLG 16/5 (Australia, et al.);
- .2 consideration of the draft Procedure for evaluation of the guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species, taking into account document BLG 16/5/1 (Australia, et al.); and
- .3 consideration of the need for the development of a guidance document on disposal of biofouling waste in land-based facilities.

### **Guidance for minimizing the transfer of invasive aquatic species as biofouling (hull fouling) for recreational craft**

5.4 The Sub-Committee recalled that BLG 15 had agreed to include all ships within the scope of the Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species and to develop a separate guidance document that provides advice for owners and/or operators of recreational craft less than 24 metres in length based on annex 3 to document BLG 15/9.

5.5 Having considered document BLG 16/5 (Australia et al.), which provides an updated version of the initial guidance document contained in BLG 15/9, annex 3, the Sub-Committee agreed to the draft Guidance for minimizing the transfer of invasive aquatic species as biofouling (hull fouling) for recreational craft for approval by MEPC 64 and subsequent dissemination as an MEPC circular, as set out in annex 5.

### **Procedure for evaluation of the guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species**

5.6 The Sub-Committee considered document BLG 16/5/1 (Australia, et al.), containing an updated draft time frame, criteria and process for evaluating the effectiveness of the Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling Guidelines) and noted the split views on this matter.

5.7 Some delegations were of the view that the development of a time frame, criteria and process for evaluating the effectiveness of the Biofouling Guidelines is not a planned output and should not be considered at this stage due to limited experience available, the

voluntary character of the Guidelines and the need to focus on the completion of the ballast water sampling and analysis protocols.

5.8 Some other delegations believed that developing guidance for evaluating the effectiveness of the Biofouling Guidelines was part of the original planned output "Development of international measures for minimizing the transfer of invasive aquatic species through biofouling of ships" and, bearing in mind the effort made in developing the draft proposal, document BLG 16/5/1 should be further considered in the working group with a view to its finalization.

5.9 After extensive debate, the Sub-Committee agreed to instruct the group to advise on the most appropriate way to address this matter.

#### **Guidance document on disposal of biofouling waste in land-based facilities**

5.10 The Sub-Committee recalled that the *Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species* (resolution MEPC.207(62)), identified, under the heading "Future work", the need for comprehensive methods for assessing the risks associated with in-water cleaning and the need for in-water cleaning technologies that ensure effective management of the anti-fouling system, biofouling and other contaminants, including effective capture of biological material. The Sub-Committee also recalled that, due to time constraints, BLG 15 was unable to consider the potential need for the development of a guidance document on disposal of biofouling waste in land-based facilities.

5.11 Having briefly discussed the matter of in-water cleaning, the Sub-Committee agreed that such guidance may not be necessary at this stage. Instead, the Sub-Committee was of the view that the shipping community should focus on the implementation of the Biofouling Guidelines to gain more experience.

#### **Future work**

5.12 In light of the considerable work that still needs to be carried out under this agenda item and bearing in mind that at this session the Ballast Water and Biofouling Working Group will focus on finalizing the BWM circular on ballast water sampling and analysis, the Sub-Committee instructed the working group to assess the remaining workload on biofouling and suggest an appropriate timeline and course of action.

#### **Instructions to the Ballast Water and Biofouling Working Group**

5.13 The Sub-Committee agreed to add the following terms of reference concerning ships' biofouling to those of the Ballast Water and Biofouling Working Group established during the consideration of agenda item 4 (see also paragraph 4.9):

- .1 time permitting, consider the issue of how to evaluate the Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species and advise the Sub-Committee accordingly;
- .2 assess the remaining workload under this agenda item and suggest an appropriate timeline and course of action; and
- .3 submit a written report on the work carried out on ships' biofouling including recommendations to MEPC, for consideration by the Sub-Committee.

## Report of the working group

5.14 Having considered the part of the report of the working group (BLG 16/WP.4) related to this agenda item, the Sub-Committee took action with respect to the biofouling issues as outlined hereunder.

5.15 The Sub-Committee agreed to continue the development of a guidance document for the evaluation of the Biofouling Guidelines implementation process, based on the existing work undertaken under this output and to extend the target completion date for this agenda item to 2013.

5.16 The Sub-Committee noted the group's recommendation to re-establish the Ballast Water and Biofouling Working Group at BLG 17 (see paragraph 4.20). In this connection, the Sub-Committee noted that the Chairman would advise well in time before BLG 17 on the final arrangements of working and drafting groups, taking into account the submissions received on the respective subjects (see paragraph 13.4).

## 6 DEVELOPMENT OF INTERNATIONAL CODE OF SAFETY FOR SHIPS USING GASES OR OTHER LOW-FLASHPOINT FUELS

### GENERAL

6.1 The Sub-Committee recalled that MSC 86, having adopted the *Interim Guidelines on safety for natural gas-fuelled engine installations in ships* (resolution MSC.285(86)), noted that this Sub-Committee had commenced work on the development of a new International Code for Ships using Gas as Fuel (IGF Code) and agreed to expand the scope and title of this output to include low-flashpoint liquid fuels in the Code.

6.2 The Sub-Committee recalled also that BLG 15, having established a working group to further develop the draft IGF Code, instructed the group to submit part 1 of its report to BLG 15 and part 2 to this session.

6.3 The Sub-Committee further recalled that BLG 15 established a joint correspondence group to develop the IGF and the IGC Codes, taking into account its decision that, as far as possible and where applicable, the draft revised IGC Code and the new IGF Code should be harmonized, and agreed to the terms of reference for matters related to the development of the new IGF Code, as set out in paragraph 6.16 of document BLG 15/19.

### REPORT (PART 2) OF THE WORKING GROUP ESTABLISHED AT BLG 15

6.4 The Sub-Committee considered part 2 of the report of the Working Group on Development of Provisions for Gas-fuelled Ships established at BLG 15 (BLG 16/6) and, having approved it in general, noted that the group's report had been considered in detail by the correspondence group (BLG 16/6/1 and BLG 16/INF.2) established at BLG 15.

### Report of the correspondence group and related submissions

6.5 The Sub-Committee considered the report of the correspondence group (BLG 16/6/1 and BLG 16/INF.2) and, having approved it in general, noted that the group had further developed the draft IGF Code; however, there were still several unresolved issues to consider, in particular deciding on the two alternative texts for chapter 7 (Fuel storage), matters related to the draft emergency shutdown provisions and harmonization of the IGF and IGC Codes.

6.6 The Sub-Committee had also for its consideration the following documents commenting on the report of the correspondence group:

- .1 BLG 16/6/5 (Germany), proposing that fuel tanks should be located inboard of a longitudinal bulkhead which is at least 760 mm from the shell, in pursuance of the results of collision calculations and conclusions from recently updated collision and grounding data originating European Commission funded research project on Goal Based Damage Stability (GOALDS);
- .2 BLG 16/6/7 (SIGTTO), commenting on the report of the correspondence group (BLG 16/6/1), referring to casualty reports and raising its concern on the current draft of the IGF Code from the point of view of design and operational aspects of the vessels, in particular to pertinent issues (the location of accommodation above the fuel tank/containment system and gas conditioning/make up equipment); and
- .3 BLG 16/6/8 (IMarEST), commenting on the report of the correspondence group (BLG 16/6/1), pointing out in particular that the current draft IGF Code proposes that training requirements should be controlled by the company and master, which they believe would inevitably lead to varying levels of understanding and competence without the addition of safeguards similar to those currently present through the implementation of the STCW Convention for gas as cargo, and also proposing that the current STCW Convention requirements for training of those involved with the carriage of liquefied gases as cargo be incorporated directly into the IGF Code, amended to cover only those gases approved for use as fuel.

6.7 In considering the report of the correspondence group together with the above documents, the Sub-Committee took action as indicated in paragraphs 6.8 to 6.10.

### **Provisions on use of mobile tanks**

6.8 The Sub-Committee, having noted the comments made that mobile tanks are already in use for the storage of gas fuel on board ships, agreed to develop technical provisions in the relevant chapter of the Code and decided that the correspondence group, if established, should consider this matter further and advise the Sub-Committee accordingly (see also paragraph 6.28).

### **Location of fuel tanks**

6.9 With regard to the location of fuel tanks, the Sub-Committee, having had an in-depth discussion on how best to proceed with this issue, agreed that in determining the location of such tanks, a risk-based approach should be pursued in lieu of a deterministic approach and instructed the working group to take action accordingly (see paragraph 6.14).

### **Training requirements**

6.10 The Sub-Committee, having considered matters related to the development of training requirements, in particular, whether a new module should be developed specifically for the IGF Code, agreed that training requirements should be developed for inclusion in the STCW Convention and instructed the working group to further consider this issue and advise the Sub-Committee accordingly (see paragraph 6.14.3).

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## Information and research data related to the IGF Code

6.11 The Sub-Committee had the following documents for consideration:

- .1 BLG 16/6/2 and BLG 16/INF.3 (Japan), providing the results of the hazard identification analysis (HAZID) conducted by it addressing liquefied natural gas-fuelled containership and ro-ro passenger ships, and participants include ship designers, a classification society and experts on risk analysis and LNG transportation, and providing proposing modifications to the draft IGF Code in annex 1 to document BLG 15/6 based on this analysis;
- .2 BLG 16/6/3 (SIGTTO), providing definitions of the hazards as well as the properties of the fuels being considered under the Code; and
- .3 BLG 16/6/6 (Germany), proving the results of collision calculations and relating them to the updated collision and grounding data originating from the European Commission funded research project on Goal Based Damage Stability (GOALDS). The information provided may be used to propose a safe location of LNG tanks on board ships aiming to use LNG as ship fuel.

6.12 Having considered the above documents, the Sub-Committee instructed the working group to further consider the reported research results and proposals related thereto, taking into account the comments made in plenary.

### Application of the Code

6.13 The Sub-Committee considered document BLG 16/6/4 (Germany), proposing to make the IGF Code mandatory by including a new provision in the SOLAS Convention, and decided to hold in abeyance any final decisions related to application issues until the Code is further developed. Notwithstanding the above decision, the Sub-Committee decided to forward the above document to the working group so it could decide how best to proceed on application issues and advise the Sub-Committee accordingly.

### Establishment of the working group

6.14 Recalling its decision at BLG 15 regarding the establishment of a working group at this session, the Sub-Committee established the Working Group on Development of Provisions for Gas-fuelled Ships and instructed it, taking into account part 2 of the report of the working group established at BLG 15 (BLG 16/6), the report of the correspondence group (BLG 16/6/1 and BLG 16/INF.2), documents BLG 16/6/2, BLG 16/6/3, BLG 16/6/4, BLG 16/6/5, BLG 16/6/6, BLG 16/6/7, BLG 16/6/8 and BLG 16/INF.3 and the comments and decisions made in plenary, to:

- .1 further develop the draft International Code of safety for ships using gases or other low-flashpoint fuels (IGF Code), based on the text contained in annex 1 to document BLG 16/6/1;
- .2 further consider the alternative texts for chapter 7 (Fuel storage), as contained in the annexes to document BLG 16/INF.2, with a view to preparing one chapter for inclusion in the draft Code;
- .3 further consider the issues related to training in relation to the IGF Code;

- .4 consider whether there is a need to re-establish the correspondence group and, if so, prepare the terms of reference for consideration by the Sub-Committee; and
- .5 submit a written report (part 1) to this session, for the tasks set out in subparagraphs .1 and .4 above and continue working through the week on the remaining tasks and submit part 2 of the report to BLG 17, as soon as possible after this session, so that it can be taken into account by the correspondence group, if established (see paragraph 6.28).

#### **REPORT OF THE WORKING GROUP**

6.15 Having considered the report of the working group (BLG 16/WP.5), the Sub-Committee approved it in general and took action as outlined hereunder.

#### **Structure of the Code**

6.16 The Sub-Committee noted the progress made by the group on the development of the draft IGF Code and, in particular, the actions taken regarding the structure of the draft Code, and further noted that an updated version of the draft IGF Code will be annexed to part 2 of the group's report. In this regard, the Sub-Committee noted the statement by the delegation of Sweden that they intended to submit a proposal on this matter to BLG 17.

#### **Cooperation with other Sub-Committees**

##### *FP Sub-Committee*

6.17 The Sub-Committee endorsed the request of the group that advice from the FP Sub-Committee is necessary to determine suitable categories for application of the necessary requirements on active and passive fire protection, if available, or, if not, to develop new suitable categories. For ease of reference, specific points and the relevant parts of the draft IGF Code are set out in the annex to document BLG 16/WP.5. The Secretariat was requested to forward the above information to FP 56 accordingly.

##### *STW Sub-Committee*

6.18 The Sub-Committee endorsed the group's views that it is premature to include any training requirements in chapter 18 of the draft IGF Code, even as interim provisions, before these could be considered by the STW Sub-Committee. In this regard, Sub-Committee, in considering whether specific training requirements for gas and chemical tankers already in place are suitable for officers and crew serving on ships fuelled by gas or low-flashpoint fuels, agreed to request STW 43 to consider the possible need for the development of new training requirements and to advise on any possible interim provisions that could be used while awaiting the outcome of the development of such new requirements.

##### *SLF Sub-Committee*

6.19 The Sub-Committee noted the view of the group on possible requirements for distance from shell plating to fuel tank in chapter 10 of the draft Code and agreed to request SLF 55 to evaluate the data contained in documents BLG 16/6/5 and BLG 16/6/6 and provide guidance on the application of this data and other relevant data in determining appropriate distance criteria.

### *DE Sub-Committee*

6.20 The Sub-Committee noted that there are no additional requirements in the draft text of the IGF Code for life-saving appliances over and above those in existing conventions, and agreed to invite the DE Sub-Committee to consider the need for additional or alternative requirements for life-saving appliances in ships covered by the IGF Code with a view to advising the Sub-Committee accordingly.

### *Experts in the area of fuels*

6.21 In light of the above decisions, the Sub-Committee invited Member Governments and international organizations to consider including experts on fuels covered by the IGF Code in their delegations attending meetings of the above Sub-Committees. The also requested the Secretariat to forward the above information, as appropriate, to the FP, DE, SLF and STW Sub-Committees accordingly.

### **Portable fuel storage tanks**

6.22 The Sub-Committee noted the discussion and views of the group on the use of portable tanks as fuel storage tanks (chapter 7 of the draft IGF Code) and that the correspondence group (see paragraph 6.28) would consider if any additional requirements in this regard are needed and advise BLG 17 accordingly.

### **Limitation on the use of ESD protected machinery space concept**

6.23 The Sub-Committee noted the deliberations of the group regarding the limitations on the use of the ESD protected machinery space concept to ships using gases lighter than air as fuel, and to ships with periodically unattended machinery spaces. With regard to any energy converter power limitations (piston engines, etc.), the Sub-Committee, having noted that the group had not reached consensus on the issue, decided to resolve the above issue at BLG 17 before the working group is established (see paragraph 13.4).

### **Gas detectors**

6.24 Having noted the deliberations of the group regarding a gas detection requirement for permanently installed gas detectors in ventilation inlets to accommodation and machinery spaces and other enclosed spaces, in order to provide additional safety measures for seafarers and passengers, the Sub-Committee agreed that the correspondence group should further consider the number and location of gas detectors in ventilation inlets (see paragraph 6.28).

6.25 The delegations of Finland, Germany, Norway and Sweden reserved their position on this issue as they find that such a requirement does not provide any additional safety for seafarers and passengers but, instead, could create a source of potential erroneous alarms that would lower the crew's respect for gas detection alarms. In addition, such a requirement does not feature in the IGC Code even for LNG tankers, where the risk of gas clouds would be much higher. In their view, the IGF Code will set limitations on the location of ventilation inlets in relation to hazardous areas and it should therefore not be necessary to consider the entire ship as a potential hazardous area. In noting the aforementioned reservation, the Sub-Committee reiterated its decision that, in order to find a solution, the correspondence group should further consider this issue and advise the Sub-Committee accordingly.

## Application of the Code

6.26 The Sub-Committee noted that, due to time constraints, the group decided to refer the issue on the future application of the IGF Code (BLG 16/6/4) to the correspondence group for further consideration (see paragraph 6.28).

## Fuel storage (chapter 7 of the IGF Code)

6.27 The Sub-Committee endorsed the group's decision to include in the draft IGF Code the proposed chapter 7 on Fuel storage as contained in annex 2 of document BLG 16/INF.2.

## ESTABLISHMENT OF A CORRESPONDENCE GROUP

6.28 Taking into account the progress made at the session, the Sub-Committee established the Correspondence Group on the IGF Code, under the coordination of Norway,<sup>1</sup> and instructed it, taking into account the outcome of BLG 16, to:

- .1 further develop the draft International Code of safety for ships using gases or other low-flashpoint fuels (IGF Code), based on the decisions contained in document BLG 16/WP.5 and in part 2 of the working group's report, to be submitted to BLG 17;
- .2 consider the issue of application of the IGF Code based on the proposal contained in document BLG 16/6/4; and
- .3 submit a report to BLG 17.

## 7 DEVELOPMENT OF THE REVISED IGC CODE

### General

7.1 The Sub-Committee recalled that MSC 83 agreed to include in the Sub-Committee's work programme a high-priority item on "Revision of the IGC Code", in cooperation with the FP, DE, SLF and STW Sub-Committees, and agreed that the scope of the output was to review all areas of the IGC Code with a view to revising and updating the Code and, where necessary, to identify other instruments which may be affected and require consequential amendments, taking into account the latest technologies, operational practices and the increasing size of the newest ships.

7.2 The Sub-Committee also recalled that BLG 15 agreed to establish a correspondence group to prepare the draft revised IGC Code using the text prepared by the Industry Steering Group (BLG 15/INF.2) as a basis, with a view to referring the relevant parts of the draft Code to the FP, DE, SLF and STW Sub-Committees after BLG 16.

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<sup>1</sup>

**Coordinator:**

Ms. T. Stemre  
Senior Adviser  
Legislation and International Relations  
Norwegian Maritime Directorate  
P.O. Box 2222  
N-5509 Haugesund  
Norway  
Tel: +47 52 74 51 51  
Fax: +47 52 74 50 01  
E-mail: [tbs@sjofartsdir.no](mailto:tbs@sjofartsdir.no)

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## Report of the correspondence group

7.3 The Sub-Committee considered the report of the correspondence group established at BLG 15 (BLG 16/7) and, having approved it in general, noted that the group, using the draft text set out in the annex to document BLG 15/INF.2 as a basis, had further developed the draft revised text of the Code. The Sub-Committee also noted that, during the last round of discussions, some new proposals within the terms of reference were put forward but, due to their late submission, the group had not discussed these proposals and they are set out in annex 4 for further consideration. The Sub-Committee also noted that annex 4 of the above document listed the draft provisions still in square brackets.

7.4 The Sub-Committee, in considering the actions requested by the correspondence group, as set out in paragraph 12 of document BLG 16/7, took the following decisions:

- .1 noted the editorial and technical amendments made by the correspondence group and instructed the drafting group to continue its work on editorial matters;
- .2 endorsed, in principle, the list of sections to be forwarded to other bodies and instructed the drafting group to finalize the list for consideration by the Sub-Committee;
- .3 endorsed the group's view regarding the alignment between the IGC Code and the IGF Code;
- .4 considered the outstanding issues set out in annex 4 and, in particular:
  - .1 agreed to retain the draft provisions set out in paragraphs 17.4.2, 17.4.3, 17.6, 17.8, 17.11.2 and 17.11.3 of the draft revised Code;
  - .2 agreed that the draft provisions in paragraph 4.18.1 on Materials forming ship structure for consideration should be further considered by the correspondence group, if established;
  - .3 referred the issue related to harbour setting of the pressure relief valves to the drafting group, taking into account that the matter was primarily an editorial issue, and instructed the group to include provisions for the above settings into both the text of the Code and the Certificate, as appropriate; and
  - .4 referred the remaining outstanding issues set out in annex 4 to the drafting group to address the non-substantive issues, keeping the substantive issues for consideration by the correspondence group to be established; and
- .5 decided not to proceed with the development of explanatory notes on the implementation of the draft revised IGC Code and invited Member Governments and international organizations wishing to pursue such work to submit a proposal for a new planned output to the Committees, as appropriate, in accordance with the Committees' Guidelines on the organization and method of work (MSC-MEPC.1/Circ.4).

**Replacing the words "Recognized Organization" and "Classification Society" by "Administration"**

7.5 The Sub-Committee considered document BLG 16/7/1 (Japan), proposing to replace the words "Recognized Organization" and "Classification Society" by "Administration", and, having agreed to the above proposal, instructed the drafting group to make the above modifications to the draft revised IGC Code, as appropriate. In regard to the remaining proposals contained in the annex to document BLG 16/7/1, the Sub-Committee invited interested delegations to consider the matter during the session and advise the Sub-Committee on how best to proceed (see paragraph 7.12).

**Modifications to paragraph 16.4.6 of the draft revised IGC Code**

7.6 In considering document BLG 16/7/2 (Norway), proposing to amend paragraph 16.4.6 of the draft revised IGC Code in order to better align it with the requirements for the "gas safe engine-room" concept, the Sub-Committee, having noted the aforementioned concept is already contained in the Interim Guidelines (resolution MSC.285(86)), agreed to the above proposal and instructed the drafting group to make the necessary modifications in the draft revised IGC Code.

**Keeping the text of paragraph 8.2.1 of the existing IGC Code**

7.7 The Sub-Committee, having considered document BLG 16/7/3 (Germany), proposing to keep the existing text of paragraph 8.2.1 of the IGC Code on Safety relief valves in the draft text of the revised Code, did not agree to the above proposal.

**Establishment of the drafting group**

7.8 Having considered the above matters, the Sub-Committee established the Drafting Group on Development of the Revised IGC Code and instructed it, taking into account the report of the correspondence group (BLG 16/7) and the comments and decisions made in plenary, to:

- .1 further improve the text of the draft revised IGC Code, as set out in document BLG 16/7, taking into account the editorial comments and documents BLG 16/7/1 (part) and BLG 16/7/2;
- .2 finalize the list of sections to be forwarded to other bodies based on annex 2 to document BLG 16/7; and
- .3 consider whether there is a need to re-establish the correspondence group and, if so, prepare the terms of reference for consideration by the Sub-Committee.

**Report of the drafting group**

7.9 Having considered the report of the drafting group (BLG 16/WP.7), the Sub-Committee approved it in general and took action as outlined hereunder.

***Editorial amendments***

7.10 The Sub-Committee endorsed the editorial amendments to the draft revised IGC Code prepared by the group, as set out in the annex to document BLG 16/WP.7. In this context, the Sub-Committee requested the Secretariat to prepare a consolidated text of the

draft revised IGC Code, as modified at the session (BLG 16/WP.7, annex), so that it could be circulated for consideration by other bodies and BLG 17, as soon as possible after the session. In this regard, the Sub-Committee authorized the Secretariat to effect any minor editorial corrections that may be identified when preparing the consolidated text.

### ***Parts of the draft IGC Code to be forwarded to other IMO bodies***

7.11 The Sub-Committee endorsed the list of sections of the draft IGC Code to be forwarded to other IMO bodies for their input, as set out in annex 2 to document BLG 16/7, and requested the Secretariat to take action accordingly.

### **Report of the informal group**

7.12 The Sub-Committee, having considered the verbal recommendations made by an informal group of interested delegations regarding the proposals contained in the annex to document BLG 16/7/1, agreed to the proposal changes and requested the Secretariat to include them in the consolidated text to be prepared after the meeting for consideration by other bodies and BLG 17. Consequently, the Sub-Committee decided not to establish a correspondence group at this session.

## **8 REVIEW OF RELEVANT NON-MANDATORY INSTRUMENTS AS A CONSEQUENCE OF THE AMENDED MARPOL ANNEX VI AND THE NO<sub>x</sub> TECHNICAL CODE**

### **Outcome of MEPC 62**

8.1 The Sub-Committee noted that MEPC 62 had adopted, by resolution MEPC.198(62), the 2011 Guidelines addressing additional aspects of the NO<sub>x</sub> Technical Code 2008 with regard to particular requirements related to marine diesel engines fitted with Selective Catalytic Reduction (SCR) systems, and, by resolution MEPC.199(62), the 2011 Guidelines for reception facilities under MARPOL Annex VI, both having been prepared by BLG 15.

8.2 The Sub-Committee also noted that MEPC 62 had approved the draft amendments to the NO<sub>x</sub> Technical Code 2008 to allow certification under scheme B, prepared by BLG 15 with a view to circulation for subsequent adoption at MEPC 63.

8.3 The Sub-Committee further noted that MEPC 62 had instructed the Sub-Committee to consider, for two sessions, the use of continuous NO<sub>x</sub> monitoring to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit given in regulation 13.5.1 of MARPOL Annex VI.

8.4 The Sub-Committee further noted that MEPC 62 had instructed the Sub-Committee to develop guidelines on the sampling procedure for fuel oil being used on board ships.

8.5 The Sub-Committee further noted that MEPC 62 had instructed the Sub-Committee to develop guidelines or a circular (whichever is deemed more appropriate) covering the information to be submitted as part of the required notification from an Administration to the Organization in respect of the approval of an Approved Method as required under regulation 13.7.1 of MARPOL Annex VI.

## Planning of work

8.6 The Sub-Committee had for its consideration five documents submitted under this item and one document under agenda item 11 (BLG 16/11/4) related to this output, and agreed to plan its work as follows:

- .1 consideration of the use of continuous NO<sub>x</sub> monitoring to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit (regulation 13.5.1 of MARPOL Annex VI), taking into account document BLG 16/8/1 (United States);
- .2 consideration of sampling of fuel oil used on board ships, taking into account documents BLG 16/8/2 (Norway) and BLG 16/8/3 (United Kingdom);
- .3 consideration of the use of sludge oil during the warm-up process of shipboard incinerators, taking into account document BLG 16/11/4 (Germany and IACS); and
- .4 consideration of the Report of the correspondence group (BLG 16/8 and BLG 16/INF.4 (United States)).

### **Use of continuous NO<sub>x</sub> monitoring to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit (regulation 13.5.1 of MARPOL Annex VI)**

8.7 The Sub-Committee recalled that MEPC 62, in considering document MEPC 62/4/13 (Ireland and the United States) proposing revisions to the SCR guidelines and amendments to the NO<sub>x</sub> Technical Code 2008, had noted concerns expressed by some delegations about the availability, practicality and feasibility of installing on ships NO<sub>x</sub> continuous monitoring technologies. Other delegations were of the view that, in order to encourage development of new technologies for continuous NO<sub>x</sub> monitoring systems, provisions for such monitoring should be developed.

8.8 The Sub-Committee also recalled that MEPC 62 had endorsed the view of the Working Group on Prevention of Air Pollution from Ships that, taking into account that the Tier III NO<sub>x</sub> emission limit will be effective in 2016, continuous NO<sub>x</sub> monitoring should be considered further.

8.9 The Sub-Committee considered continuous NO<sub>x</sub> monitoring as an additional method to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit, and document BLG 16/8/1 (United States) on the need for a method to determine whether a marine diesel engine fitted with NO<sub>x</sub> reducing devices, such as SCR systems, operates correctly and achieves the NO<sub>x</sub> limit to which it is certified.

8.10 Some delegations supported continuous NO<sub>x</sub> monitoring as an additional method to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit. Those delegations considered that there is a need for additional assurance measures to determine that a ship with a marine diesel engine fitted with an SCR is compliant with the Tier III NO<sub>x</sub> emission limit, and that such measures would be useful for the purpose of port and flag State inspections.

8.11 Some delegations expressed the view that additional performance monitoring was not required and to a degree could place doubt on the reliability of the shop tested and certified SCR systems. One delegation insisted that the parameter check method should be retained as an option to demonstrate compliance, and that continuous NO<sub>x</sub> monitoring should be an additional method only to demonstrate compliance. Other delegations were of the view that, if continuous NO<sub>x</sub> monitoring became mandatory, the existing EIAPP certification

schemes could be undermined to the point that it became meaningless, and, in this regard, the periodical check of SCR systems is sufficient to demonstrate compliance.

8.12 The majority did not support the proposal in document BLG 16/8/1 on mandatory continuous NO<sub>x</sub> monitoring to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit.

8.13 The delegation of the United States, recognizing that MEPC 62 instructed the Sub-Committee to consider this item for two sessions, expressed the view that it will continue consideration on this issue with other interested delegations, taking into account comments raised at this session, and submit a revised proposal to BLG 17.

### **Sampling of fuel oil used on board ships**

8.14 The Sub-Committee recalled that resolution MEPC.182(59), *2009 Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI*, is intended for the sampling of fuel oil being delivered to ships.

8.15 The Sub-Committee also recalled that MEPC 62, having noted that there was a need to establish separate procedures for sampling of fuel oil being used on board ships (MEPC 62/24, paragraph 4.10), endorsed Terms of Reference for BLG 16 to develop draft guidelines on the sampling procedure for fuel oil being used on board ships with 2012 as the target completion year.

8.16 The Sub-Committee had two documents, providing comments and suggestions for development of guidelines for sampling fuel oil being used on board ships, for its consideration:

- .1 BLG 16/8/2 (Norway), proposing that the guidelines for sampling fuel oil used on board ship be developed using relevant parts of International Standard ISO 3170:2004 "Petroleum liquids – Manual sampling", third edition, for sampling from fuel oil tanks and pipelines, to ensure that the sample from the tank is representative of the tank content; and
- .2 BLG 16/8/3 (United Kingdom), commenting on document BLG 16/8/2 and requesting that when developing guidelines for sampling fuel oil used on board ships, consideration be given to safe access to the fuel oil service tank sampling point, practicalities of existing ships where there is no sampling point on the service tanks and representativeness of fuel sample.

8.17 A number of delegations, in recognizing the fact that, during some port State control and flag State inspections, fuel oil is being sampled in order to enable verification of the fuel oil being used on board the ship, supported the development of guidelines for a sampling procedure to enable effective control and enforcement of fuel oil being used on board ships under the provision of regulations 14.4 and 14.6 of MARPOL Annex VI.

8.18 Other delegations, in noting that concerns were expressed at MEPC 62 and that the Committee had agreed that the matter should be reconsidered by the Sub-Committee, were of the view that, under regulation 14 of MARPOL Annex VI, sampling of fuel oil used on board ships is not identified as a means to determine compliance, and that there was potential for the ship to be unduly delayed for fuel oil sampling and analysis. Several delegations were of the view that if such sampling guidelines are needed, amendments to MARPOL Annex VI would be necessary.

8.19 The delegation of the Cook Islands, supported by some delegations, expressed the view that quality control of bunker fuel prior to delivery to ships could resolve the compliance problems related to fuel oils.

8.20 Some delegations expressed concerns on safety aspects of sampling from fuel tanks and high-pressure fuel lines. In this respect, the majority supported that the safety aspects for fuel-oil sampling proposed in document BLG 16/8/3 (United Kingdom) should be taken into account when developing guidelines for the sampling of fuel oil used on board ships.

8.21 The Chairman explained that the Sub-Committee had only a drafting group available to it to undertake the task given by MEPC 62, and therefore a base document was needed. A way forward could be to use resolution MEPC.182(59) *2009 Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI*, and to amend these to include guidance for the sampling of fuel oil used on board, taking into account, as appropriate, relevant information provided in ISO 3170:2004, and the following safety aspects addressed in document BLG 16/8/3.

8.22 The Bahamas expressed the view that the existing guidelines for the sampling fuel oil delivered to ships (MEPC.182(59)) could not be used as a base document for development of guidance for the sampling of fuel oil used on board ships as they required entirely different procedures, and that it was not clear how samples of the fuel oil used on board a ship would be handled and analysed.

8.23 The Sub-Committee agreed to report back to the Committee the above discussion, and not to develop either guidelines or guidance for the sampling of fuel oil used on board ships at this session.

#### **Use of sludge oil during the warm-up process of shipboard incinerators**

8.24 The Sub-Committee recalled that BLG 14, having considered document BLG 14/8 (IACS) proposing a possible Unified Interpretation under regulation 16 of MARPOL Annex VI related to the use of sludge oil in type-approved continuous-feed shipboard incinerators during their warm-up, could not reach a consensus and, in consequence, invited IACS to liaise with interested delegations and to submit a new proposal for consideration.

8.25 The Sub-Committee, having considered document BLG 16/11/4 (Germany and IACS) which proposes a unified interpretation on this issue, agreed that paragraph 5 of BLG 16/11/4 provided a basis for such a Unified Interpretation.

8.26 The Sub-Committee instructed the drafting group to review and prepare a Unified Interpretation to regulation 16.9 of MARPOL Annex VI, using as a basis paragraph 5 of document BLG 16/11/4, with a view to approval by MEPC 64.

#### **Report of the correspondence group**

8.27 The Sub-Committee recalled that BLG 15, having considered other items relevant to non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code, had established a correspondence group to further develop the draft guidelines and other necessary guidance under MARPOL Annex VI and the NTC 2008.

8.28 The Sub-Committee, in considering the report of the correspondence group (BLG 16/8 and BLG 16/INF.4), noted that the correspondence group had identified the following five separate issues to be further considered:

- .1 draft guidelines for replacement engines not required to meet the Tier III limit as required under regulation 13.2.2 of MARPOL Annex VI;
- .2 the need for a definition of "identical" marine diesel engine under regulation 13.1.1.2 of MARPOL Annex VI;
- .3 consideration as to whether guidelines for exhaust gas recirculation should be developed;
- .4 consideration as to whether guidelines for water as a primary control measure should be developed; and
- .5 agreement on the development of guidelines to certify gas-fuelled engines, where engines operating solely on gas fuels are used to comply with Tier III NO<sub>x</sub> emission limits.

***Draft guidelines for replacement engines not required to meet the Tier III limit as required under regulation 13.2.2 of MARPOL Annex VI***

8.29 The Sub-Committee noted that the correspondence group had identified a number of criteria (BLG 16/8, annex 1) that should be considered in the development of draft guidelines, and that there had been general agreement on some of the identified criteria that should be considered.

8.30 The Sub-Committee also noted that there had been a general agreement within the correspondence group that the guidelines should state that the shipowner documents the search for compliant Tier III engines and explains why the closest available engine, with respect to size or performance, is not appropriate for that ship, and that this documentation should be kept with the replacement engine's EIAPP Certificate and the technical file.

8.31 The Sub-Committee further noted that the correspondence group had agreed that the draft guidelines should contain a procedure for providing evidence that a Tier III engine cannot be installed, and that this should be defined in detail, as well as that this procedure should include the need to report specifically what prevents a Tier-III-compliant engine from being installed.

8.32 The Sub-Committee, having considered the proposed criteria for development of the draft guidelines, agreed that the first draft of the guidelines be prepared by a correspondence group, using the criteria set out in annex 1 of document BLG 16/8.

***Need for a definition of an "identical" marine diesel engine under regulation 13.1.1.2 of MARPOL Annex VI***

8.33 The Sub-Committee noted that regulation 13.1.1 of MARPOL Annex VI specifies that an engine that undergoes a major conversion on or after 1 January 2000 must meet the emission standards in place at the time of the major conversion, except if the engine is replaced by an identical engine.

8.34 The Sub-Committee considered whether the intent of regulation 13.1.1.2 of MARPOL Annex VI is a general exclusion or rather an exceptional clause used only in the most extreme cases. The Sub-Committee agreed that, as this is an exceptional clause, there is a need to define "identical engine".

8.35 The Sub-Committee agreed to invite IACS to develop a unified interpretation for the definition of "identical" marine diesel engine as referred to under regulation 13.1.1.2 of MARPOL Annex VI.

***Consideration as to whether guidance for Exhaust Gas Recirculation should be developed***

8.36 The Sub-Committee noted that there had been no consensus within the correspondence group on whether guidance should be developed for Exhaust Gas Recirculation (EGR).

8.37 Some delegations indicated that, since these were in-engine control measures, engines with EGR systems should be certified under the NO<sub>x</sub> Technical Code 2008.

8.38 The Sub-Committee agreed that there was no need for specific guidelines for engines with EGR systems at this stage.

***Consideration as to whether guidelines for water as a primary control measure should be developed***

8.39 The Sub-Committee noted that there had been no consensus within the correspondence group on whether guidance should be developed, for water as a primary control measure.

8.40 The Sub-Committee agreed that there was no need for specific guidelines for water as a primary control measure at this stage.

***Agreement on the development of guidelines to certify gas fuelled engines, where engines operate solely on gas fuels to comply with Tier III NO<sub>x</sub> emission limits***

8.41 The Sub-Committee noted that the use of gas fuels is increasing for a number of reasons, including significantly reducing air pollution and GHG emissions.

8.42 The Sub-Committee also noted that no technical requirements for demonstration of compliance for gas-fuelled engines were included in the revised MARPOL Annex VI or the NO<sub>x</sub> Technical Code 2008.

8.43 The Sub-Committee further noted that the correspondence group had agreed that ISO 8178-1:2006 and chapter 5 of the NO<sub>x</sub> Technical Code 2008 should be used as the basis for the development of the draft guidelines.

8.44 The Sub-Committee agreed that there is a need for draft guidelines for gas fuels, liquefied natural gas or other gases which may be used as ship fuel, as well as NO<sub>x</sub> Technical Code calculation factors and specific issues relating to the testing of engines so fuelled, and invited interested delegations to make submissions to the next session of the Sub-Committee.

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**Information to be submitted as part of the required notification from an Administration to the Organization in respect of the approval of an Approved Method, as required under regulation 13.7.1 of MARPOL Annex VI**

8.45 The Sub-Committee recalled that MEPC 62 had instructed it to develop guidelines, or a circular (whichever is deemed more appropriate), covering the information to be submitted as part of the required notification from an Administration to the Organization in respect of the approval of an Approved Method, as required under regulation 13.7.1 of MARPOL Annex VI.

8.46 The Sub-Committee noted that, in line with regulation 13.7.1 of MARPOL Annex VI, to date circulars MEPC.1/Circ.738/Add.1, MEPC.1/Circ.743, MEPC.1/Circ.764/Add.1, MEPC.1/Circ.765 and MEPC.1/Circ.770 are issued.

8.47 The Sub-Committee also noted that MEPC 62 considered document MEPC 62/7/8 (IACS) on the minimum requirements for IMO circulars related to notification of the certification of an Approved Method under regulation 13.7.1 of MARPOL Annex VI.

8.48 The Sub-Committee further noted there was a need to identify the information necessary to enable the engines to be identified that have been so modified from their original built condition, that the  $\Delta\text{NO}_x$  term in the cost effectiveness formula (regulation 13.7.5.2) does not apply, and that the guidelines should also provide a procedure by which these cases are considered and how the outcome of that consideration is recorded.

8.49 The observer from IACS expressed the view that the guidelines on notification from Administrations in respect of the approval of an Approved Method should be developed, taking into account the following criteria:

- .1 validity of approval of the approved method file;
- .2 determination of the applicability of the approved method; and
- .3 clarifications on inclusion or exclusion of upper and lower limits of applicable MCR range.

8.50 The Sub-Committee agreed that guidelines should be developed to outline the information to be submitted as part of the required notification from an Administration to the Organization in respect of the approval of an Approved Method as required under regulation 13.7.1 of MARPOL Annex VI, by the correspondence group using document MEPC 62/7/8 as a basis.

**Fuel oils from non-conventional or non-petroleum sources**

8.51 The Sub-Committee recalled that MEPC 58 had instructed it to consider, as a low-priority item, what guidance, if any, should be developed for fuel oils from non-conventional or non-petroleum sources such as: tar sands, shales, synthetic fuels or biodiesels from various source materials, as well as  $\text{NO}_x$  Technical Code calculation factors and specific issues relating to the testing of engines so fuelled, and the variations resulting from fuels derived from different sources and/or processing methods.

8.52 The Sub-Committee agreed that there was no need for specific guidelines for fuel oils from non-conventional or non-petroleum sources at this stage.

### **New priority list**

8.53 The Sub-Committee noted that a new priority list of necessary guidelines to support implementation and enforcement of MARPOL Annex VI and NO<sub>x</sub> Technical Code 2008 should be developed, and agreed to instruct the drafting group to develop it.

### **Establishment of the drafting group**

8.54 The Sub-Committee established the Drafting Group on Matters Related to MARPOL Annex VI and the NO<sub>x</sub> Technical Code and instructed it, taking into account the decisions taken and comments made in plenary, to:

- .1 use paragraph 5 of BLG 16/11/4 as a basis to draft a unified interpretation for the use of sludge oil during the warm-up process of shipboard incinerators;
- .2 prepare a new draft priority list to develop other draft guidelines and guidance documents under MARPOL Annex VI and NO<sub>x</sub> Technical Code 2008; and
- .3 prepare terms of reference for a correspondence group.

### **Report of the drafting group**

8.55 Having considered the report of the drafting group (BLG 16/WP.6), the Sub-Committee approved it in general and took action as indicated hereunder.

### ***High-level Action Plan***

8.56 The Sub-Committee, in considering the report of the drafting group, noted that the twenty-seventh session of the Assembly held in November 2011, had identified in the *High-level Action Plan and Priorities of the Organization for 2012-2013 biennium* (resolution A.1038(27)), a planned output number 2.0.1.11 on other relevant guidelines pertaining to equivalents set forth in regulation 4 of MARPOL Annex VI and not covered by other guidelines, and that this should be included in the new priority list and terms of reference of the correspondence group (see paragraph 8.59).

### **Draft Unified Interpretation for regulation 16.9 of MARPOL Annex VI**

8.57 The Sub-Committee agreed to the draft Unified Interpretation for the use of sludge oil during the warm-up process of continuous-feed type shipboard incinerators, as set out in annex 6, for consideration and approval by MEPC 64.

### **New priority list**

8.58 The Sub-Committee agreed to the new priority list of necessary guidelines to support implementation and enforcement of MARPOL Annex VI and the 2008 NO<sub>x</sub> Technical Code, as follows:

- .1 **Category A (High priority)**
  - .1 guidelines for replacement engines not required to meet the Tier III limit, as required under regulation 13.2.2;

- .2 guidelines to outline the information to be submitted as part of the required notification from an Administration to the Organization in respect of the approval of an Approved Method as required under regulation 13.7.1 of MARPOL Annex VI; and
- .3 other relevant guidelines pertaining to equivalents set forth in regulation 4 of MARPOL Annex VI and not covered by other guidelines;
- .2 **Category B (Medium priority)**
  - .1 guidelines for gas fuels, liquefied natural gas or other gases which may be used as ship fuel, as well as NO<sub>x</sub> Technical Code calculation factors and specific issues relating to the testing of engines so fuelled; and
- .3 **Category C (Low priority)**
  - .1 guidelines called for under paragraph 2.2.5.6 of the revised NO<sub>x</sub> Technical Code 2008 (NO<sub>x</sub>-reducing devices).

#### **Establishment of a correspondence group**

8.59 The Sub-Committee established a Correspondence Group on Consideration of the Impact on the Arctic of Emissions of Black carbon from International Shipping and Review of Relevant Non-mandatory Instruments as a Consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code, under the coordination of the United States<sup>2</sup>, and instructed it to (see also paragraph 15.19):

- .1 develop draft guidelines for replacement engines not required to meet the Tier III limit, as required under regulation 13.2.2 of MARPOL Annex VI, using the criteria set out in annex 1 of document BLG 16/8;
- .2 develop draft guidelines to outline the information to be submitted as part of the required notification from an Administration to the Organization in respect of the approval of an Approved Method as required under regulation 13.7.1 of MARPOL Annex VI, recognizing that information on Approved Methods has been issued by circulars from the Organization;
- .3 develop other relevant draft guidelines pertaining to equivalents set forth in regulation 4 of MARPOL Annex VI and not covered by other guidelines;
- .4 develop a definition for Black carbon emissions from international shipping;

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<sup>2</sup>

**Coordinator:**

Mr. Wayne Lundy  
 Senior Engineer  
 United States Coast Guard  
 Systems and Engineering Division  
 2100 Second Street SW  
 Washington, DC 20593  
 United States of America  
 Tel: +001 202 372 1379  
 E-mail: Wayne.M.Lundy@uscg.mil

- .5 consider measurement methods for Black carbon and identify the most appropriate method for measuring Black carbon emissions from international shipping;
- .6 identify and collate possible control measures to reduce the impact of Black carbon emissions from international shipping; and
- .7 submit a report to BLG 17.

## **9 DEVELOPMENT OF A CODE FOR THE TRANSPORT AND HANDLING OF LIMITED AMOUNTS OF HAZARDOUS AND NOXIOUS LIQUID SUBSTANCES IN BULK IN OFFSHORE SUPPORT VESSELS**

### **General**

9.1 The Sub-Committee recalled that BLG 15 had a general discussion on how to proceed with the development of a Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk in offshore support vessels (OSV Chemical Code) and noted the intention of several delegations to work intersessionally and submit their findings and recommendations to the Sub-Committee, with a view to facilitating the work on this matter.

9.2 The Sub-Committee considered document BLG 16/9 (Brazil, et al.), containing the outcome of the informal intersessional work by several Member Governments and an international organization on the development of the draft OSV Chemical Code, and noted that the co-sponsors had identified four main topics which need further discussion: damage stability, carriage capacity, mandatory concept and list of products, and that they had prepared an amalgamation document (BLG 16/INF.6), incorporating the draft OSV Chemical Code using the format suggested in document BLG 15/12 (Denmark) and all comments received.

### **Discussion**

9.3 In the ensuing discussions, there was considerable support for the need to establish a correspondence group to prepare the draft OSV Chemical Code for consideration by the Sub-Committee at the next session with a view to forwarding relevant parts of the draft Code to other sub-committees for advice and input.

9.4 The delegation of Brazil, supported by several delegations, in referring to the carriage capacity aspect of the draft Code, suggested a maximum quantity limitation be stipulated in the draft Code with the exclusion of exploration and production fluids, which should only be subject to stability limitations.

9.5 The Sub-Committee noted that SLF 54 (16 to 20 January 2012), having considered document SLF 54/7/1 (United States) proposing damage stability standard for offshore support vessels that carry limited amounts of hazardous and noxious liquid substances in bulk, had agreed to await a request from the BLG Sub-Committee seeking advice on damage stability criteria for such ships. Following the suggestion by the delegation of the United States, the Sub-Committee invited the SLF Sub-Committee to consider the matter further and advise it accordingly.

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## Establishment of the correspondence group

9.6 Having considered the above documents, the Sub-Committee established the Correspondence Group on the Development of the OSV Chemical Code, under the coordination of Denmark<sup>3</sup>, and instructed it, taking into account the comments made and decision taken at BLG 16, to:

- .1 prepare the draft Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk in offshore support vessels (OSV Chemical Code), on the basis of documents BLG 16/9 and BLG 16/INF.6;
- .2 consider the need for any amendments to related IMO instruments in order to ensure consistency with the proposed OSV Chemical Code is maintained; and
- .3 submit a written report to BLG 17.

## 10 CONSIDERATION OF AMENDMENTS TO SOLAS TO MANDATE ENCLOSED SPACE ENTRY AND RESCUE DRILLS

### General

10.1 The Sub-Committee recalled that MSC 87 agreed to include, in the BLG and DSC Sub-Committees' biennial agendas, an unplanned output on "Amendments to SOLAS to mandate enclosed space entry and rescue drills", with a target completion year of 2012, assigning the DSC Sub-Committee as the coordinating organ.

10.2 The Sub-Committee recalled also that BLG 15, after an extensive discussion on this matter, encouraged Member Governments and international organizations to submit comments and proposals to DSC 16, taking into account that the DSC Sub-Committee had decided to establish a working group at DSC 16 to consider this matter in depth.

### Outcome of DSC 16

10.3 The Sub-Committee considered the outcome of DSC 16 (BLG 16/10) and noted that the DSC Sub-Committee, having considered the report of the working group (DSC 16/WP.4) established on the matter:

- .1 agreed to the draft amendments to SOLAS regulation III/19 to mandate enclosed space entry and rescue drills, as set out in the annex to document BLG 16/10;

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<sup>3</sup>

#### Coordinator:

Ms. Clea Henriksen  
Centre for Maritime Regulation  
Danish Maritime Authority  
Vermundsgade 38 C,  
2100 København  
Denmark  
Tel.: +45 39 17 45 31  
E-mail: cge@dma.dk

- .2 endorsed the group's recommendation on the mandatory carriage and continuous use of an oxygen metre or similar devices;
- .3 agreed to refer the draft amendments to BLG 16 and STW 43 for consideration and comment; and
- .4 agreed to finalize the above draft amendments at DSC 17, taking into account the comments of BLG 16 and STW 43.

### **Comments on the draft amendments prepared by DSC 16**

10.4 The Sub-Committee, having considered the draft amendments to regulation III/19 prepared by DSC 16, noted the following views expressed on the matter:

- .1 notwithstanding the existing SOLAS requirements for the carriage of oxygen metres for bulk cargo purposes, a number of delegations felt that such devices should be required for all ships to increase the safety of entry into other types of enclosed spaces;
- .2 the proposal to require the carriage of oxygen metres needs further detailed consideration to determine what type of device should be used (e.g. personal metres handheld device, etc.), what their specification should be and whether other types of atmospheric test devices may be needed (e.g. Drager-tubes, etc.);
- .3 that paragraph 3.2*bis* of the above draft amendments should be clarified to specify that the enclosed space entry and rescue drills should be held on board the ship; and
- .4 that more robust training requirements should be included in the STCW Convention,

and agreed to the aforementioned draft SOLAS amendments and invited DSC 17 to consider the above views, as appropriate, when finalizing the work on this issue. In this connection, the Sub-Committee also invited STW 43 to note the views expressed regarding the need for more robust training requirements to be included in the STCW Convention.

10.5 The observer from ICS expressed the view, which was supported by other delegations, that the draft amendments to SOLAS regulation III/19 did not fully reflect the intention of the DSC Sub-Committee when it drafted the amendments. In particular, with regard to the draft amendment contained in the annex to document BLG 16/10, he proposed paragraph 3.2*bis* be modified, in order to avoid onerous training requirements during crew members' leave, as follows:

"Crew members with enclosed space entry or rescue responsibilities shall participate in an enclosed space entry and rescue drill, to be held aboard the ship, at least once every two months."

10.6 In this context, the Sub-Committee invited ICS to submit their proposal in writing to DSC 17, taking into account that the DSC Sub-Committee has been designated as coordinator for the work on this output.

10.7 With regard to the mandatory carriage and continuous use of an oxygen meter or other such devices, the Sub-Committee noted that there was general support for the proposal, but further input was necessary regarding the type of device to be used, including appropriate specifications. Consequently, the Sub-Committee invited Member Governments and international organizations to submit comments and proposals to DSC 17, as appropriate.

### **Completion of the work on this output**

10.8 The Sub-Committee invited the Committee to note that the work on this output had been completed.

## **11 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS**

### **General**

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

11.2 The Sub-Committee, having recalled that document BLG 16/11/4 was considered under agenda item 8 (see paragraph 8), noted that it had the following documents for its consideration under this output:

- .1 BLG 16/11 (IACS), on linings approved for use with acids and safe carriage of acid cargoes;
- .2 BLG 16/11/5 (Australia), on provision for a monitoring system to detect leakage of acids and their pH level in adjacent spaces used for carriage of acids; and
- .3 BLG 16/11/1 (IACS), BLG 16/11/2 (IACS, OCMIF, INTERTANKO and IPTA) and BLG 16/11/3 (OCMIF), providing comments and proposals on secondary means of venting cargo tanks.

### **Linings approved for use with acids and safe carriage of acid cargoes**

11.3 The Sub-Committee considered document BLG 16/11, containing IACS Unified Interpretation CC6 relating to paragraph 15.11.2 of the IBC Code on linings approved for use with acids, and noted that IACS societies would apply the above unified interpretation on ships contracted for construction on or after 1 January 2012, unless otherwise instructed by Administrations on whose behalf they are authorized to act as Recognized Organizations. In considering the aforementioned interpretation, the Sub-Committee noted that there was not enough support to prepare an IMO interpretation.

11.4 The observer from IACS, in referring to the above decision stated that in the absence of any criteria other than as proposed in IACS UI CC 6, its Members may have to seek confirmation from flag States that they will accept linings required to comply with paragraph 15.11.2 of the IBC Code; and urged delegations to submit to the Organization details of such acceptance criteria.

11.5 The Sub-Committee also considered the information contained in document BLG 16/11/5 and noted Australia's view that more specific requirements for pH monitoring in adjacent spaces used for the carriage of acids could improve safety and that they were interested in learning if any Member Governments had requirements related to pH monitoring

of ballast tanks adjacent to acid cargo tanks as part of the suitable apparatus referred to in paragraph 15.11.7 of the IBC Code, taking into account that they may prepare a document on this matter for consideration at a future session.

### **Secondary means of venting cargo tanks**

11.6 The Sub-Committee, having considered documents BLG 16/11/1, BLG 16/11/2 and BLG 16/11/3 on secondary means of venting cargo tanks as required by SOLAS regulations II-2/4.5.3.2.2 and II-2/11.6.3.2, noted that FP 55 endorsed the views put forward by OCIMF regarding IACS UI SC 140 revision 3 and had invited IACS, in consultation with OCIMF and other interested delegations, to review the interpretation, taking into account the comments contained in document FP 55/8/11, with a view to providing BLG 17 with the outcome of such deliberations.

11.7 In discussing how best to proceed on this matter, the Sub-Committee, having considered the draft proposal for a new unplanned output to amend the SOLAS provisions related to the secondary means of venting cargo tanks (BLG 16/11/2 and BLG 16/WP.8), agreed to the proposed Justification for a new unplanned output in the biennial agendas of the BLG and FP Sub-Committees to amend the provisions in SOLAS chapter II-2 relating to the secondary means of venting cargo tanks, as set out in annex 7, for approval by MSC 90.

### **CASUALTY ANALYSIS**

12.1 The Sub-Committee noted that no documents had been submitted for consideration at this session and that this is a continuous output that remains on the agenda pending the outcome, if any, of the FSI Sub-Committee for consideration.

12.2 In considering general comments, the Sub-Committee, having noted the verbal information provided by OCIMF that over the past six years approximately 85 fire and explosion incidents had occurred on vessels carrying bulk liquids and gases, urged Member States and international organizations to submit such important information to the FSI Sub-Committee so that the Organization could take any necessary appropriate actions, bearing in mind the seriousness of such incidents and the lessons learned.

12.3 In this context, the Sub-Committee noted the views expressed by the delegation of the Bahamas that the FSI Working Group on Casualty Analysis should be producing trends such as the one reported by the observer from OCIMF above so that appropriate action could be taken, where necessary.

12.4 Subsequently, the Sub-Committee invited FSI 20 to note the above views and take action as deemed appropriate.

## **13 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR BLG 17**

### **General**

13.1 The Sub-Committee recalled that the Assembly, at its twenty-seventh session, approved the *High-level Action Plan of the Organization and Priorities for the 2012-2013 Biennium* (resolution A.1038(27)).

13.2 The Sub-Committee also recalled that MSC 89 and MEPC 62 approved the revised *Guidelines on the organization and method of work of the MSC and the MEPC and their revised Guidelines*.

### **Biennial agenda and provisional agenda for BLG 17**

13.3 Taking into account the progress made during this session and the decisions of MSC 89 and MEPC 62, the Sub-Committee prepared its draft revised biennial agenda for the 2012–2013 biennium and the provisional agenda for BLG 17 (BLG 16/WP.2), based on the biennial agenda approved by MSC 89 and MEPC 62, and further modified by resolution A.1038(27) (BLG 16/2/2, annex), as set out in annexes 8 and 9, respectively, for consideration by MEPC 63 and MSC 90.

### **Arrangements for the next session**

13.4 The Sub-Committee agreed to establish at its next session working/drafting groups on any of the following subjects:

- .1 evaluation of safety and pollution hazards of chemicals and preparation of consequential amendments;
- .2 additional guidelines for implementation of the BWM Convention and development of international measures for minimizing the transfer of invasive aquatic species through biofouling of ships;
- .3 development of international code of safety for ships using gases or other low-flashpoint fuels;
- .4 development of the revised IGC Code;
- .5 consideration of the impact on the Arctic of emissions of Black Carbon from international shipping and review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code, including sub-items;
- .6 development of a Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels; and
- .7 development of amendments to the provisions of SOLAS chapter II-2 relating to the secondary means of venting cargo tanks, if approved by MSC 90 (see paragraph 11.7),

whereby the Chairman, taking into account the submissions received on the respective subjects, would advise the Sub-Committee well in time before BLG 17 on the final selection of such groups.

13.5 The Sub-Committee established correspondence groups on the following subjects, due to report to BLG 17:

- .1 development of international code of safety for ships using gases or other low-flashpoint fuels;

- .2 consideration of impact on the Arctic of emissions of Black Carbon from international shipping and review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code; and
- .3 development of a code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk in offshore support vessels.

### **Status of planned outputs**

13.6 The Sub-Committee prepared the report on the status of planned outputs of the High-level Action Plan of the Organization and priorities for the 2012-2013 biennium relevant to the Sub-Committee, set out in annex 10, and invited the Committees to note the status.

### **Intersessional meeting**

13.7 The Sub-Committee, having recalled its respective decision under agenda item 3 (see paragraph 3.30.14), invited MSC 90 and MEPC 64 to approve the holding of an intersessional meeting of the ESPH Working Group in 2013.

### **Date of the next session**

13.8 The Sub-Committee noted that the seventeenth session of the Sub-Committee has been tentatively scheduled to take place from 4 to 8 February 2013.

## **14 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2013**

14.1 The Sub-Committee, in accordance with the Rules of Procedure of the Maritime Safety Committee and the Marine Environment Protection Committee, unanimously re-elected Mr. S. Oftedal (Norway) as Chairman, and Mr. R. Zhang (China) as Vice-Chairman, both for 2013.

## **15 ANY OTHER BUSINESS**

### **BLACK CARBON**

#### **Background**

15.1 The Sub-Committee recalled that, following an exchange of views at its fifteenth session, it had agreed that it was necessary to request clearer instructions from MEPC on how the matter of black carbon should be addressed and invited Member Governments and international organizations to submit concrete proposals to MEPC, to enable further consideration of the matter, including development of a definition of black carbon.

15.2 The Sub-Committee also recalled that MEPC 62 had noted that several documents had been submitted for its consideration on emissions of black carbon from international shipping and, specifically, proposals for the development of a work plan to address consideration of the impact on the Arctic of emissions of black carbon from international shipping.

15.3 The Sub-Committee further recalled that MEPC 62 had agreed to a work plan for this Sub-Committee, for consideration of the impact on the Arctic of emissions of black carbon from international shipping (BLG 16/2/1, paragraph 11), as follows:

- 
- .1 develop a definition for black carbon emissions from international shipping;
  - .2 consider measurement methods for Black carbon and identify the most appropriate method for measuring Black carbon emissions from international shipping;
  - .3 investigate appropriate control measures to reduce the impact of Black carbon emissions from international shipping; and
  - .4 submit a final report to MEPC 65, where the Committee should agree on the appropriate action(s).

15.4 The Sub-Committee noted that MEPC 62 had noted the additional information provided in documents MEPC 62/4/3 (UNECE), MEPC 62/4/16 (CSC et al.), MEPC 62/4/18 (Republic of Korea), and MEPC 62/INF.32 and MEPC 62/INF.33 (Clean Shipping Coalition) and had instructed the Sub-Committee to consider them further, as necessary, under the terms of the agreed work plan.

### Discussion

15.5 The Sub-Committee had for its consideration the following documents submitted under this agenda item:

- .1 BLG 16/15/1 (Norway), proposing a definition of black carbon emissions from shipping to be used by IMO which considers black carbon to be a component of particulate matter that could, therefore, be reduced through the reduction of particulate matter emissions from ships;
- .2 BLG 16/15/2 and BLG 16/INF.5 (United States), providing a brief synopsis of ongoing research on the effects of fuel switching and speed reductions on particulate matter emissions, including black carbon. The research study aimed to assess how emissions from ships change as fuel quality improves, based on California's fuel quality regulation;
- .3 BLG 16/15/3 (IPIECA and OCIMF), listing a number of key questions that should be addressed by the Sub-Committee in its consideration of black carbon from international shipping;
- .4 BLG 16/15/4 (IMarEST), suggesting a definition of black carbon and identifying and describing potential techniques for measuring black carbon emissions from international shipping; and
- .5 BLG 16/15/5 (EUROMOT), presenting the views of engine manufacturers on the evaluation of black carbon emissions from shipping and potential approaches for reduction of black carbon emissions under steady state and transient operation conditions.

15.6 Several delegations expressed the view that it is important to have more reliable information to understand the impact on the Arctic of emissions of Black carbon from international shipping.

15.7 The Sub-Committee agreed to recommend that MEPC establish a separate agenda item on consideration of the impact on the Arctic of emissions of black carbon from international shipping at the next session of the Sub-Committee, to clearly identify the subject

and to enable Member Governments and international organizations to appropriately prepare input to the Sub-Committee.

15.8 The Sub-Committee, in noting that other international organizations were undertaking investigations on black carbon emissions and its impact on the environment, agreed to take into account the outcomes of such activities of other bodies for its consideration of the impact on the Arctic of emissions of black carbon from international shipping.

### **Definition of black carbon**

15.9 Having considered definitions of black carbon as proposed in documents BLG 16/15/1 (Norway) and BLG 16/15/4 (IMarEST), several delegations suggested alternative definitions. The alternative definitions suggested at this session, as well as those provided in documents BLG 16/15/1 and BLG 16/15/4, are as follows:

- .1 *Black carbon* is a component of particulate matter emissions in the engine exhaust, proposed by Norway (BLG 16/15/1);
- .2 *Black carbon* is strongly light-absorbing carbonaceous material emitted as solid particulate matter created through incomplete combustion of carbon-based fuels. Black carbon contains more than 80 per cent carbon by mass, a high fraction of which is sp-bonded carbon, and when emitted forms aggregates of primary spherules between 20 and 50 nm in aerodynamic diameter. BC absorbs solar radiation across all visible wavelengths and freshly emitted BC has a mass absorption efficiency of 5m<sup>2</sup>/g at the mid-visible wavelength of 550 nm. The strength of this light absorption varies with the composition, shape, size distribution, and mixing state of the particle, proposed by IMarEST (BLG 16/15/4);
- .3 *Black carbon* is a strongly light absorbing coloured carbonaceous material emitted as solid particulate matter created through incomplete combustion of fossil fuel, biofuel and biomass, suggested orally by Brazil; and
- .4 *Black carbon* is a solid form of mostly pure carbon that absorbs solar radiation (light) at all wavelengths, and is primarily a product of incomplete combustion, suggested orally by the United States.

15.10 The delegation of Finland expressed the view that, the definition of Black carbon should be based on the light-absorption capability of particles, rather than based on chemical analysis of the components of particles. Such definition should contain all elemental carbon and parts of organic carbon, because parts of organic carbon are also able to absorb light. The term "Light-absorbing carbon (LAC)" had been used in literature to cover all the light absorbing carbonaceous components contributing global warming.

15.11 The delegation of Singapore expressed the view that to enable effective control of emissions, the definition of black carbon should reflect how emissions from international shipping are to be measured, whereas the delegation of the United States expressed the view that any definition should not be linked to a specific measurement method, as this could limit future development of improved measurement methods.

15.12 The delegation of Canada expressed the view that black carbon is not only a marine issue nor only a transportation issue, and that the definition of black carbon should not be specific to the marine sector. It should align with pan-sectoral definitions in order to allow for

a comparison of emission levels, mitigation efforts, and results. The delegation of Canada was of the view that it is important to understand the current and projected impact of black carbon emissions from Arctic shipping, and to set this in context with impacts from shipping activities outside the Arctic and impacts from other sectors.

15.13 The Sub-Committee agreed to keep in abeyance the definitions, noting that they could be considered further by a correspondence group established at this session.

#### **Establishment of a correspondence group**

15.14 The Sub-Committee agreed that further work is needed to address the work plan for consideration of the impact on the Arctic of emissions of Black carbon from international shipping and that this should be undertaken intersessionally by a correspondence group.

15.15 Several delegations underlined that, in order to develop the necessary understanding to investigate appropriate control measures to reduce the impact on the Arctic of emissions of black carbon from international shipping, the questions put forward by IPIECA and OCIMF, set out in annex to document BLG 16/15/3, should be considered by the correspondence group, where relevant to the terms of reference.

15.16 Some delegations expressed the view that collation of possible control measures to reduce the impact on the Arctic of emissions of black carbon from international shipping is premature and should not be included in the terms of reference. Other delegations were of the view that such work by a correspondence group would be useful for further consideration of possible control measures by the Sub-Committee, and is necessary for its report to MEPC 65, and should, therefore, be included in the terms of reference for the correspondence group.

15.17 The delegation of Japan expressed the view that, as work towards a regulatory control framework had been deleted from the proposed work plan considered by MEPC 62, the collation of possible control measures would not include a regulatory control framework but will include abatement technologies.

15.18 The delegation of the Cook Islands expressed the view that the work plan should address the impact on the Arctic of black carbon emissions from "shipping in the Arctic" and not "international shipping", as currently stated in the Sub-Committee's work plan.

15.19 To progress the consideration of the work plan, the Sub-Committee established the Correspondence Group on Consideration of the Impact on the Arctic of Emissions of Black carbon from International Shipping and Review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code (see also paragraph 8.59).

#### **Accident of passenger ship *Rabaul Queen***

15.20 The delegation of Australia informed the Sub-Committee of the accident of passenger ship **Rabaul Queen**, which sank off the coast of Papua New Guinea on 2 February 2012, and of the search and rescue operation organized by Papua New Guinea Maritime Rescue Coordination Centre and the Australian Maritime Safety Authority. The full text of their statement is set out in annex 14.

## Expressions of appreciation

15.21 The Sub-Committee expressed appreciation to the following delegates and members of the Secretariat, who had recently relinquished their duties, retired or were transferred to other duties or were about to, 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:

- Captain Valentin Ruz Rodriguez (Argentina) (on return home);
- Commander Roberto Annichini (Argentina) (on return home);
- Ms. Petra Bethge (Germany) (on return home);
- Captain Hadi Supriyono (Indonesia) (on return home);
- Admiral Giancarlo Olimbo (Italy) (on transfer);
- Mr. Otto Nyquist (Norway) (on retirement);
- Captain Manuel Nogueira Romero (Spain) (transfer to new duties);
- Mr. Moin Ahmed (Secretariat) (transfer to new duties); and
- Mr. Irfan Rahim (Secretariat) (on secondment to UNESCAP).

## 16 ACTION REQUESTED OF THE COMMITTEES

16.1 The Maritime Safety Committee, at its ninetieth session, is invited to:

- .1 endorse, subject to MEPC 64's concurrent decision, the decisions taken by the Sub-Committee regarding the outcome of ESPH 17 (paragraph 3.2);
- .2 consider the proposed draft amendment for SOLAS regulation VI/5.3, which prohibits any production process on board a ship during the sea voyage, together with draft SOLAS regulation VI/5.2 approved at MSC 89 for adoption at MSC 90, with a view to adoption of both draft regulations as a single package (paragraph 3.30.4 and annex 2);
- .3 approve, subject to MEPC 63's concurrent decision, the draft amendments to the IBC Code with a view to subsequent adoption (paragraph 3.30.9 and annex 4);
- .4 endorsed the Sub-Committee's view that the prohibition of the blending of cargoes, as set out in MSC-MEPC.2/Circ.8, does not apply where cargo is recirculated within its cargo tank or through an external heat exchanger during the voyage for the purpose of maintaining cargo homogeneity or temperature control, including when two or more different products have previously been loaded into the same cargo tank within port limits and agree to take this view into account when considering the adoption of new draft SOLAS regulation VI/5.2 (paragraphs 3.30.4 and 3.30.12 and annex 2);
- .5 note the progress made on the development of the IGF Code and that inputs from the FP, DE, SLF and STW Sub-Committees have been invited on matters falling within their respective purviews (paragraphs 6.17 to 6.21);
- .6 note the progress made on the revision of the IGC Code and that relevant sections have been forwarded to other Sub-Committees for comment on matters that fall under their respective purviews (paragraph 7.11);

- 
- .7 note that the Sub-Committee finalized its consideration of matters related to the development of amendments to SOLAS to mandate enclosed space entry and rescue drills and forwarded its views to DSC 17 (paragraphs 10.6 and 10.7);
  - .8 consider the proposed justification for an unplanned output to amend the SOLAS chapter II-2 provisions related to the secondary means of venting cargo tanks and take action as appropriate (paragraph 11.7 and annex 7);
  - .9 approve, subject to MEPC 63's concurrent decision, the revised biennial agenda of the Sub-Committee and the outputs to be placed on the Committee's post-biennial agenda which are under the purview of the Sub-Committee (paragraph 13.3 and annex 8);
  - .10 approve, subject to MEPC 63's concurrent decision, the draft provisional agenda for BLG 17 (paragraph 13.3 and annex 9);
  - .11 note the report on the status of the Sub-Committee's planned outputs in the High-level Action Plan for the current biennium (paragraph 13.6 and annex 10);
  - .12 approve, subject to MEPC 64's concurrent decision, the holding of an intersessional meeting of the ESPH Working Group in 2013 (paragraph 13.7); and
  - .13 approve the report in general.
- 16.2 The Marine Environment Protection Committee, at its sixty-third session, is invited to:
- .1 endorse the Sub-Committee's view on the discharge of cleaning agents or additives contained in cargo hold, deck and external surface wash water, as referred in regulations 4.2 and 6.2 of the revised MARPOL Annex V (paragraph 3.30.5);
  - .2 approve, subject to MSC 90's concurrent decision, the draft amendments to the IBC Code with a view to subsequent adoption (paragraph 3.30.9 and annex 4);
  - .3 note the progress made on the development of a draft BWM circular on ballast water sampling and analysis protocols (paragraphs 4.12 to 4.15);
  - .4 approve, subject to MSC 90's concurrent decision, the revised biennial agenda of the Sub-Committee and the outputs to be placed on the Committee's post-biennial agenda which are under the purview of the Sub-Committee (paragraph 13.3 and annex 8);
  - .5 approve, subject to MSC 90's concurrent decision, the draft provisional agenda for BLG 17 (paragraph 13.3 and annex 9); and
  - .6 note the report on the status of the Sub-Committee's planned outputs in the High-level Action Plan for the current biennium (paragraph 13.6 and annex 10).

- 16.3 The Marine Environment Protection Committee, at its sixty-fourth session, is invited to:
- .1 endorse, subject to MSC 90's concurrent decision, the decisions taken by the Sub-Committee regarding the outcome of ESPH 17 (paragraph 3.2);
  - .2 endorse the evaluation of the Trade-named mixtures presenting safety hazards, for inclusion in List 3 of the MEPC.2/Circular (paragraph 3.30.1);
  - .3 endorse the cargo tank cleaning additives evaluated and found to meet the requirements of regulation 13.5.2 of MARPOL Annex II, for inclusion in the next edition of the MEPC.2/Circular (paragraph 3.30.2 and annex 1);
  - .4 approve the proposed amendments to 2011 Guidelines for the carriage of blends of petroleum oil and biofuels (MEPC.1/Circ.761) and instruct the Secretariat to issue MEPC.1/Circ.761/Rev.1 accordingly (paragraph 3.30.7 and annex 3);
  - .5 agree to forward document BLG 16/4 and the report of the Ballast Water and Biofouling Working Group (BLG 16/WP.4) to the FSI Sub-Committee for consideration in the context of developing Guidelines for port State control under the 2004 BWM Convention (paragraph 4.16);
  - .6 approve the draft MEPC circular on the Guidance for minimizing the transfer of invasive aquatic species as biofouling (hull fouling) for recreational craft (paragraph 5.5 and annex 5);
  - .7 note the Sub-Committee's consideration on matters concerning the use of continuous NO<sub>x</sub> monitoring to demonstrate compliance with the Tier III NO<sub>x</sub> emission limit; and the sampling of fuel oil used on board ships (paragraphs 8.7 to 8.13 and 8.14 to 8.23);
  - .8 approve the draft Unified Interpretation to regulation 16.9 of MARPOL Annex VI concerning the use of sludge oil during the warm-up process of continuous-feed type shipboard incinerators (paragraph 8.57 and annex 6);
  - .9 note that the Sub-Committee prepared a new priority list of necessary guidelines to support implementation and enforcement of MARPOL Annex VI and the NO<sub>x</sub> Technical Code 2008 (paragraph 8.58);
  - .10 note that the Sub-Committee established a correspondence group to progress the development of the remaining guidelines and guidance documents as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code 2008 and to further consider the impact on the arctic of emissions of Black carbon from international shipping (paragraphs 8.59 and 15.19);
  - .11 approve, subject to MSC 90's concurrent decision, the holding of an intersessional meeting of the ESPH Working Group in 2013 (paragraph 13.7); and
  - .12 approve the report in general.

\*\*\*

**ANNEX 1**

**CARGO TANK CLEANING ADDITIVES EVALUATED AND FOUND TO MEET THE REQUIREMENTS  
OF REGULATION 13.5.2 OF MARPOL ANNEX II<sup>1</sup>**

<b>Name of cleaning additive</b>	<b>Name of manufacturer</b>	<b>Reporting Country</b>
ECOSOLUT 24 Marine	OTI Greentech AG	CHE
ECOSOLUT 14 Marine	OTI Greentech AG	CHE
ECOSOLUT 18 Marine	OTI Greentech AG	CHE
ENVIROCARE 340	Drew Marine	USA
Hexaclean 3126 Alkaline Cleaner	A.I.M. Chemical Industries Pte Ltd	SGP
Hexaclean 3221 MP Detergent	A.I.M. Chemical Industries Pte Ltd	SGP
Hexaclean 3235 Water-Based Rigclean	A.I.M. Chemical Industries Pte Ltd	SGP
Hexaclean 3414 Heavy Duty Degreaser	A.I.M. Chemical Industries Pte Ltd	SGP
TC-SOL	CEMKIMSAN KIMYA SAN. TIC.LTD. STI	TUR
TC-ALK	CEMKIMSAN KIMYA SAN. TIC.LTD. STI	TUR
TC-WAT	CEMKIMSAN KIMYA SAN. TIC.LTD. STI	TUR
TRIOALK-212/EXTRA	TIRIO KIMYA SAN. Ve TIC. LTD. STI	TUR
TRIOALK-212	TIRIO KIMYA SAN. Ve TIC. LTD. STI	TUR
TRIOBREAK-196	TIRIO KIMYA SAN. Ve TIC. LTD. STI	TUR
TRIOTANK	TIRIO KIMYA SAN. Ve TIC. LTD. STI	TUR
TRIOTANK/R	TIRIO KIMYA SAN. Ve TIC. LTD. STI	TUR
MARISOL HD	Marisol Chemical	SWE
GreenCare CR	Marine Care	NLD
GreenCare Rust Remover	Marine Care	NLD
Teepol	Star Marine	NLD
Liquid soap	Star Marine	NLD
GP Enviro	VECOM	NLD
Veclean Eco Acid	VECOM	NLD
Uniclean HD	VECOM	NLD

<sup>1</sup> All products evaluated in accordance with MEPC.1/Circ.590.

<b>Name of cleaning additive</b>	<b>Name of manufacturer</b>	<b>Reporting Country</b>
Oil Spill Dispersant Type 1	VECOM	NLD
Bio Degreaser 165	VECOM	NLD
Veclean Eco Alkaline	VECOM	NLD
Veclean Blue	VECOM	NLD
Degreaser 156	VECOM	NLD

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**ANNEX 2**  
**DRAFT AMENDMENTS TO SOLAS CHAPTER VI**  
**CARRIAGE OF CARGOES**

Regulation 5-3

1 The following new regulation 5-3 is added after regulation 5-1:

**"Regulation 5-3**

*Prohibition of the production process during the sea voyage*

1 Any production process on board a ship during the sea voyage is prohibited. Production processes refer to any deliberate operation whereby a chemical reaction between a ship's cargo and any other substance or cargo takes place."

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### ANNEX 3

#### **DRAFT AMENDMENTS TO THE 2011 GUIDELINES FOR THE CARRIAGE OF BLENDS OF PETROLEUM OIL AND BIOFUELS (MEPC.1/CIRC.761)**

- 1 Paragraph 4.1.4 is replaced by the following:  
  
When considering the deck fire-fighting system requirements of SOLAS chapter II-2, regulations 1.6.1 and 1.6.2, when carrying biofuel blends containing more than 5% of ethyl alcohol then alcohol resistant foams should be used.
  
- 2 Paragraph 4.2.1, in the table, for the entry Biofuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume), in column I, "AC" is replaced by "A".

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**ANNEX 4**

**DRAFT 2012 AMENDMENTS TO THE INTERNATIONAL CODE FOR THE  
CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING  
DANGEROUS CHEMICALS IN BULK (IBC CODE)**

The text of the draft 2012 amendments to the IBC Code is contained in document BLG 16/16/Add.1.

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## **ANNEX 5**

### **DRAFT MEPC CIRCULAR**

#### **GUIDANCE FOR MINIMIZING THE TRANSFER OF INVASIVE AQUATIC SPECIES AS BIOFOULING (HULL FOULING) FOR RECREATIONAL CRAFT**

##### **1 WHAT IS BIOFOULING?**

Biofouling is the accumulation of aquatic organisms such as microorganisms, plants and animals, on surfaces and structures immersed in or exposed to the aquatic environment. Biofouling may also be known as hull fouling.

##### **2 WHY IS THE TRANSFER OF BIOFOULING ORGANISMS A PROBLEM?**

Aquatic organisms may be transferred to new locations as biofouling and can be harmful and invasive in locations where they do not naturally occur.

The transfer of invasive aquatic organisms can threaten fresh water, brackish and marine environments, human, animal and plant life, and economic and cultural activities.

Even when there is no visible biofouling, it is important to undertake the minimizing measures outlined in this guidance as light fouling (e.g. the slime layer) is likely to be present and the measures will help ensure that heavier fouling does not develop. Once invasive aquatic species are established in a new location or habitat, they are often impossible to eradicate.

##### **3 WHAT INFLUENCES THE AMOUNT OF BIOFOULING ON A RECREATIONAL CRAFT?**

All recreational craft have some biofouling, even if recently cleaned or anti-fouled. The amount of biofouling is influenced by factors such as:

- the type, age and condition of anti-fouling coating systems and hull cleaning practices;
- operating profile, including speeds, time underway compared with time moored or anchored, water temperature, and where the craft is normally kept (e.g. on land, in a marina or on an estuarine mooring);
- places visited; and
- design and construction, particularly areas that are more susceptible to biofouling (e.g. rudders, propellers and propeller shafts).

Actively minimizing the biofouling on your craft will greatly reduce the risk of transferring invasive aquatic species and can also improve fuel efficiency and operating speeds.

#### **4 WHO SHOULD USE THIS GUIDANCE MATERIAL?**

This guidance is for use by all owners and operators of recreational craft less than 24 metres in length. All craft can potentially transfer invasive aquatic species, even trailered craft that are normally kept out of the water.

#### **5 HOW CAN BIOFOULING BE MINIMIZED?**

If your recreational craft is normally kept in the water (regardless of whether it is trailerable or not), an appropriate anti-fouling coating system and good maintenance are the best way of preventing biofouling accumulation. If you regularly operate recreational craft in both marine and fresh waters, this may help to reduce the accumulation of biofouling (many marine fouling species do not easily survive in fresh or brackish water and vice versa) however, a good maintenance regime is still essential.

#### **6 IS ONE ANTI-FOULING COATING SYSTEM ACCEPTABLE FOR ALL CRAFT?**

Different anti-fouling coating systems suit different craft and activities. When choosing an anti-fouling coating system, you should seek expert advice and consider:

- planned periods between hauling/drying out or maintenance – to make sure the coating is effective for that time period;
- craft speed and patterns of use – biofouling can rapidly accumulate when craft are stationary or inactive in port or coastal waters;
- construction material (steel, wood, aluminium, etc.) – systems are specific for different hull materials; and
- location to be applied on the craft – different coating types may be required for different parts of the hull or structure, such as around the propeller shaft or rudders, due to water flow conditions.

Anti-fouling coating systems are subject to legal requirements and it is recommended that these requirements are considered when purchasing an anti-fouling coating system. For example, the International Maritime Organization (IMO) International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001 (AFS 2001) bans the use of anti-fouling paints that contain organotin such as TBT – highly poisonous tributyltin\*.

#### **7 HOW CAN BIOFOULING BE MINIMIZED IN NICHE AREAS?**

Niche areas are parts of a craft that are particularly susceptible to biofouling growth due to different water flow conditions, the exposure of the anti-fouling coating system to wear or damage, or areas that may be inadequately coated. For example, any hull projections or indentations that may generate turbulent flow which causes greater wear on the coating. Niche areas may include:

- propellers, thrusters and/or propulsion units;
- rudder stocks and hinges;

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\* TBT has been proven to pose a substantial risk of toxicity and other chronic impacts to marine organisms and can also harm human health as a result of the consumption of affected seafood.

- rope guards, stern tube seals and propeller shafts;
- apertures or free flooding spaces;
- areas prone to anti-fouling damage from groundings;
- outlets, inlets, cooling pipes and grates;
- anodes;
- anchors, anchor wells, chains and chain lockers; and
- echo sounders and probes.

Biofouling in the niche areas of your craft can be minimized by ensuring an appropriate anti-fouling coating system is applied, including the entrances to inlet and discharge pipes, rudder fixtures, bow and stern thrusters, propellers and shafts (unless polished), rope cutters, etc. When hauling out and applying an anti-fouling coating system, you need to make sure that you change the positions of blocks or slings to ensure these areas are also coated.

Some niche areas are not protected by an anti-fouling coating system, e.g. anodes. You can minimize biofouling associated with these anodes if they are flush-fitted, or a rubber backing pad is inserted between the anode and the hull, or the gap is caulked. Otherwise, you need to ensure that the hull under the anode and its strap has an anti-fouling coating system suitable for low water flow. If your anodes are attached by recessed bolts, then the recesses should be caulked.

If your craft is equipped with a Marine Growth Prevention System (MGPS) (for example, injections of chemicals in internal seawater systems), it is important that you regularly check correct operation of the MGPS in accordance with the manufacturer's instructions.

## **8 WHAT ABOUT CLEANING?**

It is important that you regularly assess the need for cleaning and the condition of the anti-fouling coating system. Where it is safe to do so, in-water inspections of your craft may be appropriate:

- at the beginning and end of a planned period of inactivity;
- before and after a significant change to the craft's operating profile; or
- following damage to, or failure of, the anti-fouling system.

Where craft can be readily hauled out it is always preferable to clean the hull and niche areas out of the water where the waste can be effectively captured for proper disposal in accordance with local requirements. When cleaning your craft it is important that you consider the following precautions:

- haul your craft out of the water to clean it at least once a year;
- always follow the manufacturer's instructions when applying and maintaining your anti-fouling coating system;

- use cleaning methods and facilities that capture biological, chemical and physical debris; and
- coordinate cleaning or maintenance of the anti-fouling coating system, hull and niche areas with voyage or trip planning to ensure that the craft starts significant journeys as clean as practical.

Checking, cleaning and drying gear and equipment such as anchors, chains, nets, bait wells, and sports equipment after each trip is also an effective way to avoid accidental transfer of invasive aquatic species between water bodies.

## **9 WHAT ABOUT IN-WATER CLEANING?**

In-water cleaning can be suitable for removing light fouling (e.g. the slime layer) with gentle techniques that minimize both the release of toxic substances from the anti-fouling and the degradation of the anti-fouling coating system.

Before undertaking any in-water cleaning, check with the local authorities for regulations regarding the in-water cleaning of boat hulls and/or the discharge of chemicals into the water column. If possible, use appropriate technology that captures biological, chemical and physical debris so that it can be disposed of to an appropriate onshore facility.

When cleaning an area coated with a biocidal anti-fouling coating system, use cleaning techniques that minimize the release of biocide into the environment. In-water scrubbing of large and distinct biofouling (e.g. barnacles, tubeworms or fronds of algae) generates waste or debris that may create a pulse of biocide that could harm the local environment. Biocide in the sediments could affect future applications by the port authority for the disposal of dredge spoil. In-water scrubbing may also prematurely deplete the anti-fouling coating system which would then rapidly re-foul. Scrubbing your craft in-water is not recommended as an alternative to out-of-water cleaning beyond the specified service life of an anti-fouling coating system.

Craft with biocide-free anti-fouling coating systems are likely to require regular in-water cleaning. It is important to use cleaning techniques that do not damage the anti-fouling coating and impair its function.

## **10 IS RECORDING BIOFOULING ACTIVITIES IMPORTANT?**

It may be useful for you to retain your craft's biofouling management information in one place, such as the craft's logbook. This information could include details of the anti-fouling system used on your craft, any inspections made and notes on the effectiveness of the coating system. The anti-fouling manufacturer's product data sheets may also provide useful information. A diagram of the hull of your craft showing niche area locations and a summary of plans for minimizing biofouling (e.g. planned time interval between anti-fouling system renewals and how the different niche areas will and/or have been treated) is also useful. Example diagrams are shown at the end of this guidance. Having this information could also assist interested marina, port or harbour authorities to quickly and efficiently assess the potential biofouling risk of your craft and minimize delays to your journey or trip.

## **11 WHAT ABOUT TRAIERED CRAFT KEPT OUT OF THE WATER?**

Even if your trailered craft is normally kept out of the water, it still has the potential to transfer invasive aquatic species from one area to another via the craft, its trailer or associated gear

and equipment. To reduce this risk, the following measures should be taken after removing the craft from the water and before transporting to another water body or storing it on land:

- remove attached biofouling (e.g. seaweeds, barnacles, mussels) from the craft, gear, equipment and trailer;
- drain hull compartments, pipework and outboard engines;
- rinse the craft inside and out with fresh water and, if possible, dry all areas before moving;
- dispose of biofouling and waste water ashore where it cannot drain back into the water or drains; and
- inspect, clean and dry the gear and equipment after each journey or trip.

## **12 HOW IS THE IMO INVOLVED?**

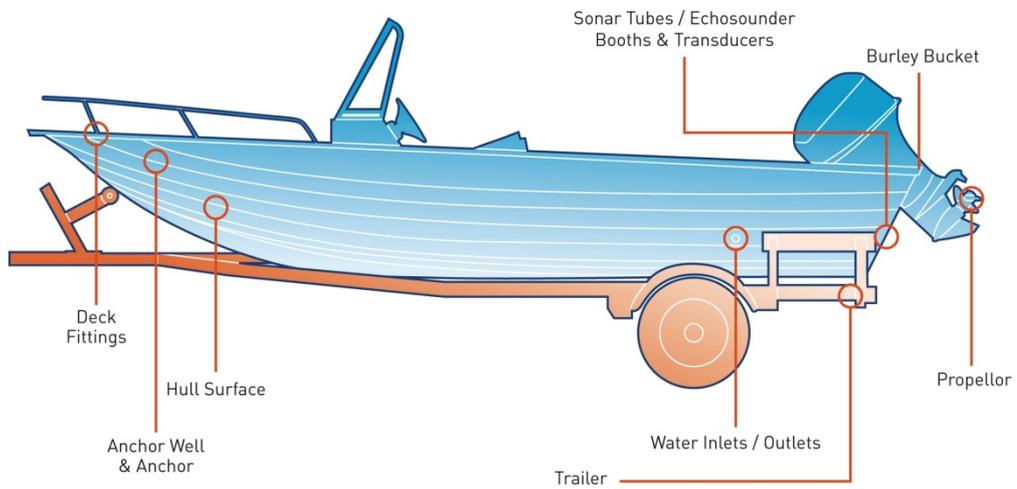
The International Maritime Organization (IMO) is the international body responsible for setting standards for the safety and security of shipping and prevention of marine pollution by ships. Some IMO regulations and/or guidelines may also apply to recreational craft. Due to global concerns about the effects of invasive aquatic species on the environment, IMO has adopted the Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species, adopted by resolution MEPC.207(62), to apply and provide information for ships of all sizes.

Please visit the link:

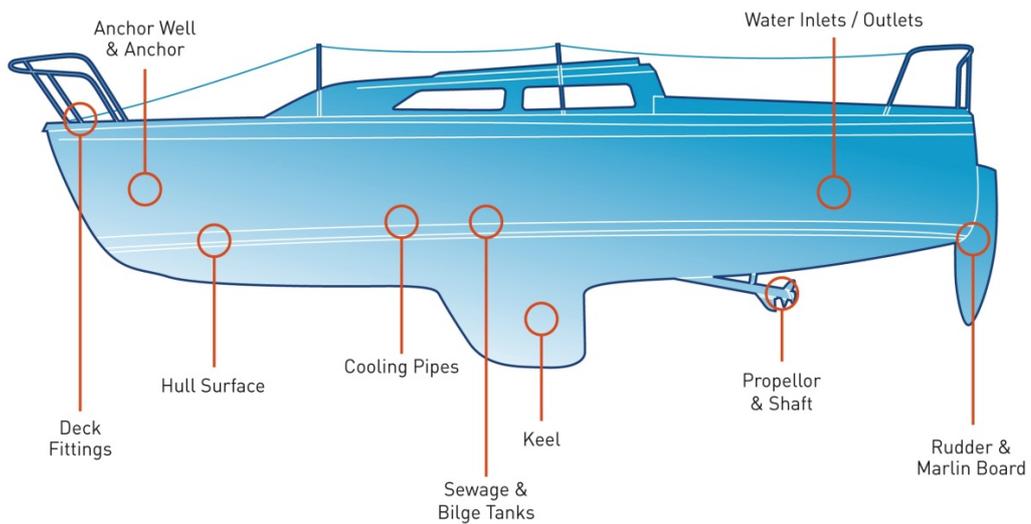
[http://www.imo.org/Knowledge Centre/How and where to find IMO information /Index of IMO resolutions/Marine Environment Protection Committee \(MEPC\) /MEPC.207\(62\)](http://www.imo.org/Knowledge Centre/How and where to find IMO information /Index of IMO resolutions/Marine Environment Protection Committee (MEPC) /MEPC.207(62))

This guidance document is specifically aimed at recreational craft less than 24 metres in length and provides information consistent with the IMO Guidelines.

### Example of a recreational trailered craft diagram



### Example of a recreational craft diagram



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## ANNEX 6

### DRAFT UNIFIED INTERPRETATION TO REGULATION 16.9 OF MARPOL ANNEX VI CONCERNING THE USE OF SLUDGE OIL DURING THE WARM-UP PROCESS OF CONTINUOUS-FEED TYPE SHIPBOARD INCINERATORS

#### MARPOL Annex VI

##### Regulation 16.9

##### *Shipboard incineration*

Regulation 16.9 reads as follows:

For incinerators installed in accordance with the requirements of paragraph 6.1 of this regulation the combustion chamber gas outlet temperature shall be monitored at all times the unit is in operation. Where that incinerator is of the continuous-feed type, waste shall not be fed into the unit when the combustion chamber gas outlet temperature is below 850°C. Where that incinerator is of the batch-loaded type, the unit shall be designed so that the combustion chamber gas outlet temperature shall reach 600°C within five minutes after start-up and will thereafter stabilize at a temperature not less than 850°C.

Interpretation:

For application of this regulation the term "waste shall not be fed into the unit" should be interpreted as follows:

The introduction of sludge oil, generated during normal operation of a ship, into a continuous-feed type incinerator during the warm-up process at combustion chamber temperatures above 500°C\* in order to achieve the normal operation combustion chamber temperature of 850°C is allowed. The combustion chamber flue gas outlet temperature should reach 850°C within the period of time specified in the manufacturer's operations manual but should not be more than five minutes.

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\* For the introduction of sludge oil into the incinerator, two conditions need to be fulfilled to secure smokeless and complete combustion:

- .1 the combustion chamber flue gas outlet temperature has to be above 850°C as required by regulation 16.9 of MARPOL Annex VI to ensure smokeless combustion; and
- .2 the combustion chamber temperature (material temperature of the fire brickwork) has to be above 500°C to ensure a sufficient evaporation of the burnable components of the sludge oil.



## ANNEX 7

### JUSTIFICATION FOR A NEW UNPLANNED OUTPUT IN THE BIENNIAL AGENDAS OF THE BLG AND FP SUB-COMMITTEES TO AMEND THE PROVISIONS IN SOLAS CHAPTER II-2 RELATING TO THE SECONDARY MEANS OF VENTING CARGO TANKS

1 This proposal for inclusion of an unplanned output is submitted in accordance with paragraphs 4.7, 5.9 and annex 1 of the *Guidelines on the organization and method of work of the Committees and their subsidiary bodies* (MSC-MEPC.1/Circ.4), taking into account the Organization's objectives (resolutions A.900(21) and A.909(22)) and the High-level Action Plan for the Organization and priorities for the 2010-2011 biennium (resolution A.1012(26)).

#### IMO's objectives

2 This proposal is considered entirely consistent with, and supporting of, the objectives of the Organization, as provided in resolutions A.900(21) and A.909(22), in particular "ensuring the effective uniform implementation of existing IMO standards and regulations relating to maritime safety and environmental protection" and "the needs of the shipping industry should be duly taken into account".

3 Noting the protracted efforts there have been for a number of years to understand the intent and rationale, and implement in a global and consistent manner, the SOLAS provisions relating to secondary means of venting cargo tanks; it is considered that this proposal is entirely consistent with Strategic Directions 2 and 5.2, i.e. "IMO will foster global compliance with its instruments governing international shipping and will promote their uniform implementation by Member States" and "Enhancing technical, operational and safety management standards" respectively. In particular, this proposal is considered consistent with, and supporting of, High-level Actions 2.0.1 and 5.2.1, i.e. "Monitor and improve conventions, etc., and provide interpretations thereof if requested by Member States" and "Keep under review the technical and operational safety aspects of all types of ships, including fishing vessels" respectively.

4 For the ship types under consideration (tankers), the proper and effective design, installation and operation of a secondary means of venting cargo tanks is critical to the safety of the vessel and those on board.

#### Compelling need

5 Noting that this proposal is for the Organization to embark upon a process to develop appropriate amendments to an existing convention (SOLAS), it is considered that there is a "compelling" need to undertake this work based on the following reasoning. This issue is directly related to the safety of ships, and more importantly the crews that serve on them. It is further noted that problems and shortcomings have been identified in the existing regulatory framework. This is demonstrated by the fact that an IACS UI has been found to be necessary to provide a common understanding of the intent of the regulation, which the FP Sub-Committee, at least, has now agreed should be further reviewed in light of the comments provided by OCIMF in FP 55/8/11. The current uncertainty in the correct implementation of the intent of the regulations needs to be addressed as a matter of priority.

6 The 1996 amendments to SOLAS chapter II-2 introduced requirements relating to the secondary means of venting for tankers. These amendments were developed as result of the Organization being aware of a number of major over pressurization incidents (such as

Mobil Petrel, British Argosy and Credo) that have resulted in major structural failure on board the vessel, substantial plant damage and only by good luck, no loss of life. In some cases it has been necessary to activate national major incident plans.

### **Analysis of the issue**

7 The 1996 amendments to SOLAS chapter II-2 relating to the secondary means of venting cargo tanks became effective for new tankers constructed after 1 July 1998 and for existing tankers, at the first scheduled dry-docking after 1 July 1998. IACS submitted its Unified Interpretation UI SC 140 to the Organization in document MSC 70/INF.23. This UI accepted the P/V-breaker as the secondary means of venting for tankers where cargo tanks would not be isolated from the cargo tank venting/inert gas main during loading, ballasting or discharging operations. This IACS unified interpretation was based on SOLAS regulations II-2/4.5.3.2.2 and II-2/11.6.1.1, which indicate that isolation of a cargo tank is acceptable provided P/V-valves with capacity for flow of small volumes for thermal breathing were provided, as well as the requirement for isolation valves to be provided with locking arrangements under the control of the responsible ship's officer. The Committee noted with interest the information provided by IACS in document MSC 70/INF.23 (paragraph 22.13 of MSC 71/23).

8 In response to the submission of the latest version of UI SC 140 to FP 55 (FP 55/8/9), OCIMF (in FP 55/8/11) has raised concern that damage to, or inadvertent closing of, a cargo tank isolation valve required by SOLAS regulation II-2/4.5.3.2.2 will render the P/V-breaker ineffective and can therefore lead to tank rupture during loading/unloading. It is acknowledged that SOLAS regulation II-2/4.5.3.2.2 requires such isolation valves to be provided with locking arrangements under the control of the responsible ship's officer, but examples of such inadvertent closing of valves resulting in incidents, indicate that such locking arrangements do not provide an acceptable level of safety. Accordingly, it is considered that as long as such isolating valves are provided, the P/V-breaker is not acceptable as a secondary mean of venting and acceptable alternative means of secondary venting must be provided for each cargo and slop tank. Acceptable alternative means are either individual P/V-valves serving each cargo tank with capacity to permit the passage of large volumes of vapour during loading, ballasting and unloading of a cargo or slop tank (often referred to as full flow P/V-valves), or individual P/V-sensors with alarms for each cargo and slop tank.

9 Based on this concern, several oil majors have required tankers to install full flow P/V-valves on each cargo tank in order to ensure adequate safety against over- and under-pressure in the event a cargo tank isolation valve is damaged or inadvertently closed. This has therefore become a form of "industry standard" on new crude oil tankers for the past 10 years. It should also be noted that USCG requirements related to vapour emission control systems may result in increased capacity of such P/V-valves. Accordingly, the consequences of requiring P/V-valves to have increased capacity are negligible.

10 Having considered FP 55/8/9 and FP 55/8/11, FP 55 "endorsed the arguments put forward by OCIMF (paragraph 8.20 of FP 55/23), which were supported by many delegations, and invited IACS, in consultation with OCIMF and other interested delegations, to review the interpretation, taking into account the comments contained in document FP 55/8/11, with a view to providing BLG 16 with the outcome of such deliberations" (FP 55/23, paragraph 8.21).

11 Having further reviewed the issue, it is proposed that SOLAS chapter II-2 is amended to reflect the above industry practice. Noting paragraph 4.25 of MSC-MEPC.1/Circ.4 and the principle therein that "if a problem is raised, then an appropriate

solution thereto should also be suggested", a first draft of the proposed amendments is provided in appendix 1. The proposal implies that the capacity of P/V-valves required in the event of failure or inadvertent closing of an isolation valve has a capacity to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging. Needless to say, such P/V-valves will also allow for thermal breathing of small volumes of air, vapour or inert gas of same tanks during, e.g. laden voyage.

12 It is noted that on chemical tankers each cargo tank is already required to be provided with a P/V-valve with capacity to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging as their primary mean of venting, because they are arranged for isolating cargo tanks from the inert gas main. Hence, the amendment would not affect chemical tankers and therefore an amendment of section 8.3.3 of the IBC Code is not considered necessary.

13 Noting annex 1 to the annex to MSC-MEPC.1/Circ.4, the practicability and feasibility of the proposal have therefore been addressed in paragraphs 9 and 11 above; while the proportionality of the proposal has been discussed in paragraph 12.

### **Analysis of implications**

14 It is recognized that amendments to an IMO convention, in this case SOLAS, will have to be transferred into the national legislation of Member States in order to take legal effect on ships that fly the flag of that State. In this respect the anticipated outcome of this proposal will represent an administrative burden for Governments. However, for those Governments who regulate their ships by a system of primary and secondary legislation, it is hoped that the associated legislative burden will not be excessive, as these amendments only clarify an existing requirement to provide a secondary means of venting cargo tanks, i.e. it is hoped these amendments will not require the time of national parliaments to address.

15 For shipyards and shipowners it is anticipated that these amendments, which will only be applicable to "new ships", will not represent an increase in costs to industry (see paragraph 9 above, which notes the existing industry practice to install full flow P/V-valves on each cargo tank). Indeed, it is considered that the proposal will simplify and harmonize the current industry practice with the international regulatory framework, with benefits to all stakeholders – in particular shipyards and shipowners. There will be an increase in the maintenance, inspection and survey burden if such valves are fitted on all cargo tanks, but there are no foreseen changes to the statutory certification for tankers.

### **Benefits**

16 The proposal will facilitate the global and consistent implementation of the provisions relating to the secondary means of venting cargo tanks, confirm the intent of these vital safety-related requirements and clarify how compliance with the regulatory requirements is to be achieved, which will directly benefit and improve the safety of those working on board tankers.

### **Industry standards**

17 It could be considered that the existing IACS Unified Interpretation SC 140 represents an "industry standard", in that since 1998 it has been used by all IACS Members on new-buildings. However, as recorded in paragraphs 8.20 and 8.21 of FP 55/23, and in light of the new evidence that has been brought to the attention of the organization by

OCIMF in FP 55/8/11, an opinion has now been expressed that this Unified Interpretation should, at least, be reviewed.

18 It is also noted that a form of "industry standard" exists, as reported in paragraph 9 above, in that several oil majors have required the installation of full flow P/V-valves on each cargo tank on new crude oil tankers for the past 10 years. Indeed, the OCIMF tanker ship inspection process "SIRE", which has been in place for over 20 years, has a question set, called VIQ (a guide to the inspection of the vessel through a standard question set). Under section 8 (Cargo) of the VIQ, question 8.39 addresses the fitting of secondary ventilation systems to all cargo tanks. The VIQ is a primary guidance tool, next to international regulations and classification rule sets, used in the construction of tanker vessels, and is considered to represent "best industry practice".

### **Output**

19 IN SMART terms (specific, measureable, achievable, realistic and time-bound), the output from this proposal will be amendments to the relevant SOLAS requirements (see appendix 1) that will apply to "new" ships, i.e. contracted for construction on or after the entry into force of the amendments. The draft texts provided in the appendix 1 have been developed by experts from classification societies/Recognized Organizations and ship operators and therefore considered achievable and realistic. The fact that the proposal does not rely on any new or innovative technology or equipment is considered relevant in terms of considering the time-bound element of the output, i.e. the effective implementation of the proposals will not need to wait for new technology to come to the market. Also, in terms of finalizing the Organization's consideration of the issue, reference is made to the section below entitled "Priority/urgency".

### **Human element**

20 The completed checklist as per MSC-MEPC.7/Circ.1 is attached at appendix 2. In particular, it is noted that, as discussed in paragraph 8 above, this "hardware-based" solution is being proposed as a result of concerns that have been raised regarding the fallibility of "human performance". Also, these systems are already fitted on board ships and consequently their operation, maintenance, inspection, testing is already familiar to crews on tankers and no additional training for crews or other stakeholders is anticipated as a consequence of the adoption of the proposed amendments to SOLAS chapter II-2. In particular, "*human element guidance on the application and/or implementation of the proposed solution*" (section 5 of the checklist) already exists for all the listed stakeholders.

### **Priority/urgency**

21 It is considered that this issue should be addressed as a matter of priority and as soon as practicable within the working arrangements of the Organization. This issue is directly related to the safety of ships, and more importantly the crews that serve on them. It is further noted that problems and shortcomings have been identified in the existing regulatory framework.

22 Taking account that a draft ~~text~~ of amendments is provided in appendix 1, which may serve as a base text for further improvement, it is expected only at one session of the FP and BLG Sub-Committees will be needed to complete the technical work for submission to the Maritime Safety Committee for approval and subsequent adoption. Therefore, it is recommended that the target completion date for this proposed unplanned output be 2013.

**Action required**

23 The Maritime Safety Committee is invited to consider adding a new unplanned output to the biennial agendas for 2012-2013 of the BLG and FP Sub-Committees and the provisional agendas for FP 56 and BLG 17, assigning the BLG Sub-Committee as the coordinator.

## APPENDIX 1

### PROPOSED AMENDMENTS TO SOLAS REGULATION II-2/4.5.3.2.2

1 The text of SOLAS regulation II-2/4.5.3.2.2 is proposed to be amended as follows (additions):

5.3.2.2 Where the arrangements are combined with other cargo tanks, either stop valves or other acceptable means shall be provided to isolate each cargo tank. Where stop valves are fitted, they shall be provided with locking arrangements which shall be under the control of the responsible ship's officer. There shall be a clear visual indication of the operational status of the valves or other acceptable means. Where tanks have been isolated, it shall be ensured that relevant isolating valves are opened before cargo loading or ballasting or discharging of those tanks is commenced. Any isolation must continue to permit the flow caused by thermal variations in a cargo tank in accordance with regulation 11.6.1.1.

For tankers constructed on or after [...], any isolation must also continue to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging in accordance with regulation 11.6.1.2.

#### Proposed amendments to SOLAS regulation II-2/11.6

2 The text of SOLAS regulation II-2/11.6.1 is proposed to be amended as follows (additions):

##### 6.1 General

The venting arrangements shall be so designed and operated as to ensure that neither pressure nor vacuum in cargo tanks shall exceed design parameters and be such as to provide for:

- .1 the flow of the small volumes of vapour, air or inert gas mixtures caused by thermal variations in a cargo tank in all cases through pressure/vacuum valves; and
- .2 the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging.

In accordance with regulations 4.5.3.2.2 and 11.6.3.2, for tankers constructed on or after [...], any isolation of a cargo tank must also continue to permit the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging.

3 The text of SOLAS regulation II-2/11.6.2 is proposed to be amended as follows (additions):

##### 6.2 Openings for small flow by thermal variations

Openings for pressure release required by paragraph 6.1.1 shall:

- .1 have as great a height as is practicable above the cargo tank deck to obtain maximum dispersal of flammable vapours, but in no case less than 2 m above the cargo tank deck; and
- .2 be arranged at the furthest distance practicable but not less than 5 m from the nearest air intakes and openings to enclosed spaces containing a source of ignition and from deck machinery and equipment which may constitute an ignition hazard. Anchor windlass and chain locker openings constitute an ignition hazard.

In accordance with regulations 4.5.3.2.2 and 11.6.3.2, for tankers constructed on or after [...], the openings must also allow for the passage of large volumes of vapour, air or inert gas mixtures during cargo loading and ballasting, or during discharging and must therefore be arranged in accordance with regulation 4.5.3.4.1.

4 The text of SOLAS regulation II-2/11.6.3.2 is proposed to be amended as follows (additions):

6.3.2 Secondary means for pressure/vacuum relief

A secondary means of allowing full flow relief of vapour, air or inert gas mixtures to prevent over-pressure or under-pressure in the event of failure of the arrangements in paragraph 6.1.2, including damage to, or inadvertent closing of, the means of isolation required in regulation 4.5.3.2.2. Alternatively, pressure sensors may be fitted in each tank protected by the arrangement required in paragraph 6.1.2, with a monitoring system in the ship's cargo control room or the position from which cargo operations are normally carried out. Such monitoring equipment shall also provide an alarm facility which is activated by detection of over-pressure or under-pressure conditions within a tank.

## APPENDIX 2

### CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

<b>Instructions:</b>	
If the answer to any of the questions below is:	
<p>(A) YES, the preparing body should provide supporting details and/or recommendation for further work.</p> <p>(B) NO, the preparing body should make proper justification as to why human element issues were not considered.</p> <p>(C) NA (Not Applicable) if the preparing body should make proper justification as to why human element issues were not considered applicable.</p>	
<b>Subject Being Assessed:</b> (e.g. Resolution, Instrument, Circular being considered)	
Provisions in SOLAS chapter II-2 relating to secondary means of venting cargo tanks	
<b>Responsible Body:</b> (e.g. Committee, Sub-Committee, Working Group, Correspondence Group, Member State)	
Maritime Safety Committee/FP and BLG Sub-Committees	
1. Was the human element considered during development or amendment process related to this subject?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	<input type="checkbox"/> Yes ✓No <input type="checkbox"/> NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	<input type="checkbox"/> Yes ✓No <input type="checkbox"/> NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Shipowners/managers?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Seafarers?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Surveyors?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
6. At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
8. Does the solution address safeguards to avoid organizational errors?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	<input type="checkbox"/> Yes <input type="checkbox"/> No✓N
10. Have human element experts been consulted in development of the solution?	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<b>11. HUMAN ELEMENT: Has the proposal been assessed against each of the factors below?</b>	
<input type="checkbox"/> CREWING. The number of qualified personnel required and available to safely operate, maintain, support, and provide training for system.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills, and abilities to achieve desired job/task performance.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	✓Yes <input type="checkbox"/> No <input type="checkbox"/> NA

<input type="checkbox"/> WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health, and comfort of those on working on board, such as noise, vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury, or death in a catastrophic event such as fire, explosion, spill, collision, flooding, or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<input type="checkbox"/> HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive, and sensory abilities of the user population.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<b>Comments:</b> (1) Justification if answers are NO or Not Applicable. (2) Recommendations for additional human element assessment needed. (3) Key risk management strategies employed. (4) Other comments. (5) Supporting documentation.	

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ANNEX 8

PROPOSED BIENNIAL AGENDA FOR THE 2012-2013 BIENNIUM AND ITEMS ON THE COMMITTEE'S POST-BIENNIAL AGENDA THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE

SUB-COMMITTEE ON BULK LIQUIDS AND GASES (BLG)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Target completion year
Number**	Description				
1.1.2.2	<b>Consideration of IACS unified interpretations</b>	MSC MEPC		BLG	Continuous
2.0.1.8	<b>Additional guidelines for implementation of the BWM Convention, including port State control</b>	MEPC	BLG FSI		2013
2.0.1.9	<b>Development of guidelines for replacement engines not required to meet the Tier III limit (MARPOL Annex VI)</b>	MEPC	BLG		2013
2.0.1.11	<b>Development of <del>other relevant</del> guidelines pertaining to equivalents set forth in regulation 4 of MARPOL Annex VI and not covered by other guidelines</b>	MEPC	BLG		2013
2.0.1.12	<b>Development of guidelines called for under paragraph 2.2.5.6 of the NO<sub>x</sub> Technical Code</b>	MEPC	BLG		2013
5.2.1.3	<b>Development of international code of safety for ships using gases or other low-flashpoint fuels</b>	MSC	BLG	DE	2013
5.2.1.4	<b>Development of a revised IGC Code</b>	MSC	BLG	FP/DE/SLF/ STW	2013

\* Items printed in bold have been selected for the provisional agenda for BLG 17. Struck-out text indicates proposed deletions and shaded text indicates proposed changes. Deleted outputs will be maintained in the report on the status of planned outputs.

\*\* Numbers refer to the planned outputs for the 2012-2013 biennium, as set out in resolution A.1038(27).

SUB-COMMITTEE ON BULK LIQUIDS AND GASES (BLG)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Target completion year
Number**	Description				
[5.2.1 <sup>†</sup>	<b>Development of amendments to the provisions of SOLAS chapter II-2 relating to the secondary means of venting cargo tanks</b>	MSC	BLG	FP	2013]
5.2.2.6	<del>Development of amendments to SOLAS to mandate enclosed space entry and rescue drills</del>	MSC	DSC	BLG	2012
7.1.2.5	<b>Production of a manual entitled "Ballast Water Management – How to do it"</b>	MEPC	BLG		2013
7.1.2.8	<del>Guidance on biofouling for recreational craft less than 24 metres in length</del>	MEPC	BLG		2012
[7.1.2.14 <sup>***</sup>	<b>Development of international measures for minimizing the transfer of invasive aquatic species through biofouling of ships</b>	MSC MEPC	BLG	DE	2012 2013]
7.1.2.15	<b>Development of a Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels</b>	MSC MEPC	BLG	DE	2013
7.2.2.3	<b>Evaluation of safety and pollution hazards of chemicals and preparation of consequential amendments</b>	MEPC	BLG		Continuous
7.3.1.1	<b>Review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code</b>	MEPC	BLG		2012 2013
SUB-COMMITTEE ON BULK LIQUIDS AND GASES (BLG)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent	Coordinating	Associated	Target

<sup>†</sup> Subject to approval by MSC 90 and endorsement by C 108.

<sup>\*\*\*</sup> Output number refers to resolution A.1016(26) as this output has not been included in this biennium's High-level Action Plan, as adopted by resolution A.1038(27). The Council will assign a new number for this item in due course.

\* Items printed in bold have been selected for the provisional agenda for BLG 17. Struck-out text indicates proposed deletions and shaded text indicates proposed changes. Deleted outputs will be maintained in the report on the status of planned outputs.

Number**	Description	organ(s)	organ(s)	organ(s)	completion year
7.3.2.2	<b>Keep under review IMO measures and contributions to international climate mitigation initiatives and agreements – (including CO<sub>2</sub> sequestration and ocean fertilization as well as consideration of the impact on the Arctic of emissions of Black Carbon from international shipping)</b>	MEPC		BLG	Annual
12.1.1	<b>Casualty analysis</b>	MSC	FSI	BLG	Continuous
13.0.3	<b>Consideration of improved and new technologies approved for ballast water management systems and reduction of atmospheric pollution</b>	MSC	BLG		Continuous

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\*\* Numbers refer to the planned outputs for the 2012-2013 biennium, as set out in resolution A.1038(27).

**ITEMS TO BE PLACED ON THE COMMITTEES' POST-BIENNIAL AGENDAS THAT FALL UNDER THE PURVIEW OF THE SUB-COMMITTEE**

<b>MARITIME SAFETY COMMITTEE</b>								
<b>ACCEPTED POST-BIENNIAL OUTPUTS</b>				<b>Parent organ(s)</b>	<b>Coordinating organ(s)</b>	<b>Associated organ(s)</b>	<b>Timescale (sessions)</b>	<b>References</b>
<b>No.</b>	<b>Reference to Strategic Directions</b>	<b>Reference to High-level Actions</b>	<b>Description</b>					
1	5.2.1	5.2.1.3	Finalization of international code of safety for ships using gases or other low-flashpoint fuels	MSC	BLG	DE	2014	BLG 15/19, paragraph 6.15
2	7.1.2	7.1.2.5	Finalization of production of a manual entitled "Ballast Water Management – How to do it"	MEPC	BLG		Ongoing	BLG 16/16, Section 13
3	7.2.2	7.2.2.1	Safety aspects of alternative tanker designs assessed	MSC	BLG		Ongoing	BLG 3/18, paragraph 15.7
4	7.2.2	7.2.2.2	Environmental aspects of alternative tanker designs	MEPC	BLG		Ongoing	BLG 3/18, paragraph 15.7

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## ANNEX 9

### DRAFT PROVISIONAL AGENDA FOR BLG 17

- Opening of the session
- 1 Adoption of the agenda
  - 2 Decisions of other IMO bodies
  - 3 Evaluation of safety and pollution hazards of chemicals and preparation of consequential amendments
  - 4 Additional guidelines for implementation of the BWM Convention
  - 5 Production of a manual entitled "Ballast Water Management – How to do it"
  - 6 Consideration of improved and new technologies approved for ballast water management systems and reduction of atmospheric pollution
  - 7 Development of international measures for minimizing the transfer of invasive aquatic species through biofouling of ships
  - 8 Development of international code of safety for ships using gases or other low-flashpoint fuels
  - 9 Development of a revised IGC Code
  - 10 Consideration of the impact on the Arctic of emissions of Black Carbon from international shipping
  - 11 Review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO<sub>x</sub> Technical Code
    - .1 Development of guidelines for replacement engines not required to meet the Tier III limit (MARPOL Annex VI)
    - .2 Development of guidelines pertaining to equivalents set forth in regulation 4 of MARPOL Annex VI and not covered by other guidelines
    - .3 Development of guidelines called for under paragraph 2.2.5.6 of the NO<sub>x</sub> Technical Code
  - 12 Development of a Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels
  - [13 Development of amendments to the provisions of SOLAS chapter II-2 relating to the secondary means of venting cargo tanks]\*
  - 14 Consideration of IACS unified interpretations

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\* Subject to approval by MSC 90 and C 108.

- 15 Casualty analysis
- 16 Biennial agenda and provisional agenda for BLG 18
- 17 Election of Chairman and Vice-Chairman for 2014
- 18 Any other business
- 19 Report to the Committees

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**ANNEX 10**

**REPORT ON THE STATUS OF PLANNED OUTPUTS FOR THE 2012-2013 BIENNIUM**

Planned output number in the High-level Action Plan for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.2	Cooperation with IACS: consideration of unified interpretations	Continuous	MSC MEPC		BLG	Ongoing		BLG 16/16, section 11; MSC 78/26, paragraph 22.12
2.0.1.8	Additional guidelines for implementation of the BWM Convention, including port State control	2013	MEPC	BLG FSI		In progress		BLG 16/16, section 4; MEPC 57/21, paragraph 18.11
2.0.1.9	Development of guidelines for replacement engines not required to meet the Tier III limit (MARPOL Annex VI)	2013	MEPC	BLG		In progress		BLG 16/16, section 13; MEPC 57/21, paragraph 18.11
2.0.1.11	Development of guidelines pertaining to equivalents set forth in regulation 4 of MARPOL Annex VI and not covered by other guidelines	2013	MEPC	BLG		In progress		BLG 16/16, section 13; MEPC 57/21, paragraph 18.11
2.0.1.12	Development of guidelines called for under paragraph 2.2.5.6 of the NO <sub>x</sub> Technical Code	2013	MEPC	BLG		In progress		BLG 16/16, section 13; MEPC 57/21, paragraph 18.11

Planned output number in the High-level Action Plan for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.3	Development of international code of safety for ships using gases or other low-flashpoint fuels	2013	MSC	BLG	DE	In progress		BLG 16/16, section 6; MSC 78/26, paragraph 24.11
5.2.1.4	Development of a revised IGC Code	2013	MSC	BLG	FP/DE/SLF /STW	In progress		BLG 16/16, section 7; MSC 83/28, paragraph 25.7
[5.2.1 <sup>*</sup>	Development of amendments to the provisions of SOLAS chapter II-2 relating to the secondary means of venting cargo tanks	2013	MSC	BLG	FP			BLG 16/16, section 11]
5.2.2.6	Development of amendments to SOLAS to mandate enclosed space entry and rescue drills	2012	MSC	DSC	BLG	Completed		BLG 16/16, section 10; MSC 87/26, paragraph 24.11
7.1.2.5	Production of a manual entitled "Ballast Water Management – How to do it"	2013	MSC	BLG		In progress		BLG 16/16, section 13
7.1.2.8	Guidance on biofouling for recreational craft less than 24 metres in length	2012	MEPC	BLG		Completed		BLG 16/16, section 5; MEPC 56/23, paragraph 19.12

\* Subject to approval by MSC 90 and C 108.

Planned output number in the High-level Action Plan for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
7.1.2.14*	Development of international measures for minimizing the transfer of invasive aquatic species through biofouling of ships	2012 2013	MEPC	BLG		In progress		BLG 16/16, section 5; MEPC 56/23, paragraph 19.12
7.1.2.15	Development of a Code for the transport and handling of limited amounts of hazardous and noxious liquid substances in bulk on offshore support vessels	2013	MEPC	BLG	DE	In progress		BLG 16/16, section 9; MEPC 60/22, paragraph 19.3
7.2.2.3	Evaluation of safety and pollution hazards of chemicals and preparation of consequential amendments	Continuous	MSC MEPC	BLG		Ongoing		BLG 16/16, section 3
7.3.1.1	Review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NO <sub>x</sub> Technical Code	2012 2013	MEPC	BLG		In progress		BLG 16/16, section 8; MEPC 57/21, paragraph 18.11

\* Output number refers to resolution A.1016(26) as this output has not been included in this biennium's High-level Action Plan, as adopted by resolution A.1038(27). The Council will assign a new number for this item in due course.

Planned output number in the High-level Action Plan for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
7.3.2.2	Keep under review IMO measures and contributions to international climate mitigation initiatives and agreements – (including CO <sub>2</sub> sequestration and ocean fertilization as well as consideration of the impact on the Arctic of emissions of Black Carbon from international shipping)	Annual	MEPC		BLG	In progress		BLG 16/16, section 15; MEPC 62/24, paragraph 4.20
12.1.1	Casualty analysis	Continuous	MSC	FSI	BLG	Ongoing		BLG 16/16, section 12; MSC 80/24, paragraph 21.6
13.0.3	Consideration of improved and new technologies approved for ballast water management systems and reduction of atmospheric pollution	Continuous	MEPC	BLG		Ongoing		BLG 16/16, section 13

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**ANNEX 11**

**STATEMENT BY THE DELEGATION OF ITALY IN CONNECTION WITH  
THE COSTA CONCORDIA ACCIDENT**

"Thank you, Mr. Chairman.

As already expressed by the Secretary-General in his opening speech, Italy has welcomed Secretary General's offer of the participation of IMO to the marine accident investigation of Costa Concordia by giving to the Director of the Maritime Safety Division, Mr. Winbow, along with the Italian Alternate permanent representative to IMO, Rear Admiral Aliperta, the status of "observers" in the said marine casualty investigation.

This delegation wishes also to thank all Member States and NGOs who have expressed their solidarity and willingness to help Italy in such a delicate moment.

Governments and shipping industry common interest in the incident under many aspects, is understood and highly regarded by Italy and in this respect everything will be done to assure a speedy and detailed investigation, the results of which will be submitted to this Organization as soon as available.

Allow me now to give an update on the present situation of Costa Concordia without retracing the history of the accident which we all know.

Search and rescue operations have continued incessantly and another dead person has been found, so to date the reported casualties are 17 and missing 15.

The unloading of the bunker oil should start as soon as weather conditions improve.

Thank you, Mr. Chairman."

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## ANNEX 12

### STATEMENT BY THE OBSERVER OF CLIA IN CONNECTION WITH THE *COSTA CONCORDIA* ACCIDENT

"Thank you, Mr. Chairman,

The Cruise Lines International Association sincerely thanks the Secretary-General for his remarks. We are deeply saddened by the events of the last two weeks. We especially offer our most heartfelt sympathies to those who may have lost loved ones and to those who continue to struggle with the uncertainty over the souls that remain missing. We are especially grateful to the brave men and women who participated in the rescue efforts and to those who continue to work tirelessly, and often at great risk to themselves, in the ongoing recovery, salvage, and other efforts.

In response to the Concordia incident and as part of the industry's continuous efforts to review and improve safety measures, the Cruise Lines International Association (CLIA), speaking on behalf of the global cruise lines industry, last week announced the launch of a Cruise Industry Operational Safety Review. The Review will include a comprehensive assessment of the critical human factors and operational aspects of maritime safety. As best practices are identified, they will be shared among CLIA members and any appropriate recommendations will be shared with the IMO. Recommendations will be made on an ongoing basis.

Key components of the Review include:

- .1 an internal review by CLIA members of their own operational safety practices and procedures concerning issues of navigation, evacuation, emergency training, and related practices and procedures;
- .2 consultation with independent external experts;
- .3 identification and sharing of industry best practices and policies, as well as possible recommendations to the IMO for substantive regulatory changes to further improve the industry's operational safety; and
- .4 collaboration with the IMO, governments and regulatory bodies to implement any necessary regulatory changes.

CLIA is fully committed to understanding the factors that contributed to the Concordia incident and is proactively responding to all maritime safety issues. The Cruise Industry Operational Safety Review will enable the industry to do so in a meaningful and expedited manner.

Thank you, Mr. Chairman."

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## ANNEX 13

### STATEMENT BY THE OBSERVER OF OCIMF IN CONNECTION WITH TWO RECENT OIL TANKER ACCIDENTS

"Good Morning, Mr Chairman,

OCIMF would like to draw the attention of the Sub-Committee to the recent explosions and subsequent loss of life on two oil tankers and thank the Secretary-General for his comments on the tragic incident on the **Costa Concordia**.

On January 15th, the 6536 DWT product tanker, DOOLA No. 3 was ripped apart by an explosion off South Korea whilst tank cleaning, killing 5 and with 6 missing.

On the same day, the 4112 DWT tanker Edirne exploded off the coast of Durrës, Albania, which was registered in Freetown, Sierra Leone, with the loss of a further three seafarers.

Both of the vessels fall below the current and proposed vessel category for the fitting of an extremely effective industry accepted safety barrier – INERT GAS.

Avoidable, unnecessary and unacceptable loss of life.

In respect of these two incidents, OCIMF looks forward to the completion of a robust and extensive investigation by either coast or flag state and the published reports, so that lessons can be learnt and incorporated as appropriate for the benefit of everyone within this industry.

Excluding these incidents, the Organization and its Member States may be interested to know that during the period 2005 to 2012, fire and explosion on tankers in the sub 20,000 t category number 83.

These incidents have killed a further 21 seafarers.

In the sub 8,000 dwt class, 53 incidents killed a further 15 seafarers! A total of 36 lives lost needlessly and in conditions which, had inert gas been used, may have been totally avoidable.

This observer organization intends to submit to MSC the background documentation for this statement."

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## ANNEX 14

### STATEMENT BY THE DELEGATION OF AUSTRALIA IN CONNECTION WITH THE ACCIDENT OF PASSENGER SHIP *RABAUl QUEEN*

"Thank you, Mr Chairman,

We take this opportunity to brief distinguished delegates on an incident involving the passenger vessel, the MV **Rabaul Queen**.

We offer our sympathy to all those affected by this tragic incident.

The MV **Rabaul Queen** sank while travelling from Kimbe to Lae, off the coast of the Huon Peninsula in Papua New Guinea, with approximately 350 people on board in the early morning of 2 February, although later reports suggest up to 500 people may have been on board.

At 7.25 a.m. Australian Eastern Summer Time, on 2 February, the Australian Maritime Safety Authority's (AMSA) Rescue Coordination Centre received an initial satellite detection of a distress beacon belonging to the passenger vessel MV **Rabaul Queen**.

Australia provides a Cospas-Sarsat service area in the south-west Pacific, including to Papua New Guinea. The distress information was communicated immediately to the Papua New Guinea Maritime Rescue Coordination Centre.

The position of the MV **Rabaul Queen** as indicated by the distress beacon was about nine nautical miles offshore from the north-east coast of Papua New Guinea, near Lae. It is in the Papua New Guinea Search and Rescue Region.

Accordingly, Papua New Guinea has coordinated the search and rescue overall throughout the incident, while Australia has assisted where we have the capacity to do so. That includes the capacity to communicate with ships in the area and coordinate their searching, to provide aircraft to assist the search and, to an extent, to coordinate the activities of the aircraft.

AMSA consequently broadcast a distress message to ships in the area and requested advice of ability to respond and estimated time of arrival at the scene. A number of merchant ships responded, with eight moving to the scene.

During the daylight hours of 2 February, 238 survivors were recovered by five of these ships, namely, **Mol Summer**, **MSC Carole**, **Violet**, **Zong He** and **Cap Scott**. The master of the **Mol Summer** was appointed on scene coordinator, a role which he filled with great expertise and energy. Australia thanks him for his efforts and will seek the opportunity to debrief the Master when the **Mol Summer** arrives in Brisbane, Australia, the vessel's next port of call. The ships were assisted by three helicopters on the scene which searched for survivors and relayed their location details to the ships.

Two dedicated AMSA search and rescue Dornier aircraft, responding from Cairns and Darwin, and an Australian Defence Force P3 Orion aircraft, delivered life rafts and assisted with air searching. These aircraft remained in Papua New Guinea overnight and continue to assist with expanded search and rescue efforts today, supported by two additional, civilian aircraft.

The five ships with survivors aboard made passage towards the port of Lae overnight under the coordination of **Mol Summer**. Papua New Guinea authorities are making further arrangements for the survivors. The vessel **Kwang Tung** has assumed responsibilities as the on-scene coordinator and is being assisted by the vessels **Coral Ruby** and **Alcem Lugait**.

AMSA continues to provide ongoing assistance to the Papua New Guinea Maritime Rescue Coordination Centre with the coordination of search efforts and with the provision of aircraft and search and rescue specialists. AMSA has deployed four search and rescue personnel to Papua New Guinea.

Australia will continue to work closely with the Papua New Guinea authorities on this rescue mission.

Thank you, Mr Chairman."

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