



MARINE ENVIRONMENT PROTECTION
COMMITTEE
57th session
Agenda item 21

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**REPORT OF THE MARINE ENVIRONMENT PROTECTION COMMITTEE
ON ITS FIFTY-SEVENTH SESSION**

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1 INTRODUCTION

1.1 The fifty-seventh session of the Marine Environment Protection Committee was held at the Royal Horticultural Halls and Conference Centre, London, from 31 March to 4 April 2008, under the chairmanship of Mr. A. Chrysostomou (Cyprus). The Committee's Vice Chairman, Mr. A. Chatterjee (India), was also present.

1.2 The session was attended by delegations from the following Members of IMO:

| | |
|--|-------------------------------------|
| ALGERIA | KENYA |
| ANGOLA | KUWAIT |
| ANTIGUA AND BARBUDA | LATVIA |
| ARGENTINA | LIBERIA |
| AUSTRALIA | LITHUANIA |
| BAHAMAS | LUXEMBOURG |
| BANGLADESH | MALAYSIA |
| BARBADOS | MALTA |
| BELGIUM | MARSHALL ISLANDS |
| BELIZE | MEXICO |
| BOLIVIA | MOROCCO |
| BRAZIL | NETHERLANDS |
| CANADA | NEW ZEALAND |
| CHILE | NIGERIA |
| CHINA | NORWAY |
| COLOMBIA | OMAN |
| CROATIA | PANAMA |
| CUBA | PAPUA NEW GUINEA |
| CYPRUS | PERU |
| DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA | PHILIPPINES |
| DENMARK | POLAND |
| DOMINICA | PORTUGAL |
| DOMINICAN REPUBLIC | QATAR |
| ECUADOR | REPUBLIC OF KOREA |
| EGYPT | ROMANIA |
| ESTONIA | RUSSIAN FEDERATION |
| FINLAND | SAINT VINCENT AND THE GRENADINES |
| FRANCE | SAUDI ARABIA |
| GERMANY | SERBIA |
| GHANA | SINGAPORE |
| GREECE | SLOVENIA |
| HONDURAS | SOUTH AFRICA |
| ICELAND | SPAIN |
| INDIA | SRI LANKA |
| INDONESIA | SWEDEN |
| IRAN (ISLAMIC REPUBLIC OF) | SWITZERLAND |
| IRELAND | SYRIAN ARAB REPUBLIC |
| ISRAEL | THAILAND |
| ITALY | TRINIDAD AND TOBAGO |
| JAMAICA | TUNISIA |
| JAPAN | TURKEY |

TUVALU
UKRAINE
UNITED KINGDOM
UNITED STATES

URUGUAY
VANUATU
VENEZUELA

the following Associate Member of IMO:

HONG KONG, CHINA

and the following State not Member of IMO:

COOK ISLANDS

by representatives from the following United Nations and Specialized Agencies:

UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)/SECRETARIAT OF
THE BASEL CONVENTION
INTERNATIONAL LABOUR ORGANIZATION (ILO)
THE REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR
THE MEDITERRANEAN SEA (REMPEC)

by observers from the following intergovernmental organizations:

EUROPEAN COMMISSION (EC)
MARITIME ORGANISATION FOR WEST AND CENTRAL AFRICA (MOWCA)
THE BALTIC MARINE ENVIRONMENT PROTECTION COMMISSION
(HELSINKI COMMISSION)
INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)
INTERNATIONAL OIL POLLUTION COMPENSATION FUNDS (IOPC FUNDS)
SOUTH PACIFIC REGIONAL ENVIRONMENT PROGRAMME (SPREP)
WEST AND CENTRAL AFRICA MEMORANDUM OF UNDERSTANDING ON
PORT STATE CONTROL (ABUJA MoU)

and by observers from the following non-governmental organizations:

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
INTERNATIONAL RADIO-MARITIME COMMITTEE (CIRM)
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 MARITIME PILOTS' ASSOCIATION (IMPA)
FRIENDS OF THE EARTH INTERNATIONAL (FOEI)
INTERNATIONAL ASSOCIATION OF THE INSTITUTES OF NAVIGATION (IAIN)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)

COMMUNITY OF EUROPEAN SHIPYARDS' ASSOCIATIONS (CESA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS
(INTERTANKO)
THE INTERNATIONAL GROUP OF P & I ASSOCIATIONS (P & I CLUBS)
THE INTERNATIONAL TANKER OWNERS POLLUTION FEDERATION LIMITED
(ITOPF)
THE WORLD CONSERVATION UNION (IUCN)
ADVISORY COMMITTEE ON PROTECTION OF THE SEA (ACOPS)
GREENPEACE INTERNATIONAL
CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS
(INTERCARGO)
WORLD WIDE FUND FOR NATURE (WWF)
ASSOCIATION OF EUROPEAN MANUFACTURERS OF INTERNAL COMBUSTION
ENGINES (EUROMOT)
INTERNATIONAL PETROLEUM INDUSTRY ENVIRONMENTAL
CONSERVATION ASSOCIATION (IPIECA)
THE INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY
(IMarEST)
INTERNATIONAL PARCEL TANKERS ASSOCIATION (IPTA)
INTERNATIONAL SAILING FEDERATION (ISAF)
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)
INTERNATIONAL HARBOUR MASTERS' ASSOCIATION (IHMA)
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS (RINA)
INTERFERRY
INTERNATIONAL BUNKER INDUSTRY ASSOCIATION (IBIA)
INTERNATIONAL MARITIME HEALTH ASSOCIATION (IMHA)
INTERNATIONAL PAINTING AND PRINTING INK COUNCIL (IPPIC)
INTERNATIONAL FUND FOR ANIMAL WELFARE (IFAW)
INTERNATIONAL SPILL CONTROL ORGANIZATION (ISCO)

1.3 The Chairman of the Maritime Safety Committee (MSC), Mr. N. Ferrer (Philippines); the Chairperson of the Sub-Committee on Flag State Implementation (FSI), Mrs. Tatjana Krilić (Croatia); and the Chairman of the Sub-Committee on Bulk Liquids and Gases (BLG), Mr. Z. Alam (Singapore); were also present.

The Secretary-General's opening address

1.4 The Secretary-General welcomed participants and delivered his opening address. The full text of the opening address is reproduced in document MEPC 57/INF.25.

Chairman's remarks

1.5 The Chairman thanked the Secretary-General for his remarks and stated that they would be given every consideration in the work of the Committee.

Statement by the Republic of Korea

1.6 At this juncture, the delegation of the Republic of Korea made a statement pertaining to an oil spill accident involving the oil tanker **Hebei Spirit**, which took place on 7 December 2007 in the western coast of the country and spilled over 10,000 tons of crude oil, resulting in serious damages to the beautiful marine resort and aquaculture areas.

1.7 The same delegation expressed deep gratitude to the Secretary-General of the Organization, the Director of the IOPC Funds and the staff of ITOPF for their support from the outset of the incident; and to the Governments of Canada, China, Japan, Singapore and the United States, as well as UNEP and the European Union, for their assistance and technical recommendations regarding clean-up operations and restoration of the marine ecosystem.

Adoption of the agenda

1.8 The Committee adopted the agenda (MEPC 57/1) and the provisional timetable for guidance during the session (MEPC 57/1/1, annex 2, as amended). The agenda, as adopted, with a list of documents considered under each agenda item, is set out in document MEPC 57/INF.26.

Credentials

1.9 The Committee noted the report of the Secretary-General that credentials of the delegations were in due and proper order.

2 HARMFUL AQUATIC ORGANISMS IN BALLAST WATER

2.1 The Committee recalled that, from 31 May 2005, the “International Convention for the Control and Management of Ships’ Ballast Water and Sediments” (BWM Convention) had been open for accession by any State and noted that three more States (Sierra Leone, Kenya and Mexico) had acceded to the Convention since the last session, which brought the number of contracting Governments to 13, representing 3.62% of the world merchant fleet tonnage. The Committee urged the other Member States to ratify this Convention at their earliest possible opportunity.

2.2 The Committee recalled the conclusion of the Ballast Water Review Group established during MEPC 56 that a limited number of ballast water treatment technologies would be available to meet the first implementation date of the BWM Convention, and the concerns regarding the capability of all ships subject to regulation B-3.3 of the Convention to meet the D-2 standard in 2009 due to procedural and logistical problems.

2.3 The Committee further recalled that, following an initiative of the Secretary-General to address these concerns, the Assembly, at its twenty-fifth session, had adopted resolution A.1005(25) on the Application of the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004. The Assembly resolution calls on States, which have not yet done so, to ratify, accept, approve or accede to the Convention as soon as possible. In the meantime, the resolution recommends that ships subject to regulation B-3.3 constructed in 2009 should not be required to comply with regulation D-2 until their second annual survey, but no later than 31 December 2011.

2.4 The Committee noted that operative paragraph 6 of the resolution A.1005(25) requests MEPC to keep this matter under review and inform the Assembly accordingly.

Establishment of the Ballast Water Review Group

2.5 The Committee recalled that MEPC 56 had agreed to re-establish the Ballast Water Review Group at this session. In view of the significant volume of work, the Committee instructed the Group to start working immediately on the revised Procedure (G9), the relationship between Procedure (G9) and Guidelines (G8) and the draft Procedure for assessing the same levels of protection and approval of other methods of ballast water management under regulation B-3.7 of the BWM Convention and re-join the plenary at a later stage to consider the remaining sub-items of the assigned terms of reference. Although the Committee noted that the outcome of BLG 12 would be reported to MEPC 58, having agreed with the view of BLG 12 that five BLG documents were of particular relevance to the work of the Ballast Water Review Group, the Committee decided to refer these documents (BLG 12/5, BLG 12/5/3, BLG 12/5/7, BLG 12/5/9 and BLG 12/5/10) to the Ballast Water Review Group for consideration.

Update on the Ballast Water Management Convention and related matters

2.6 After resuming the consideration of this agenda item on Wednesday, 2 April 2008, the Committee noted that 13 sets of Guidelines for uniform implementation of the BWM Convention had been developed and adopted since MEPC 53 and that the last remaining set of Guidelines, i.e. the Guidelines for ballast water sampling (G2), had been finalized by the Ballast Water Working Group established during BLG 12. The Committee also noted that MEPC 58 would be invited to adopt these Guidelines by an MEPC resolution. The Committee noted further that, to date, one ballast water management system that makes use of Active Substances has received Final Approval and six systems that have been granted Basic Approval are yet to be considered for Final Approval (MEPC 57/2/9).

Reports of the fourth and fifth meetings of the GESAMP-BWWG

2.7 The Committee noted that the fourth and fifth meetings of the GESAMP-BWWG were held from 5 to 9 November 2007 and from 14 to 18 January 2008, respectively, at IMO's temporary Headquarters, under the chairmanship of Dr. Tim Bowmer and that the Group had reviewed a total of seven proposals for approval of ballast water management systems that make use of Active Substances submitted by Germany, Japan, Norway, The Republic of Korea and South Africa.

2.8 The Committee further noted that the fifth meeting of the GESAMP-BWWG was held as an extraordinary meeting in addition to the regular meeting scheduled between MEPC 56 and MEPC 57, to review the remaining proposals which had been submitted before the deadline for the fourth meeting. The Committee expressed its appreciation for the efforts made by the members of the GESAMP-BWWG to accomplish this task and to facilitate timely development of new ballast water technologies.

2.9 Having considered the recommendations contained in annex 4 of the Report of the fourth meeting of the GESAMP-BWWG (MEPC 57/2), the Committee could not agree to give Final Approval to the Electro-Clean System proposed by The Republic of Korea in document MEPC 57/2/1.

2.10 The delegation of The Republic of Korea informed the Committee of the progress made towards ratification of the Ballast Water Management Convention and indicated that primary

national legislation had already been implemented in this respect. With regard to the proposal for Final Approval of the Electro-Clean System, the delegation of the Republic of Korea expressed its gratitude for the recommendations made by the GESAMP-BWWG and indicated that all these recommendations had been carefully addressed; additional testing had been conducted; and the proposal for Final Approval had been re-submitted for re-evaluation by the GESAMP-BWWG and subsequent consideration by the Committee at its 58th session.

2.11 Having considered the recommendations contained in annex 5 of the Report of the fourth meeting of the GESAMP-BWWG (MEPC 57/2), the Committee agreed to give Basic Approval to the ClearBallast System proposed by Japan in document MEPC 57/2/2 and, at the same time, invited the Administration of Japan to take into account all the recommendations indicated in annex 5 of the above report during the further development of the system.

2.12 In addressing the recommendations contained in annex 6 of the Report of the fourth meeting of the GESAMP-BWWG (MEPC 57/2) and document MEPC 57/2/13 (Germany) commenting on it, the Committee could not agree to give Final Approval to the CleanBallast! System proposed by Germany in document MEPC 57/2/3 for the reasons given in annex 6 of the above report.

2.13 The Committee requested the Ballast Water Review Group to assess, subject to time availability, the procedural aspects related to the submission of proposals for approval of ballast water management systems that make use of Active Substances considering, in particular, the possibilities of effective communication between the GESAMP-BWWG and the applicants.

2.14 Following consideration of the recommendations contained in annex 5 of the Report of the fifth meeting of the GESAMP-BWWG (MEPC 57/2/10), the Committee agreed to give Basic Approval to the Resource Ballast Technologies System proposed by South Africa in document MEPC 56/2/3 and, at the same time, invited the Administration of South Africa to take into account all the recommendations indicated in annex 5 of the above report during the further development of the system.

2.15 Having examined the recommendations contained in annex 6 of the Report of the fifth meeting of the GESAMP-BWWG (MEPC 57/2/10), the Committee agreed to give Basic Approval to the GloEn-PatrolTM Ballast Water Management System proposed by the Republic of Korea in document MEPC 57/2/4 and, at the same time, invited the Administration of the Republic of Korea to take into account all the recommendations indicated in annex 6 of the above report during the further development of the system.

2.16 Having considered the recommendations contained in annex 7 of the Report of the fifth meeting of the GESAMP-BWWG (MEPC 57/2/10), the Committee agreed to give Final Approval to the SEDNA[®] OCEAN Ballast Water Management System (using PERACLEAN[®]) proposed by Germany in document MEPC 57/2/5 and, at the same time, invited the Administration of Germany to take into account all the recommendations indicated in annex 7 of the above report prior to the issuance of the Type Approval Certificate.

2.17 Having addressed the recommendations contained in annex 8 of the Report of the fifth meeting of the GESAMP-BWWG (MEPC 57/2/10), the Committee agreed to give Basic Approval to the OceanSaver[®] Ballast Water Management System (OS BWMS) proposed by Norway in document MEPC 57/2/6 and, at the same time, invited the Administration of Norway to take into account all the recommendations indicated in annex 8 of the above report during the further development of the system.

2.18 The Committee reiterated its recommendation to the Administrations submitting proposals for approval of ballast water management systems that a comprehensive and rigorous review of the applications should be undertaken to ensure their completeness, sufficiency and soundness of conclusion reached to facilitate the timely review of their proposals by the GESAMP-BWWG.

2.19 Following consideration of documents MEPC 57/2/7 (the Netherlands) and MEPC 57/2/8 (Japan) containing the non-confidential information relating to two ballast water management systems developed in the Netherlands and Japan, and having noted that the application dossiers and the other relevant documents had also been submitted to the Marine Environment Division, the Committee agreed to refer documents MEPC 57/2/7 and MEPC 57/2/8 to the sixth meeting of the GESAMP-BWWG (scheduled for 19 to 23 May 2008) for detailed consideration.

2.20 In that connection, the Committee, having been informed that four more proposals for approval of ballast water management systems that make use of Active Substances had been submitted to MEPC 58 by the 21 March 2008 deadline, noted with appreciation the efforts of the Secretariat to convene an additional meeting of the GESAMP-BWWG to evaluate all these submissions and advise MEPC 58 accordingly.

Methodology for information gathering and the conduct of work of the GESAMP-BWWG (the Methodology)

2.21 Although MEPC 56 had agreed that the Methodology, as currently drafted, should be suitable for use as technical guidance by applicants submitting requests for evaluation of ballast water treatment systems, the Committee was of the view that the Methodology is a living document in need of further development and instructed the GESAMP-BWWG to continue to develop this Methodology during its future meetings.

2.22 The Committee noted that the GESAMP-BWWG had continued to develop the Methodology during its fourth and fifth meetings and that the updated version of the Methodology was contained in annex 4 of the report of the fifth meeting of the Group. The Committee noted further that the updated version had incorporated changes agreed at MEPC 56, in particular, replacing the mandatory wording by guidance document language and had included previously agreed additional guidance regarding Human Exposure Scenario and the procedure for Final Approval.

2.23 After the introduction by the Chairman of the GESAMP-BWWG and some discussions, the Committee agreed to refer annex 4 of the Report of the fifth meeting of the GESAMP BWWG (MEPC 57/2/10) to the Ballast Water Review Group for detailed consideration.

Proposed changes to the Guidelines for approval of ballast water management systems (G8)

2.24 The Committee recalled that MEPC 56 had agreed that Guidelines (G8) and Procedure (G9) should be revised to further clarify, co-ordinate and improve them, taking into account best practice and lessons learned by the GESAMP-BWWG and the Administrations.

2.25 The Committee noted that the revision of the two sets of guidelines mentioned above should not become a total re-opening and subsequent re-negotiation of these two MEPC resolutions. The proposed changes should be based on careful validation of new technical procedures suggested and aimed at improving the practical value of the existing

guidelines, enhancing transparency and providing additional clarification regarding their application.

2.26 In that context, the Committee considered document MEPC 57/2/11 (Germany), proposing changes to Guidelines (G8) concerning the minimum intake concentration of organisms for valid shipboard tests and testing of indicator microbes toxicogenic *Vibrio cholerae* (O1 and O139), and document MEPC 57/2/12 (Norway) proposing changes to concentration levels of test organisms during shipboard tests stipulated in Guidelines (G8). Having noted the support expressed by the delegations of Brazil, the Russian Federation, Slovenia and IUCN to the proposals made by Germany, the Committee agreed to refer the two documents to the Ballast Water Review Group for detailed consideration.

Other information related to ballast water management and control

2.27 The Committee noted the information provided in document MEPC 57/INF.17 (Japan) on a ballast water sampling device currently developed in Japan and in document MEPC 57/INF.20 (FOEI) on a technical protocol for uniform analysis of ballast water samples to verify compliance with the discharge standards in the BWM Convention.

2.28 The Committee noted also the information provided by India in document MEPC 57/INF.24 on the International Conference on Bio-fouling and Ballast Water Management held from 5 to 7 February 2008, in Goa, India. The Conference was organized by the National Institute of Oceanography of India, in association with the Directorate General of Shipping of India, and the GEF-UNDP-IMO Global Ballast Water Management Programme.

2.29 The delegation of Jamaica expressed its appreciation for the assistance provided by the Organization to conduct, in co-operation with RAC-REMPEICT, the first GloBallast training workshop for the Caribbean region in Jamaica from 18 to 22 February 2008. As one of the lead partners in the GloBallast Project, Jamaica had benefited significantly from the workshop, which provided the necessary guidance for the establishment of the National Task Force and the National Action Plan for ballast water management and control.

2.30 During the review of the draft report of the Committee (MEPC 57/WP.10) the delegation of Barbados referred to the GloBallast project and noted that, although a contracting Government to the BWM Convention, it was not a lead partner in this project. The delegation of Barbados expressed its desire to be involved in the GloBallast project at a higher level.

Establishment of the Ballast Water Review Group

2.31 Having completed the consideration of all the documents submitted under this agenda item, the Committee agreed on the following terms of reference for the Ballast Water Review Group:

“Taking into consideration comments made in plenary, the Ballast Water Review Group is instructed to:

- .1 consider the revised draft Procedure for approval of ballast water management systems that make use of Active Substances (G9) based on the draft text provided by the Secretariat in document BLG 12/5 (Secretariat), taking into account comments made in document BLG 12/5/7 (United States), and develop an amended version of this Procedure for adoption by an MEPC resolution;

- .2 review the relationship between Procedure (G9) and Guidelines (G8), as outlined in paragraphs 7 and 8 of document MEPC 56/2/8 (United States), taking into account that from the GESAMP-BWWG's perspective, the data currently available from Type Approval testing may not be sufficient to validate manufacturer's claim regarding treatment concentrations and/or resultant potential ship and crew safety issues, since only discharge toxicity is evaluated in land-based tests (please refer to document MEPC 56/2/2, GESAMP-BWWG 3/9, section 5.4);
- .3 develop a Procedure for assessing "same levels of protection" of, and approval for, other methods of ballast water management under regulation B-3.7 of the BWM Convention, using document BLG 12/5/3 (United Kingdom) as a basis for the development of such a Procedure;
- .4 consider the changes to Guidelines (G8) proposed in documents BLG 12/5/9 (United States) and BLG 12/5/10 (Norway), MEPC 57/2/11 (Germany) and MEPC 57/2/12 (Norway) and advise the Committee accordingly;
- .5 further consider the Methodology for information gathering and the conduct work of the GESAMP-BWWG contained in annex 4 of document MEPC 57/2/10, and advise the Committee on how to address the recommendations made by the GESAMP-BWWG during its fourth and fifth meetings contained in action items 1-4 of document MEPC 57/2 and action item 1 of document MEPC 57/2/10;
- .6 provide additional comments and further guidance on the development of the Methodology as appropriate and consider possibilities of formalizing the above-mentioned methodology;
- .7 review, subject to time availability, the procedural aspects regarding the submission of proposals for approval of ballast water management systems that make use of Active Substances and, in particular, regarding the communication between GESAMP-BWWG and the applicants; and
- .8 develop draft terms of reference for the next meeting of the Ballast Water Review Group to be established during MEPC 58, taking into account resolution A.1005(25)."

Consideration of the report of the Ballast Water Review Group (BWRG)

2.32 Upon receipt of the report of the BWRG (MEPC 57/WP.5), the Committee approved it in general and took action as outlined in the following paragraphs.

Revision of the Procedure for approval of ballast water management systems that make use of Active Substances (G9)

2.33 Having considered document BLG 12/5 (Secretariat) containing the draft of a revised version of Procedure (G9), the Committee noted the issues raised by the United Kingdom with regard to Active Substances, confidentiality and the role of the Administrations, as well as the views of Norway, Germany and CEFIC on retroactivity.

2.34 The Committee considered the relevant action requested by the BWRG concerning the revised Procedure for approval of ballast water management systems that make use of Active Substances (G9).

2.35 With respect to the revised procedure, the Committee noted that it would be prudent and appropriate that certain time should elapse to enable administrations and industry alike to test and try the procedure before new proposals for amendments to it are considered and consequently agreed to allow at least two years before considering further amendments to this Procedure. The Committee also agreed to request the Secretariat to compile and collate comments and observations related to future amendments, with the view to facilitate this process.

2.36 Having agreed that in order to promote the use of the most up to date version of the Methodology for information gathering and the conduct of the work of the GESAMP-BWWG, developed by the Group based on Procedure (G9) and with the view to further formalize this Methodology, the Committee instructed the Secretariat to distribute the latest version of this document (MEPC 57/2/10, annex 4) through an IMO circular. In this respect the Committee decided to request the GESAMP-BWWG to replace the definitions of Basic Approval and Final Approval in their latest version of the Methodology with text that refers directly to the revised Procedure (G9);

2.37 After considering the proposals in document BLG 12/5/7 (United States) regarding the criteria to be used under the Procedure (G9) in determining when a Basic Approval granted to one ballast water management system may be applied to another system that uses the same Active Substance or Preparation, the Committee agreed that this matter needed to be further expanded within a Framework that could encompass all the aspects related to transferring an approval. The Committee felt that this would be useful for both the manufactures and Administrations in preparing an application based on the transfer of a Basic Approval, and its subsequent evaluation by the GESAMP-BWWG.

2.38 The Committee agreed to request Members and observers to provide their views on the Framework (MEPC 57/WP.5, annex 2) with regard to which criteria should be used in such a Framework to MEPC 58.

Review of the relationship between Procedure (G9) and Guidelines (G8)

2.39 Having noted the comments in paragraphs 7 and 8 of document MEPC 56/2/8 (United States) on the description of Basic Approval and Final Approval in the GESAMP-BWWG Methodology, the Committee agreed that these definitions needed to be changed to bring them in line with the revised Procedure (G9) and consequently requested the GESAMP-BWWG to make the necessary changes.

2.40 The Committee then considered the concerns of the GESAMP-BWWG regarding the appropriateness of the discharge toxicity data being submitted from the land-based toxicity tests during Type Approval under Guidelines (G8) to the Final Approval assessment by the GESAMP-BWWG under Procedure (G9) and the Group's request for analytical ballast water toxicity tests from the start, middle and end of the five day post treatment period.

2.41 The Committee agreed in principle with the GESAMP-BWWG request on the understanding that the Group would clarify in writing what they would require and how this information would be used.

Procedure for assessing “same levels of protection” of, and approval for, other methods of ballast water management under regulation B-3.7 of the BWM Convention

2.42 The Committee noted the comments regarding document BLG 12/5/3 (United Kingdom) and, although recognizing some potential for such alternative methods, agreed that a number of shortcomings, including transiting canals, natural barriers between distinct eco-regions or passing through harmful algal bloom areas needed to be further addressed.

2.43 In this respect, the Committee requested Members and observers to provide their views to BLG 13, to facilitate further development of the procedure, on the following aspects:

- the interpretation of regulation B-3.7 – whether it applies just to alternative technologies to those ballast water exchange methods recognized by the Organization, or applies to alternative technologies to all ballast water technologies;
- if this is limited to alternative technologies to those ballast water exchange methods recognized by the Organization, whether the Guidelines (G8) will be sufficient to type approve such technologies; and
- how flexible type approval systems can be developed for such technologies encompassing risk assessment.

Revision of Guidelines for approval of ballast water management systems (G8)

2.44 Having considered the comments of the BWRG with regard to documents BLG 12/5/9 (United States) and BLG 12/5/10 (Norway), MEPC 57/2/11 (Germany) and MEPC 57/2/12 (Norway), the Committee agreed, as an interim measure, to accept the changes proposed in document BLG 12/5/9 to ensure the appraisal of environmental toxicity during Type Approval as agreed at MEPC 56 and to invite Members and observers to submit their further contributions with a view to adopting the revised guidelines by an MEPC resolution at MEPC 58. The Committee also agreed with the changes proposed by Germany (MEPC 57/2/11) but could not agree with the changes proposed in document 57/2/12 (Norway), which were referred to the next meeting of the BWRG for further consideration (MEPC 57/WP.5, annex 3) with a view to adoption at MEPC 58.

2.45 With regard to the proposal by Norway in document BLG 12/5/10, the Committee requested the Secretariat to assess the logistical costs and timing implications of this proposal through liaison with GESAMP-BWWG, and invited the Administrations to submit any further views on this matter or any alternative methods of meeting the concerns raised by Norway. The Administrations were also invited to assess the full impact of this proposal on the availability of technology, the status and entry into force of the Convention and the ballast water management technology industry.

2.46 The delegation of India recalled that it had indicated right from the beginning in the deliberation of the Committee and the Diplomatic Conference that ship-based testing should be limited at most to practically possible assessments, as the biological effectiveness is rigorously tested through land-based testing. Meanwhile, the delegation of India believed that the procedure of land-based testing followed by Administrations should be as indicated in Guidelines (G8) and was of the view that it is important to have a mechanism for transparency in this regard and the conformity with Guidelines (G8) should be reflected in certificates provided by approved bodies

(e.g., Classification Societies) when seeking Final Approval from the Organization and subsequent type approval from the Administration. This, in India's view, would ensure that post-type approval contradictions would be avoided.

Methodology for information gathering and the conduct work of the GESAMP-BWWG

2.47 The Committee noted the intention of the GESAMP-BWWG to develop a questionnaire to collect information on the ballast water management system as a first stage in the development of a human exposure scenario and agreed in principle with this course of action with an understanding that the questionnaire would be submitted for detailed consideration at a future session.

Draft terms of reference for the Ballast Water Review Group to be established during MEPC 58

2.48 As requested by the Assembly at its twenty-fifth session, the Committee agreed to re-establish the Ballast Water Review Group during MEPC 58 to review the issue of a ship subject to regulation B-3.3 constructed in 2010 and the immediate availability of type-approved technology for such a ship to meet the D-2 standard. The Committee noted the preliminary Terms of Reference developed by the BWR.G.

2.49 In addressing the concern regarding the wording used in resolution A.1005(25) and in considering the preliminary Terms of Reference for the BWRG at MEPC 58 raised by the delegation of the United States, the Committee agreed to instruct the Secretariat to make the necessary changes to align the Terms of Reference with the wording in the resolution.

Action taken by the Committee

2.50 Having considered the comments made by the various delegations and the actions requested by the Review Group, the Committee agreed, in summary, to:

- .1 adopt the revised Procedure for approval of ballast water management systems that make use of Active Substances (G9) by resolution MEPC.169(57), as set out in annex 1;
- .2 avoid amendments to the revised Procedure (G9) within the next two-year period, unless absolutely necessary and requested the Secretariat to compile and collate future comments and observations related to such amendments with a view to facilitating this process;
- .3 instruct the Secretariat to distribute the most up-to-date version of the Methodology for information gathering and the conduct of the work of the GESAMP-BWWG, through an IMO circular;
- .4 request Members and observers to provide their views to BLG 13 on which criteria should be used to further develop the "Framework for determining when a Basic Approval granted to one ballast water management system may be applied to another system that uses the same Active Substance or Preparation";

- .5 request the GESAMP-BWWG to replace the definitions of Basic Approval and Final Approval in their Methodology with text that refers directly to the revised Procedure (G9);
- .6 request the GESAMP-BWWG to provide additional clarification on why analytic ballast water toxicity tests should be conducted immediately after treatment, at the middle, and at the end of the five-day period required in Guidelines (G8) and as to how this information will be used in the evaluation;
- .7 note the concerns expressed and difficulties encountered by the BWRG with regard to the development of a 'Procedure for assessing "same levels of protection" of, and approval for, other methods of ballast water management under regulation B-3.7 of the BWM Convention' and invited Members and observers to provide their views on how to further progress this matter to BLG 13;
- .8 request the Secretariat to assess the logistical cost and timing implications of the proposal in BLG 12/5/10 through liaison with GESAMP-BWWG and to inform the Committee accordingly and invited Administrations to submit any further views on this matter along with any alternative methods of meeting the concerns raised in the above-mentioned document at MEPC 58;
- .9 note the progress made by the BWRG in amending the Guidelines for approval of ballast water management systems (G8) and invited Members and observers to submit their further contributions with a view to adopting the revised guidelines by an MEPC resolution at MEPC 58;
- .10 allow, in principle, the GESAMP-BWWG to continue the development of the questionnaire on occupational exposure to help formulate a Human Exposure Scenario within the evaluation process of ballast water management system that makes use of Active Substances or Preparations and to submit it to the Committee for further consideration; and
- .11 re-establish the Ballast Water Review Group during MEPC 58 with the provisional Terms of Reference set out in annex 2.

3 RECYCLING OF SHIPS

3.1 The Committee recalled that at its fifty-sixth session it had approved the holding of a third intersessional meeting of the working group on ship recycling to further develop the draft convention. The third intersessional meeting was hosted by the Government of France in Nantes from 21 to 25 January 2008 under the chairmanship of Mr. Jens Henning Koefoed (Norway), and the report of the meeting had been submitted to the Committee as document MEPC 57/3.

PLANNING OF THE WORK

3.2 In planning its work, the Committee recognized that there were six broad areas of interest for this session, namely, consideration of the report of the intersessional working group and of the actions requested of the Committee; further proposals on the development of the text of the draft convention; consideration of a proposal for conditions for entry into force of the

convention; the diplomatic conference for the adoption of the convention; the work plan for the development of the convention and associated guidelines; and co-operation with relevant organizations and other issues. It was agreed to consider the six areas one by one.

CONSIDERATION OF THE REPORT OF THE INTERSESSIONAL WORKING GROUP ON SHIP RECYCLING AND OF THE ACTIONS REQUESTED OF THE COMMITTEE

3.3 The chairman of the intersessional working group, Mr. Jens Koefoed (Norway), introduced the group's report (MEPC 57/3). The terms of reference of the intersessional working group were to further develop the draft convention, aiming to reduce the square brackets in the text to the minimum possible by consensus or by clear majority. The Committee noted that to a large extent this had been achieved and the number of brackets had almost been halved.

3.4 The representative of IACS noted that there was no formal record in the group's report of its discussion on document MEPC-ISRWG 3/2/2 submitted by IACS, which, *inter alia*, discussed a "visual/sampling check plan". In that document, IACS had indicated that such a check plan was considered extremely useful for all parties involved in developing and verifying Part I of the Inventory of Hazardous Materials for existing ships. In particular IACS had proposed to amend regulation 5 of the draft convention to require the development of such plans.

3.5 The Committee agreed that this was an important issue which should be considered by the Working Group.

3.6 The Committee approved the report in general and, in particular (paragraphs and annexes are those of document MEPC 57/3):

- .1 noted the further development of the text of the draft convention (paragraphs 7 to 36 and annex 1) and requested that document MEPC-ISRWG 3/2/2 be forwarded to the working group for further consideration;
- .2 noted the advice requested of the Secretariat regarding whether the definition of "ship" in Article 2.9 includes a self elevating platform (jack-up rig) (paragraph 10);
- .3 noted the discussion on the issue of a compliance mechanism (provisions for audits of Parties in Article 13*bis*) (paragraph 15);
- .4 endorsed the request that the Technical Co-operation Committee provides its views to the Committee on mechanisms which could be developed through the Technical Co-operation Programme of the Organization to facilitate implementation of the standards contained in the convention in recycling yards in developing countries (paragraph 17); and
- .5 noted the discussion on the issue of recycling of ships to which the convention applies in facilities located in States which are not Party to the convention (paragraphs 26 to 31).

3.7 With regard to the matter referred to in paragraph 3.6.2 above, the Committee noted that it is not directly clear whether a self elevating platform should be considered as a fixed platform and thus excluded from the application of the ship recycling convention, or whether it should be considered as a floating platform and thus included in the application of the ship recycling

convention. Nevertheless, because the Code for the Construction and Equipment of Mobile Offshore Drilling Units treats self elevating platforms as mobile units, it was recognized that this added weight to considering them as floating platforms and therefore including them under the application of the ship recycling convention.

3.8 The Committee, whilst agreeing with the interpretation that self-elevating platforms could be considered as floating platforms, and therefore, within the scope of the convention, instructed the Working Group to make an explicit reference to self-elevating platforms in the definition of ship.

3.9 With regard to the matter referred to in paragraph 3.6.3 above, on the need for a compliance mechanism and the proposed provisions for audits of Parties in Article 13*bis* of the draft convention, the Committee noted that this was an issue on which the working group had been unable to agree so far and which needed to be resolved in a way that recognized the sovereignty of Member States and which also provided the necessary transparency in the implementation of the convention.

3.10 Greenpeace International and Friends of the Earth International, in their submission MEPC 57/3/7, proposed that the provisions of Article 13*bis* needed to be further strengthened by making the auditing scheme for both flag and recycling States mandatory, and by administering it by independent third parties.

3.11 The Committee discussed the issue extensively. The majority of the delegations who spoke were against the inclusion of Article 13*bis* in the draft convention, adducing that it contravenes the sovereignty of Member States and, therefore, may become a potentially serious impediment to the ratification of the convention. A number of other delegations, whilst appreciating the sovereignty concerns, stressed that further discussion was needed in the Working Group towards a voluntary scheme as an alternative.

3.12 The Committee agreed to delete Article 13*bis* in the draft convention and instructed the Working Group to continue its discussion for a viable voluntary auditing scheme.

3.13 With regard to the matter referred to in paragraph 3.6.4 above, the Committee invited the Technical Co-operation Committee to work on capacity building at national level. The Committee also invited the Technical Co-operation Committee to identify potential sources of funding for the mechanisms which could be developed to facilitate implementation of the standards contained in the convention.

3.14 With regard to the matter referred to in paragraph 3.6.5 above, on the recycling of ships flying the flag of Parties in facilities located in States which are not Party to the convention (the Party/non-Party provision) the Committee noted that this had been a difficult issue for the working group, who, having spent much time and effort, had not been able to reach agreement. In particular, the working group had felt that because of the political importance of this issue, the decision on whether or not to allow in the convention Party ships to use non-Party recycling facilities should be taken by the Committee.

3.15 The United States, in document MEPC 57/3/10, reiterated the reasons for which it had proposed to allow the recycling of ships flagged by a Party in conforming non-Party facilities and discussed concerns raised by Member States regarding the proposal as well as specific elements of bracketed text in regulation 7*bis* of the draft convention. Furthermore, the United States proposed edits to regulation 7*bis* to strengthen the Party/non-Party provision.

3.16 Canada, in document MEPC 57/3/12, proposed a compromise aiming to resolve the division over the Party/non-Party issue. Under this proposal, during a transitional period, Parties would ensure that non-Parties meet specified conditions and report to the Organization how they achieved this.

3.17 France, in document MEPC 57/3/17, expressed concerns about the introduction by the third intersessional working group of specific measures in the draft convention permitting ships flagged by a Party to be recycled in facilities of a non-Party, because this was a decision that exceeded the working group's mandate and had pre-empted the possible position of the Committee on the matter. Furthermore, France proposed that the work of MEPC 57 to develop the convention should be conducted on the basis of a draft text that includes neither regulations 8.3 and 8.4, nor regulation *7bis* and associated amendments.

3.18 Norway, in document MEPC 57/3/20, reiterated the rationale in its proposal for the introduction of regulation *7bis* in trying to strike a balance between mechanisms in the Party/non-Party provision which would encourage ratifications and still be practicable and effective to apply.

3.19 Greenpeace International and Friends of the Earth International, in their submission MEPC 57/3/7, strongly opposed the inclusion of the Party/non-Party provision in the convention, as they considered that this would create a multiplicity of possible loopholes and disincentives for countries to ratify or comply with the convention.

3.20 In the long and substantive discussion that followed, delegations who spoke agreed that the decision of the Committee should: encourage States to ratify the convention; avoid any disincentives for flag and recycling States to ratify the convention; and ensure sufficient recycling capacity at the entry into force of the convention.

3.21 Some delegations stressed their concerns over a possible violation of trade conventions of the World Trade Organization if the convention did not allow for Party/non-Party arrangements, whilst other delegations were confident that the ship recycling convention would be exempt by the relevant exceptions in the WTO instruments.

3.22 In the debate that ensued, a clear majority of the delegations were in favour of maintaining only Party to Party arrangements in the convention. Of these delegations, a significant number also supported the need for measures to address the adequacy of recycling capacity at the entry into force of the convention.

3.23 The Committee, therefore, instructed the Working Group to maintain only Party to Party provisions in the draft convention. The Committee further agreed to prepare a draft conference resolution addressing the adequacy of recycling capacity to be adopted by the diplomatic conference. Such a draft conference resolution could be drafted by a correspondence group, and the working group was instructed to prepare terms of reference for such a correspondence group. The United Kingdom offered to coordinate the work of the correspondence group if established. The Committee noted with appreciation the offer of the United Kingdom to coordinate the work of the correspondence group if established.

3.24 The Committee further agreed that such a conference resolution could be referenced in a footnote to the convention.

3.25 The Committee agreed that the revised text of the draft convention contained in annex 1 to document MEPC 57/3 should be used by the working group as a base document for the further development of the draft convention. Noting the progress towards the conference and in the spirit of co-operation, the Committee encouraged the working group to focus its work on the text of the draft convention, and to eliminate square brackets as far as possible.

FURTHER PROPOSALS ON THE DEVELOPMENT OF THE TEXT OF THE DRAFT CONVENTION

3.26 The Committee noted that a further eight documents containing comments and proposed changes to the draft text of the convention had been submitted. These documents were not introduced in plenary but instead the Working Group was instructed to discuss and to take them into account in further developing the text of the draft convention.

PROPOSAL FOR CONDITIONS FOR ENTRY INTO FORCE OF THE CONVENTION

3.27 Japan, in document MEPC 57/3/13, had proposed draft conditions for entry into force of the convention. The submission was referred to the Working Group for consideration with a view to providing advice to the Committee.

PROPOSED DIPLOMATIC CONFERENCE FOR THE ADOPTION OF THE INTERNATIONAL CONVENTION FOR THE SAFE AND ENVIRONMENTALLY SOUND RECYCLING OF SHIPS

3.28 The Committee recalled that, at its fifty-fifth session, it had requested the Council to consider the allocation of a five-day international conference on recycling of ships and budget in the 2008-2009 biennium to adopt the draft International Convention for the Safe and Environmentally Sound Recycling of Ships. The Council at its ninety-seventh session had approved the Committee's request for inclusion in the Secretary-General's relevant budget proposals. The Assembly at its twenty-fifth session, having noted that the budget for the diplomatic conference had already been approved and that MEPC 56 had approved a work plan for finalizing the draft convention, including the holding of the diplomatic conference in 2009, expressed appreciation to the offer of China to host the diplomatic conference in Hong Kong, China.

3.29 The Committee was informed that, further to subsequent discussions between the Secretariat and officials of Hong Kong, China, the diplomatic conference was planned to be held from 11 to 15 May 2009, subject to endorsement by Council at its 100th session in June 2008. It was also noted that the holding of the diplomatic conference would not incur any additional costs to the Organization as Hong Kong, China, had undertaken to cover any additional costs arising from its hosting of the Conference.

WORK PLAN FOR THE DEVELOPMENT OF THE DRAFT CONVENTION AND THE ASSOCIATED GUIDELINES

3.30 In its submission MEPC 57/3/6, Japan underlined the importance of completing the work on the Guidelines for Safe and Environmentally Sound Ship Recycling by the fifty-ninth session of MEPC, because of the strong link between these guidelines and the mandatory requirements of the convention for recycling facilities, and also because the early finalization of the guidelines would facilitate the voluntary implementation of the convention in the interim period between its adoption and its entry into force.

3.31 The Committee requested the Working Group to consider document MEPC 57/3/6 and to take it into account when revising the work plan up to the completion of the development of the draft convention and of the associated Guidelines for Safe and Environmentally Sound Ship Recycling.

3.32 Finally, the Committee agreed to await the report of the working group before deciding when to conduct an article-by-article and regulation-by-regulation review of the text of the draft convention in plenary.

CO-OPERATION WITH RELEVANT ORGANIZATIONS AND OTHER ISSUES

Joint ILO/IMO/BC Working Group on Ship Scrapping

3.33 The Committee recalled that the ILO observer had clarified, at its fifty-sixth session, that the Governing Body of ILO would take a decision at its meeting in November 2007 concerning hosting the third session of the Joint ILO/IMO/Basel Convention Working Group on Ship Scrapping.

3.34 The International Labour Office, in its submission MEPC 57/3/1, informed the Committee that its Governing Body had agreed to convene the third session of the Joint Working Group on Ship Scrapping in Geneva from 29 to 31 October 2008 and that the agenda of the third session was being discussed among the Secretariats concerned.

3.35 The Committee recalled that the IMO had been represented in the previous two meetings of the Joint Working Group by the following five Member States: Bangladesh, Japan, the Netherlands, Norway and the United States. The Committee agreed that the same five Member States should also represent IMO at the third session of the Joint Working Group. Other Member States, Intergovernmental Organizations and Non-governmental Organizations could also attend the meeting as observers.

Ongoing work by Parties to the Basel Convention

3.36 The Committee noted three submissions by the Basel Convention Secretariat (MEPC 57/3/3, MEPC 57/3/4 and MEPC 57/3/4/Add.1) on the role of the Basel Convention in respect of ship recycling; on the further steps that may be taken by the Conference of Parties to the Basel Convention in connection with the IMO convention; on its invitation to IMO to ensure that the convention establishes an equivalent level of control to that stipulated under the Basel Convention; and on the ongoing work by Parties to the Basel Convention comparing the levels of control established under the Basel Convention and the draft IMO convention.

Two planned trial ship recycling projects

3.37 The Committee noted with interest submissions by Japan (MEPC 57/3/6) and Turkey (MEPC 57/3/15), both on trial ship recycling projects intended to test the provisions of the convention and of associated guidelines. Following the completion of the pilot projects, both Member States intended to report to the Committee the findings of each project and any relevant proposals for amendments to the guidelines.

The National Workshop on Ship Recycling in India

3.38 The Committee noted document MEPC 57/3/5 (India), informing the Committee that the IMO-supported National Workshop on the Development of the International Convention for the Safe and Environmentally Sound Recycling of Ships, had been held from 7 to 10 January 2008 in Mumbai. The Workshop had involved international experts and stakeholders from the Indian ship recycling industry and government. Prior to the commencement of the Workshop the international experts had travelled to Alang where they had visited recycling yards and the Gujarat Maritime Board training centre, and had inspected facilities and equipment for the protection of health and safety of ship recycling workers and for the protection of the environment.

3.39 The Workshop had been particularly timely and successful and had achieved its objective to help stakeholders and policy makers form clear perspectives of their positions in relation to the draft IMO convention. The mission had concluded that there were no serious impediments to India ratifying the new convention as it had become apparent that India had already decided to regulate its ship recycling industry with national mandatory requirements which were consistent to those being developed by IMO.

The ISO work programme on ship recycling

3.40 Japan presented document MEPC 57/3/14, on the overlap between the activities of IMO towards the development of the convention and its guidelines and the ISO standards for recycling facilities. Japan proposed that the Committee should instruct the IMO Secretariat to strengthen its liaison with ISO on the subject of ship recycling.

3.41 The International Organization for Standardization (ISO) introduced document MEPC 57/3/2, outlining the status of its work programme on the ISO 30000 series on ship recycling, and invited the Committee to take into account the future developments and outcomes of ISO in support of the development of the IMO mandatory convention and guidelines on ship recycling.

3.42 A large number of Member States shared the concerns expressed by Japan over the possible existence of two standards which might confuse stakeholders, highlighting that the convention and its guidelines should be the primary instrument on issues related to ship recycling.

3.43 The Committee agreed to instruct the Secretariat to continue its liaison with ISO with a view to obtaining the information described in paragraph 18 of document MEPC 57/3/14 and making it available to the Committee for action as appropriate.

ESTABLISHMENT OF THE WORKING GROUP

3.44 The Committee agreed to establish the Working Group on Ship Recycling under the chairmanship of Mr. Jens Koefoed (Norway) with the following Terms of Reference:

“Taking into consideration submissions by Members, comments made as well as the decisions made in the plenary, the Working Group on Ship Recycling is instructed to:

- .1 complete the review of the text of the draft International Convention for the Safe and Environmentally Sound Recycling of Ships, which was commenced at the third intersessional ship recycling working group;
- .2 further develop the text of the draft convention taking into account proposals in documents MEPC 57/3/8 (United States); MEPC 57/3/9 (United States); MEPC 57/3/11 (Belgium and France); MEPC 57/3/16 (India); MEPC 57/3/19 (Norway); MEPC 57/3/21 (Denmark and France); MEPC 57/3/7 (Greenpeace International and Friends of the Earth International, on the issues of the substitution principle and the ship recycling fund); and MEPC 57/3/18 (ICS, IPTA, INTERCARGO, INTERTANKO, and OCIMF);
- .3 further develop the text of the draft convention, in line with the decision taken by the plenary while discussing documents MEPC 57/3/10 (United States); MEPC 57/3/12 (Canada); MEPC 57/3/17 (France); MEPC 57/3/20 (Norway); and MEPC 57/3/7 (by Greenpeace International and Friends of the Earth International);
- .4 provide advice on the draft conditions for entry into force of the convention proposed in document MEPC 57/3/13; and
- .5 revise the work plan for the development of the draft convention and the associated Guidelines for Safe and Environmentally Sound Ship Recycling taking into account any comments made during plenary and proposals in document MEPC 57/3/6 (Japan).

REPORT OF THE WORKING GROUP ON SHIP RECYCLING

3.45 As instructed by the Committee, the Working Group had used document MEPC 57/3 (report of the intersessional working group) as a basis of its consideration, taking into account comments made and decisions taken during plenary and proposals in relevant documents. The outcome of the working group's discussion on the text of the draft Convention was contained in annex 1 to the group's report (MEPC 57/WP.6), which the Committee was invited to note as a basis for the further development of the draft convention.

DELIBERATIONS WITHIN THE WORKING GROUP

3.46 The Committee noted that the group had agreed to replace the terms "ships that fall within the scope of this Convention" in regulation 17.1 with the more explicit terminology "ships to which the Convention applies, or ships treated similarly pursuant to Article 3.4". The group had also made similar and consequential amendments to Article 6, regulation 18 and the Supplement of Appendix 5.

3.47 The Committee was informed that France and Belgium had reminded the group of their joint submission to the third intersessional working group on ship recycling where it had been proposed that, in addition to adopting the above clearer terminology, the Convention should also make reference to a new set of guidelines addressing the level of conformity to be expected from non-Party flagged ships under the no-more favourable treatment clause in Article 3.4. The group had agreed that this could be the subject for a resolution by the diplomatic conference.

3.48 The Committee noted that the working group had been informed that the Sub-Committee on Ship Design and Equipment, at its fifty-first session in February 2008, had agreed to draft amendments to SOLAS regulation II-1/3-5.2 intended to prohibit all new installation of asbestos onboard ships without exceptions. The draft amendment had been submitted to the eighty-fourth session of the Maritime Safety Committee for approval, with a view to adoption at its eighty-fifth session, in December 2008. The earliest possible date this amendment could enter into force would therefore be July 2010. Therefore, the group had agreed to amend Appendix 1 of the draft Convention by removing all exceptions to new installations of asbestos on board ships. The Committee agreed to the group's request for the Committee to instruct the Secretariat to bring this issue to the attention of the diplomatic Conference, if the Maritime Safety Committee alters or does not adopt the amendments to SOLAS regulation II-1/3-5.2.

3.49 The Committee concurred with the group's agreement to a number of amendments in the draft text of the convention designed to bring the survey and certification provisions in line with the Harmonized System of Survey and Certification of the Organization. In essence, periodic surveys had been replaced by renewal surveys and the periodic endorsement of certificates had been replaced by the renewal of certificates.

3.50 The Committee noted with interest that the group, being aware that it will become mandatory under SOLAS from 1 January 2009 for all companies owning or managing ships to be issued with an IMO identification number (resolution MSC.194(80)), it had agreed to require data on the IMO registered owner identification number and on the IMO company identification number in the form for the International Certificate on Inventory of Hazardous Materials (Appendix 3 to the Annex to the convention) and in the form of the International Ready for Recycling Certificate (Appendix 4 to the Annex to the convention). The reason the group had required the company information on the certificates was in order to resolve the longstanding request by delegations to bring under the convention information on ownership contained in the commercial sale contract for recycling.

3.51 The Committee noted that the group, as instructed by plenary, had deleted Articles 13*bis*, 7.2, and 12.1*bis* and regulations 7*bis* and 8.2 (second option). Furthermore the group had included self-elevating platforms in the definition of ship in Article 2.9 of the draft convention.

3.52 On the subject of certification under the convention, the Committee noted that the group had agreed that, when issued, the International Ready for Recycling Certificate should not replace the International Certificate on Inventory of Hazardous Materials, that it should have a maximum validity of three months, and that the Certificate may be extended by the Administration, or by any person or organization authorized by it, for a single point to point voyage to the Ship Recycling Facility.

3.53 Also, as instructed by plenary, the group had reconsidered document MEPC-ISRWG 3/2/2 by IACS, and had agreed to amend regulation 5 to require the preparation of a "visual/sampling check plan". The group, however, had been unable to reach agreement on the proposed introduction of a column in Appendix 2 containing "threshold values and exemptions". While there was much support for the proposal by IACS, the majority of the group, recognizing the great difficulty in attempting to provide such figures at the present time and also recalling that it is intended to provide threshold values in the relevant guidelines, had decided not to take forward this proposal at this meeting.

3.54 The Committee noted that the group had considered the submission by Norway (MEPC 57/3/19) proposing to include three more Hazardous Materials in Appendices 1 and 2 of the Annex to the draft convention. The same proposal had been discussed by the 3rd Intersessional Working Group on Ship Recycling. While the group had been divided over the inclusion of two or three of the substances proposed by Norway, the group had finally decided against the inclusion of any new entries in Appendices 1 and 2. Some delegations had felt particularly that such decisions should best be taken by experts under the provisions of regulations 6 and 7 of the Annex to the draft convention.

3.55 In that connection, the Committee instructed the Secretariat to liaise with the Secretariat of the Stockholm Convention on Persistent Organic Pollutants and to report to MEPC 58 on the status of that Convention's consideration of the three substances which had been proposed by Norway for inclusion in Appendices 1 and 2 of the Annex to the draft convention.

3.56 The Committee, having agreed to prepare a draft Conference resolution addressing the adequacy of recycling capacity and having also agreed that such a draft Conference resolution should be drafted by a correspondence group, instructed the working group to prepare terms of reference for the correspondence group. The terms of reference for the correspondence group, as agreed by the Committee, are as follows:

- .1 the correspondence group¹ is instructed to prepare a draft resolution for the diplomatic Conference to address the circumstances in which sufficient recycling capacity may not be available both before and following entry into force of the Convention, taking into account the decisions made at MEPC 57;
- .2 the draft resolution should encourage States to ratify the Convention at the earliest opportunity, and should address disincentives for flag and recycling States to ratify the Convention;
- .3 the draft resolution should not conflict with the requirements of the Convention itself, and should not require any amendments to the text of the Convention as drafted;
- .4 the correspondence group should also consider the draft resolution in the context of the entry into force provisions; and
- .5 the correspondence group should report the outcome of its deliberations to MEPC 58.

3.57 The Committee noted that the group had agreed to the proposal by the United States (MEPC 57/3/8) to simplify the format of Appendix 5 of the Annex to the draft convention,

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subject to certain modifications. The group however had been unable to complete this work at this session and the latter part of Appendix 5 remained within square brackets.

3.58 During the course of discussion, India had suggested, in document MEPC 57/3/16, that there may be a need to address situations in which a ship is sold to a “Cash Buyer” where the ship is no longer flying the flag of a particular State for a limited period immediately prior to delivery to the recycling facility. The delegation of Norway had invited the group’s attention to annex 3 of document MEPC 57/3, where two proposals were offered as possible means of addressing the concern identified by India by prohibiting de-registration until the ship is delivered to a recycling facility.

3.59 The Committee noted that the matter was addressed to some extent by the last part of the definition of “shipowner” in regulation 1 which stated that the term includes “those who have ownership of the ship for a limited period pending its sale or handing over of a ship to a recycling facility”. In this regard, it had been suggested that it might be necessary to review the provisions where a shipowner had a duty to communicate with the Administration (i.e. flag State) to determine whether this might need to be under the remit of the competent Authority of the recycling State when the ship to be recycled was without a flag. The group had also noted that issues relating to registration and de-registration of ships could be complex, and it would not be possible to develop a simple provision in the draft convention to address the full range of possible situations. Furthermore the group had decided that it was not necessary to have any special provisions in the draft convention to address cash buyers but it had been finally agreed to review the issue at the intersessional working group.

3.60 The Committee noted that the group had discussed submissions MEPC 57/3/21 by Denmark and France and MEPC 57/3/18 by ICS and other NGOs addressing regulations 9 and 25. There had been support for the concepts in the documents but not sufficient to lead to agreed changes to the text of the draft convention. It had been agreed however that the issue was important and should be subject to further debate by the intersessional working group.

3.61 The Committee was advised that Greenpeace International and Friends of the Earth International had introduced the two issues of document MEPC 57/3/7 which had not been introduced in plenary. The proposal to strengthen the substitution principle had been rejected by the working group as delegates had considered that this was already covered by regulations 6 and 7 of the draft Annex to the convention. Greenpeace International had made it clear that its proposal for an economic mechanism for internalizing costs for safe and environmentally sound ship recycling was not covered by Article 13 on Technical assistance and co-operation. The group had suggested that Greenpeace International and Friends of the Earth International might consider submitting a more detailed proposal for such a funding mechanism to a future session of the Committee.

Draft conditions for entry into force

3.62 The Committee had requested the working group to provide advice on the draft conditions for entry into force which had been proposed by Japan in document MEPC 57/3/13. Japan had proposed a formulation for the entry into force Article which would require a minimum number of States, a tonnage threshold, and a factor based on the ratio of ship recycling capacity to the combined tonnage of merchant shipping. In the time available the Group had been unable to discuss this proposal, but it had recognized that this question might relate to some extent to the work of the correspondence group. The representative of the Legal Office had explained that there was no problem in principle in having recycling capacity as an element in

the entry into force provisions but that, nevertheless, it would be necessary to have clarity and precision on how the recycling capacity was to be objectively determined by the depositary.

Development of a work plan

3.63 The Committee agreed to the group's advice that there is a strong need for holding an intersessional meeting of the Working Group on Ship Recycling the week before MEPC 58 of four day duration, in order to help the finalization of the draft text of the Convention in good time to be circulated for the diplomatic conference planned for May 2009.

3.64 The Committee also agreed to the draft Terms of Reference prepared by the working group for the proposed Intersessional Working Group, as set out below:

“On the basis of the outcome of MEPC 57 and taking into account any relevant documents submitted to MEPC 58, the fourth Intersessional Working Group on Ship Recycling is instructed to:

- .1 consider and resolve any outstanding issues and corresponding text of the draft convention;
- .2 consider document MEPC 57/3/13 by Japan;
- .3 prepare a final version of the draft convention for an Article-by-Article and regulation-by-regulation review by MEPC 58; and
- .4 submit a written report to MEPC 58.”

3.65 The Committee then revised the work plan for the development of the convention, which had been developed by the working group taking into account the progress made at the fifty-seventh session of the Committee, the Organization's general work plan, and the proposal by Japan in document MEPC 57/3/6. Following discussion the Committee approved the work plan as shown below:

| | | |
|-----------------------|--------------------------------------|--|
| Correspondence Group | April-August 2008 | Prepare draft conference resolution for addressing the circumstances in which sufficient recycling capacity may not be available. |
| Council C 100 | June 2008 | Endorse date for diplomatic conference. |
| 4 ISRWG | 30 September-3 October 2008 | Resolve outstanding issues and prepare final version of the draft convention. |
| MEPC 58 DG | 6-10 October 2008 | Article-by-Article and regulation-by-regulation review of the draft Convention; Finalize the draft convention; Circulate the draft convention for the diplomatic conference. |
| Diplomatic Conference | [11-15 May 2009 Hong Kong, China] | Adoption of the International Convention for the Safe and Environmentally Sound Recycling of Ships. |
| MEPC 59 | [July 2009] | Consideration of the draft Guidelines for Safe and Environmentally Sound Ship Recycling for adoption. |

3.66 The delegation of Turkey stated that its position regarding UNCLOS is well known and remains unchanged within the context of the International Convention for the Safe and Environmentally Sound Recycling of Ships.

3.67 The delegation of the United States made a statement, as set out in annex 3. The delegations of Bangladesh, the Marshall Islands and the Russian Federation associated themselves with the statement.

4 PREVENTION OF AIR POLLUTION FROM SHIPS

4.1 The Committee noted that this agenda item concerned two major issues: review of MARPOL Annex VI and the NO_x Technical Code; and control of greenhouse gas emissions from ships. The Committee agreed to first consider the review of MARPOL Annex VI as well as other air pollution issues, and then greenhouse gas matters.

REVIEW OF MARPOL ANNEX VI AND THE NO_x TECHNICAL CODE

4.2 The Committee recalled that MEPC 56 had included the outcome of BLG 12 on the review of MARPOL Annex VI and the NO_x Technical Code as an urgent matter emanating from a subsidiary body meeting which took place less than 13 weeks before MEPC 57, in accordance with paragraph 4.9 of the Committees' Guidelines.

4.3 To provide members with the possibility to comment on the outcome of BLG 12 on the review of MARPOL Annex VI and the NO_x Technical Code, the Secretariat and the Chairman, in accordance with paragraph 4.12 of the Committee's Guidelines, had consulted on the matter and had agreed on a relaxed deadline by two weeks for submitting documents commenting on the report from BLG 12 on this issue. The Committee agreed that these documents would be considered along with the other documents.

4.4 Following a proposal by the Chairman, the Committee agreed to consider the air pollution matters in the following order:

- .1 outcome of the informal Cross Government/Industry Scientific Group of Experts;
- .2 outcome of BLG 12 on the review of MARPOL Annex VI and the NO_x Technical Code;
- .3 options for reduction of SO_x and PM;
- .4 NO_x regulations for existing engines;
- .5 fuel oil specification;
- .6 report on long term availability of halons; and
- .7 re-establishing the Working Group on Air Pollution.

4.5 The Committee agreed that, due to the large number of submitted documents (more than 60) under this agenda item, only basic documents should be briefly introduced in plenary while the remaining documents would be forwarded to the working group for consideration. The

discussion in plenary should be aimed at giving instructions to the working group, and not considering technical details.

4.6 The Committee also agreed that matters related to the revision of the NO_x Technical Code and proposed amendments to resolution MEPC.130(53) – Guidelines for on-board exhaust gas cleaning systems, including finalization of the washwater discharge criteria for such systems, should not be considered by the plenary but that they should be referred to the working group.

4.7 The Committee further agreed that the following documents should be only introduced in the Working Group on MARPOL Annex VI and the NO_x Technical Code:

| | | |
|--------------|--|---|
| MEPC 57/4/1 | Secretariat | Amendments to the Guidelines for On-board Exhaust Gas Cleaning Systems and development of Washwater Discharge Criteria for such systems |
| MEPC 57/4/13 | Japan | Study related to reduction of SO _x emissions |
| MEPC 57/4/14 | China | Comments on the report on the outcome of the informal Cross Government/Industry Scientific Group of Experts |
| MEPC 57/4/15 | FOEI | Avoided global premature mortality resulting from reduction of sulphur in marine fuel |
| MEPC 57/4/16 | INTERTANKO | MARPOL Annex VI – related matters |
| MEPC 57/4/20 | Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, the Russian Federation and Sweden | A need to further address SO _x emissions from shipping |
| MEPC 57/4/24 | Secretariat | Sulphur monitoring for 2007 |
| MEPC 57/4/25 | OCIMF | Commentary on the possible outcomes of MARPOL Annex VI review |
| MEPC 57/4/26 | IPIECA | The Annex VI revision process: a statement from refiners on proposed changes to the marine fuel supply chain |
| MEPC 57/4/28 | ICS | The revision of MARPOL Annex VI |
| MEPC 57/4/32 | Marshall Islands | Comments on the outcome of BLG 12 |
| MEPC 57/4/34 | ITF | MARPOL Annex VI-related matters |

| | | |
|--------------|----------------|---|
| MEPC 57/4/35 | IBIA | Comment on the outcome of BLG 12 on the review of MARPOL Annex VI and the NO _x Technical Code |
| MEPC 57/4/36 | BIMCO | Comment on the outcome of BLG 12 on the review of MARPOL Annex VI and the NO _x Technical Code |
| MEPC 57/4/39 | FOEI | Comments on BLG 12 and Options for SO _x Reductions from Shipping |
| MEPC 57/4/40 | FOEI | Comments on the outcome of BLG 12 on the review of MARPOL Annex VI and the NO _x Technical Code |
| MEPC 57/4/42 | United Kingdom | Comments on the options identified by BLG 12 relating to the review of MARPOL Annex VI and the NO _x Technical Code |
| MEPC 57/4/43 | EUROMOT | Comments on the outcome of BLG 12 on the proposal for an alternative procedure for certification of serially produced engines |
| MEPC 57/4/44 | EUROMOT | Proposal for an alternative procedure for certification of serially produced engines |
| MEPC 57/4/46 | Denmark | Comments to new NO _x emission limits |
| MEPC 57/4/48 | IPIECA | The Annex VI revision process: comment on MEPC 57/4/23 |
| MEPC 57/4/49 | INTERTANKO | MARPOL Annex VI – related matters revision of MARPOL Annex VI |

Statement by Brazil

4.8 The delegation of Brazil drew the attention of the Committee to its concerns expressed at BLG 12 regarding the possible solutions to tackle air pollution from ships (BLG 12/17, paragraph 6.5). Brazil agreed with the setting of targets for stricter reduction of air pollutants in a “phased-in” manner. Although recognizing the importance of the subject and the enormous challenge facing the maritime industry for a speedy adoption of amendments to MARPOL Annex VI and related instruments, Brazil expressed the view that IMO should adopt solutions for which technology was readily available. In this respect, and in order to avoid setting an unrealistic timetable for compliance with stringent standards, as was the case with the Ballast Water Management Convention, Brazil recommended that, before any timeframe was agreed, provision should be made for a formal review of the availability of technologies and equipment and for the market capacity to provide such technology. Points to bear in mind also included cost-efficiency, timing for installation and capacity for compliant fuel supply. Sufficient time should also be given for the maritime industry to adapt to the new restrictive emission limits and new technologies to meet such limits. Brazil reiterated its commitment to the Organization's objectives and affirmed its belief that any target dates for emission limits should be practical,

achievable and significantly beneficial to the environment. The delegation of Saudi Arabia associated itself with the statement by Brazil.

Statement by the European Commission

4.9 The observer of the European Commission reiterated the Commission's strong preference for global solutions, as may be agreed by IMO, with the objective of reducing air pollution and greenhouse gas emissions from ships. On both issues the Commission had always clearly indicated that it would await IMO action, in accordance with the timelines already established by the Organization, for the necessary global mandatory measures to be developed and adopted. The European Commission was, therefore, fully in line with IMO on the work being carried out and, while significant progress needed to be made during 2008, its position had not changed. However, should it not be possible for the Organization to maintain the established timelines, the Commission retained the right to initiate appropriate action to protect the environment.

Statement by IAPH

4.10 The IAPH observer reminded the Committee of its information document (MEPC 56/INF.13) regarding practical and effective measures for ports to create a clean air environment in their areas of control. The document provided information on the development of guidance for such measures which would be included in a so-called "Tool Box for Port Clean Air Programs". At the time of the statement during MEPC 56 it was expected that the Tool Box would be ready for presentation in the autumn of 2007. Unfortunately the development had taken up more efforts and more time than IAPH would have wished and no document could be submitted to this session of the Committee. However, the hard work of participating ports around the world had enabled the on line version of the Tool Box to be available as of 1 April 2008 with the following web address: www.iaphworldports.org.

Information documents

4.11 The Committee noted the following information documents:

- .1 MEPC 57/INF.5 (Sweden) providing information about a study on emission trading for sulphur and nitrogen oxides conducted in Sweden on request of the Swedish Government;
- .2 MEPC 57/INF.6 (Secretariat) containing the basis and input from the four subgroups for the final report by the informal Cross Government/Industry Scientific Group of Experts which had been published as document MEPC 57/4;
- .3 MEPC 57/INF.7 (Secretariat) providing a report commissioned by the informal Cross Government/Industry Scientific Group of Experts on the analysis of impacts on global refining and CO₂ emissions of potential regulatory scenarios for international marine bunker fuel; and
- .4 MEPC 57/INF.14 (Denmark, Estonia, Finland, Germany, Lithuania, Latvia, Poland, the Russian Federation and Sweden) providing information on emissions of NO_x from shipping in the Baltic Sea and estimation of NO_x emissions according to the proposed Tier II and Tier III regulations for new engines.

Outcome of the Informal Cross Government/industry Scientific Group of Experts

4.12 The Committee recalled that the Secretary-General, at the last session, had proposed the setting up of an informal Cross Government/Industry Scientific Group of Experts to undertake a comprehensive study to evaluate the effects of the different fuel options proposed under the review process of MARPOL Annex VI.

4.13 The Committee recalled also that there was overwhelming support for the initiative and that MEPC 56 had endorsed the course of action proposed by the Secretary-General to establish the informal Cross Government/Industry Scientific Group of Experts and the proposed Terms of Reference for the Group. MEPC 56 had also approved a relaxed deadline for submission of the Scientific Group of Experts' report to both BLG 12 and MEPC 56.

4.14 The Committee welcomed the report of the informal Cross Government/Industry Scientific Group of Experts (MEPC 57/4), established following an initiative by the Secretary-General to undertake a comprehensive study to evaluate the effects of the different fuel options proposed under the revision of MARPOL Annex VI and the NO_x Technical Code. The Committee thanked the experts nominated to the Group by Member States and organizations in consultative status who served the Group in their personal capacity.

4.15 The Committee expressed sincere appreciation to all the Member States and international organizations that had contributed financially towards the work of the Scientific Group of Experts as specified in paragraph 4 of document MEPC 57/4.

4.16 The Committee noted that the following corrections should be made to document MEPC 57/4:

- .1 Paragraph 61: The table should be replaced with the table below:

2020 Scenarios (Ensys WORLD model). Incremental cost vs. base case 2020

| Options | USD/bbl* | USD/ton* | Affected quantity (mill ton) | Increase vs. base case (mill USD/year) |
|-----------------|-----------------|-----------------|-------------------------------------|---|
| Option C | 12.97 | 87 | 460 | 40,042 |
| Option B2 (DMB) | 2.54 | 17 | 480 | 8,325 |
| Option B2 (DMA) | 2.67 | 18 | 479 | 8,751 |

*Marine fuels global average cost

- .2 The Note below the table should be replaced by the Note below:

“Note: Option C data has been derived from the EnSys work using a correction factor – see paragraph 102. Data for options B and B1 could not be derived the EnSys study for IMO.”

- .3 Paragraph 91: The title “International Energy Agency” should be replaced with “United States Energy Information Administration”.
- .4 Paragraph 102: the last sentence should be replaced by: “The Tables below reflect this corrected data”.

4.17 In his introduction, the Group of Experts' Chairman, Mr. Mike Hunter (United Kingdom), emphasized that the Group was grateful to Member States and organizations in consultative status that donated funds to make the study possible. The work was divided between four subgroups specializing in shipping, fuel supply, health and environment and computer-based modelling, with expert subgroup leaders volunteering to co-ordinate the work, participation in the subgroups was open to all regardless of the area of their expertise. The Group included a wide variety of expertise; and individuals with expertise in one area could not necessarily validate work in another; the Scientific Group quickly realized that any attempt to quantitatively evaluate the repercussions of the options required some significant assumptions such as future growth in shipping, trends in crude oil prices, applications for SECAs and so on; for this reason, the report of the group should be seen as providing a set of calculations to assist MEPC 57 to reach conclusions having taken into account the uncertainties and assumptions involved; the report does not make any recommendations.

4.18 The Committee noted the following clarifications related to document MEPC 57/4:

- .1 paragraph 86: The assumption that abatement equipment would achieve a 10% market penetration has been applied specifically to the environmental impact analysis of only those options that permit the abatement alternative (paragraph 132 and following);
- .2 paragraph 90.5: The model was run using requirements for marine diesel oil quality (DMB) that are more stringent than the current ISO 8217 specifications for this product, but reflecting actual average quality of DMB on the market. The Group later realised that the required refinery investments and projected increase in emissions in case of a global change to distillates were higher than would be expected if marine diesel were produced closer to the ISO 8217 specification requirements. The model results have been manually corrected to reflect this, as described more fully in paragraph 102, though such fuel may not meet the "clear and bright" specification included in the original option C proposal; and
- .3 paragraphs 105 and 106 deal with changes to refinery CO₂ emissions, noting that these must be seen in combination with changes in ship CO₂ emissions as presented earlier in paragraphs 16 and 33, and consequential impacts in paragraphs 149 and 150.

4.19 The Committee agreed that the report of the informal Cross Government/Industry Scientific Group of Experts contained a considerable volume of information that would enable the Committee to conclude its deliberations on what future regulations may be most appropriate for adoption in the amended Annex VI. The Committee noted that further information could be found in the two information documents providing background material to the final report, MEPC 57/INF.6 and MEPC 57/INF.7.

4.20 The Committee approved the report in general and expressed appreciation to the Group for the comprehensive work undertaken within the very limited time available and the professionalism the Group had exercised in its undertaking. The Committee expressed in particular appreciation to the Chairman, Mr. Mike Hunter, and the four sub-group leaders, Ms. Gillian Reynolds (Health and Environment), Mr. Eddy van Bouwel (Fuel Supply), Mr. Niels-Bjørn Mortensen (Shipping) and Mr. Koichi Yoshida (Computer-Based Modelling).

4.21 The Secretary-General thanked the Group collectively and individually and, in particular, its chairman and the leaders of the subgroups, for their dedication and hard work. He went on and thanked the donors listed in paragraph 4 of document MEPC 57/4 for their kind contributions enabling the Group to undertake its comprehensive work. The Secretary-General informed the Committee that the balance described in paragraph 5 of the above-mentioned document would be utilized for the update of the 2000 IMO GHG Study.

Outcome of BLG 12 on the review of MARPOL Annex VI and the NO_x Technical Code

4.22 The Committee noted that MARPOL Annex VI, regulations for the Prevention of Air Pollution from Ships, as at 29 February 2008, had 48 Parties, representing approximately 74.73% of the gross tonnage of the world's merchant shipping fleet.

4.23 The Committee recalled that MEPC 53 had agreed that MARPOL Annex VI should undergo a general revision and that the task was placed on the work programme of the BLG Sub-Committee with a view to significantly reduce air pollution from ships in the shortest possible time.

4.24 The Committee recalled also that MEPC 56 had approved a revised time table to complete the review of MARPOL Annex VI and the NO_x Technical Code with a view to adoption at MEPC 58 in October this year.

4.25 The Committee noted that BLG 12 had completed its tasks and that, in accordance with the decision of MEPC 56 (MEPC 56/23, paragraph 4.18), the outcome of BLG 12 on the review of MARPOL Annex VI and the NO_x Technical Code had been reported in summary form in document MEPC 57/4/23 and the full report of BLG 12 could be found in document BLG 12/17.

4.26 The Committee considered the report on the outcome of BLG 12 in document MEPC 57/4/23, approved the report in general and noted that BLG 12 had completed the technical aspects of the review of MARPOL Annex VI and the NO_x Technical Code and had finalized a draft text for the two instruments and forwarded them to the Committee for consideration with a view to adoption at MEPC 58. The Committee noted in particular that BLG 12 had:

- .1 agreed that the current structure of MARPOL Annex VI should be maintained;
- .2 agreed on future Tier II and Tier III NO_x standards for new engines installed on ships constructed on or after 1 January 2011 and 1 January 2016, respectively;
- .3 developed two different draft options for possible NO_x regulations for existing (pre-2000) engines, although it was recognized that there also was an option not to include NO_x standards for existing engines in the amended MARPOL Annex VI;
- .4 agreed that PM would be included in the scope of the amended Annex VI, so no explicit PM limits should be introduced in the amended MARPOL Annex VI at this time, as PM emissions would be reduced as a function of reducing sulphur emissions;

- .5 agreed that the three options identified for reduction of SO_x and PM emissions represented an equitable and fair compression of the different concepts and proposals under consideration by the Organization;
- .6 agreed to recommend to the Committee to approach ISO inviting them to develop a draft fuel oil specification where also parameters related to air quality and ship safety were included;
- .7 finalized draft text to amend the NO_x Technical Code and that the Secretariat had compiled the agreed amendments in a clean draft in document MEPC 57/4/23/Add.1 for consideration with a view to adoption at MEPC 58;
- .8 finalized proposed draft amendments to the revised guidelines for exhaust gas cleaning systems as well as washwater discharge criteria for such systems and agreed to forward the proposed draft amendments to the Committee for consideration with a view to adoption;
- .9 could not recommend introducing market-based instrument in the revised MARPOL Annex VI;
- .10 identified the non-mandatory instruments, such as guidelines and circulars, that needed to be developed or updated as a consequence of the amendments to MARPOL Annex VI and the NO_x Technical Code;
- .11 agreed on a draft procedure to verify sulphur content in fuel and that this procedure could also be used as guidance in the interim period before the amendments enter into force; and
- .12 considered the draft guidelines for the development of a VOC management plan.

4.27 With regard to the revised guidelines for exhaust gas cleaning systems and, in particular, the developed washwater discharge criteria for such systems, Greece expressed strong concerns and argued that this criteria should not be decided without input from GESAMP.

4.28 The Committee agreed that the working group should consider the washwater discharge criteria further and, if it was decided that the draft proposed discharge criteria should be interim, GESAMP would be involved in the process to make the criteria permanent.

Monitoring the worldwide average of sulphur content of residual fuel

4.29 The Committee noted the information on sulphur monitoring for the year 2007 in document MEPC 57/4/24. The average sulphur level in residual fuel oil for 2007 was 2.42% representing a reduction of 0.17 percentage points from the previous year, 2006 when it was 2.59%. It was noted that the explanation for this decrease may be the entering into force of the Baltic and North Sea SECAs and not that the actual global sulphur content has actually gone down. The average sulphur content had been calculated on the basis of the number of samples tested and not the actual quantity of fuel oil bunkered. As the bunkered quantity per bunkering had decreased, the explanation may be that ships took on board smaller quantities of low-sulphur fuel oil for consumption within the SECAs. The increase in low sulphur samples may indicate that low-sulphur fuel oil is tested more frequently to secure compliance. Both these factors may lead to an increased number of low sulphur samples and thereby a lower average sulphur level in the Sulphur Monitoring Programme than the actual global sulphur level.

Options for reduction of SO_x and PM emissions

4.30 The Committee considered the three options identified by BLG 12, as described in paragraph 34 of document MEPC 57/4/23. The Committee noted that BLG 12 had agreed that the three options represented an equitable and fair condensation of the concepts and proposals under consideration by the Organization and that they would constitute an appropriate basis for framing the discussion of this important issue by the Committee. It was agreed that the respective implementation dates, sulphur levels, and concepts outlined in the three options would all be subject to debate and modification and that nothing precluded the development of a hybrid solution.

4.31 The Committee considered document MEPC 57/4/29 (ICS and BIMCO), providing a draft proposed text on adoption requirements for the micro-Emission Control Areas that forms part of Option 3. The co-sponsors proposed a draft text on “Criteria and procedures for designation of Micro-Emission Control Areas (M-ECA)” to provide a basis for discussion. The co-sponsors also proposed the term “Local/Limited ECA (L-ECA)” instead of the previously proposed term “Micro-ECA”.

4.32 The Committee considered documents MEPC 57/4/30 and MEPC 57/4/31 (Finland, Germany and Norway) presenting a total “package” for new requirements on NO_x regulations for both new and existing engines, future sulphur limits, fuel oil quality as well as a way forward on PM. In presenting this proposal, the sponsors deviated from their primary viewpoints to contribute to a firm decision by the Committee. The co-sponsors stated that an important reason for developing the proposal had been to ensure that IMO continued to be in the lead in establishing a global framework for international shipping regarding enhanced environmental protection and ship safety. The revised Annex VI should stand the test of time, and not trigger new initiatives for stricter emission limits shortly after the adoption of the ongoing revision. The co-sponsors regarded the revision as a positive process with a lot of useful input and interesting proposals. However, IMO was close to the decisive moment of taking a decision. The sponsors stressed that it was of utmost importance that the Committee sticks to the timetable on all issues. The review period had been sufficient in order to bring forward information, experiences and expertise on environmental and human health effects, technology development, effects on industries, ship operation, compliance and enforcement aspects – all relevant elements needed in order to enable IMO to take a decision. All stakeholders would benefit from a clear 2008-decision by the Committee in order to prepare for compliance with new requirements. The aim had been to establish new requirements which responded to the environmental needs and ensured ship safety. The co-sponsors had undertaken a thorough consideration of the interrelationship between the various emission types and requirements. In the view of the co-sponsors, the emission reductions of NO_x and PM could not be separated from the fuel issue. The short term measures in the package made use of existing technology and fuels, and the long term measures would imply extensive changes in technologies and fuels to be used. Furthermore, the co-sponsors had strived to combine the advantages of the global approach with the special needs of areas subject to severe air quality problems. Finland, Germany and Norway invited States and stakeholders to consider the proposal as a positive attempt to establish a solid way forward for IMO, and the Committee to consider the package to be the basis for the final decision on the revised Annex VI to MARPOL.

4.33 The Committee considered document MEPC 57/4/38 (Norway) providing the results from a computer model run of the “package” presented in documents MEPC 57/4/30 and MEPC 57/4/31 by the same computer model as used for the six options that was computer modelled by the Health and Environment Sub-group for the Scientific Group of Experts. The

document summarized the environmental effects of possible options to reduce SO_x, NO_x and PM emissions, and concluded that a global approach combined with regional requirements would have better environmental benefits than a regional approach only.

4.34 The United Kingdom referred to its submission in document MEPC 57/4/42, commenting on the outcome of BLG 12 and expressing preference for a modified “Option 3”. The United Kingdom was in favour of a global cap supported by regionally based ECAs but was not in favour of internationally regulated Micro-ECAs. The United Kingdom noted that such areas would normally be defined by national authorities with the power to regulate such areas within their jurisdiction. The United Kingdom also proposed a global sulphur cap of 1,50%, because the initially proposed limit of 3.00% would not prevent an increase in the global SO_x emissions from shipping, given the predicted rise in shipping volume. The United Kingdom argued that the proposed global sulphur cap of 1,50% was feasible and that setting a challenging yet achievable limit would avoid a proliferation of regional ECAs; except, where there was a proven environmental justification. Similarly, by setting these limits, it would afford protection to coastal communities without the capability to introduce and enforce an ECA. The United Kingdom drew the Committee’s attention to the Scientific Group’s finding, that SO_x levels on shore are primarily influenced by the size and sulphur limits in an adjacent SECA and less by the global sulphur cap, calling into question the cost benefit of very low global sulphur levels and especially the costs and additional CO₂ emissions associated with global use of distillates. The United Kingdom expressed concerns that the investment, additional costs, increased CO₂ emissions and practical availability of sufficient quantities of distillate fuels was questionable. There was also a significant cost to both refinery and shipping industry which raised questions of the overall net benefit. The United Kingdom believed that focusing on a solution dependent on only the fuel itself was far too restrictive and the option for achievement of a reduction in emissions by the use of alternative technologies should not be closed. Inclusion of acceptable alternative technological solutions would spur industry to maintain progress on currently available technology and lead to the development of additional means in the future.

4.35 A large number of delegations, including several Parties to the 1997 Protocol (Belgium, Croatia, Estonia, France, Italy, Latvia, Lithuania, Slovenia and Sweden), expressed support for the joint proposal by Finland, Germany and Norway (also Parties) presented in documents MEPC 57/4/30 and MEPC 57/4/31. A number of other delegations, including a number of Parties to the 1997 Protocol (Denmark, Greece, the Netherlands and Poland), expressed support to the proposal in principle but they wanted their concerns to be considered in more detail in the working group before a final decision was made.

4.36 Also a substantial number of delegations, including several Parties to the 1997 Protocol (Bahamas, Cook Islands, Japan, Liberia, Marshall Islands and Spain), supported the proposal by the United Kingdom (also Party) on a revised Option 3 as presented in document MEPC 57/4/42.

4.37 The majority of delegations that took the floor did not support the introduction of “micro” or “local” emission control areas. The Committee agreed that, due to insufficient support, no further consideration of the concept was appropriate and agreed to instruct the working group accordingly.

4.38 The Committee considered the inclusion of a review clause in the future global sulphur regulation ensuring commercial availability of suitable technology or required fuels and agreed that the working group should consider the issue during its deliberations.

4.39 The Committee agreed that sufficient information, including technical and scientific data, existed for the Committee to approve amendments to MARPOL Annex VI at the current session. It was noted that no delegations advocated no action and the Committee agreed that further detailed discussions should take place in the working group enabling the Committee to make a final decision based on the outcome.

4.40 The Committee agreed to instruct the working group to finalize a principal option for future sulphur and PM regulations for final decision by the Committee in plenary, taking into account the comments made in plenary.

Possible NO_x regulation for existing engines

4.41 The Committee noted that BLG 12 had developed two options for possible NO_x regulations for existing (pre-2000) engines as described in paragraphs 25 to 31 of document MEPC 57/4/23. The first option would apply the standard to all engines regardless of availability and would subject ships which could not upgrade to some form of punitive or alternative treatment (e.g., denial of port entry, a requirement to use distillate fuel, or some alternative measure such as de-rating the engine). The second approach would employ a market-based “kit-approach” where the standard would apply to only those engines where an approved upgrade kit was commercially available. The Committee recognized that there also was an option not to include any NO_x standards for existing engines in the amended MARPOL Annex VI.

4.42 The Committee considered document MEPC 57/4/33 (Germany and Japan) providing comments on the application range of possible NO_x regulation for existing engines developed and agreed by BLG 12. The co-sponsors proposed that the application range of existing engines should be “engines with per cylinder displacement at or above 90 L and the power output at or above 5000 kW”.

4.43 The Committee considered document MEPC 57/4/41 (United States) proposing revisions to simplify the “kit-approach” in Option 2 of the draft amendments to regulation 13 of Annex VI to control NO_x emissions from certain engines built between 1990 and 1999 that have not undergone a major modification since 1 January 2000.

4.44 The Committee considered document MEPC 57/4/45 (Denmark) supporting Option 1 to NO_x regulation for existing engines and favours a cylinder displacement approach of [30/60] litres. The document also provided comments on the need for a simplified approach for certifying existing engines and the need for a simplified technical file for such engines. Denmark reasoned that “Option 2” (“the kit-approach”) would not deliver the desired reduction without the use of economic incentives.

4.45 The Committee considered document MEPC 57/4/47 (European Commission) providing additional information related to possible NO_x regulation for existing engines. The European Maritime Safety Agency (EMSA), in co-operation with the European Commission, conducted a study on possible modifications on existing engines to reduce NO_x emissions. The study gave an overview of possible technological options for different categories of ships and showed that a significant part of existing engines could be modified, although there could be disadvantages in doing so in fuel consumption and installation/operational cost.

4.46 Following a brief debate, where delegations sought clarifications on the two approaches and some delegations expressed concerns over a possible fuel penalty as a consequence of

upgrading existing engines, the Committee agreed to task the working group with considering the issue further and provide advice for a final decision.

Fuel oil specification

4.47 The Committee noted the debate at BLG 12 where it was agreed to recommend to the Committee to approach ISO inviting them to develop a draft fuel specification where also parameters related to air quality and ship safety was included.

4.48 The Committee considered document MEPC 57/4/37 (Norway) providing comments on MEPC 57/4/23 suggesting an addition to the proposed action to be taken by the Committee regarding the request to ISO on a fuel oil specification in line with regulation 18. The document furthermore contained a draft legal text if option 1, or similar options, should be preferred by the Committee.

4.49 The delegation of the United Kingdom, supported by Australia, reminded the Committee of the recommendation by BLG 12 that no fuel oil specification should be included in the amended MARPOL Annex VI. The development of fuel standards should be left to the ISO. There was no justification for inclusion of parameters other than sulphur until the Committee had an opportunity to address other fuel properties as a dedicated Work Programme Item.

4.50 The Proposal by Norway was supported by Germany. India expressed the need for a tightening of certain parameters in the existing ISO standard.

4.51 The Committee noted the oral information by the ISO observer that it was currently undertaking a substantial review of the relevant fuel oil specifications and was totally committed to assist and support IMO in its work to protect the marine and atmospheric environment as well as enhancing maritime safety. ISO advised that its Working Group for ISO 8217 had been re-established to assist IMO in final standards needs based on the debate in the BLG Sub-Committee over the past two years.

4.52 The Committee agreed to invite ISO to develop recommendations to be considered by the Organization concerning a draft fuel oil specification with recommendations on the specific parameters related to air quality, ship safety engine performance and crew health as well as specific values as appropriate. The Committee agreed that the working group should be tasked with identifying what parameters IMO should request ISO to include in a future marine fuel oil specification, including parameters affecting engine performance and crew health. The Committee further agreed that the decision on whether to include a fuel oil specification in the amended MARPOL Annex VI should only be taken following the final decision on future sulphur regulation.

Report on long term availability of halons

4.53 The Committee considered document MEPC 57/4/19 (Secretariat), reporting on the outcome of the nineteenth meeting of the Parties to the Montreal Protocol on matters related to the long-term availability of halons. The Organization was requested to assist the Ozone Secretariat in investigating the issue of regional imbalances in distribution of halons, by encouraging the Member States to collect data on the number of halon systems; the number of ships so equipped; and the total amount of halons installed on board ships flying their flag. Member States were encouraged to convey this information to the Ozone Secretariat for its use in completing the assignment it has received from the Parties to the Montreal Protocol.

4.54 The Committee agreed that the working group should be tasked with developing a draft MSC-MEPC Circular for consideration with a view to approval and forward it to the Maritime Safety Committee for consideration and concurrent decision.

Establishment of the Working Group on Air Pollution

4.55 The Committee recalled that MEPC 56 agreed in principle to re-establish the Working Group on Air Pollution at this session and re-established the Working Group on Air Pollution under the Chairmanship of Mr. Bryan Wood-Thomas (United States) with the following Terms of Reference:

“Taking into consideration submissions by Members and comments made in Plenary, the Working Group on Air Pollution is instructed to:

- .1 finalize the draft amendments to MARPOL Annex VI on the basis of annex 1 to document MEPC 57/4/23, including finalization of the principal option for future sulphur and PM regulations;
- .2 finalize the draft amendments to the NO_x Technical Code, including a simplified certification scheme for existing (pre-2000) engines, on the basis of document MEPC 57/4/23/Add.1;
- .3 identify what parameters related to air quality and ship safety as well as parameters affecting engine performance and crew health IMO should request ISO to include in a future marine fuel oil specification;
- .4 consider whether the draft procedure to verify sulphur content in fuel agreed by BLG 12 could also be used as guidance in the interim period before the amendments enter into force and if this should be done through a Unified Interpretation or otherwise;
- .5 provide advice on revoking MEPC/Circ.473 and MEPC.1/Circ.540 containing Unified Interpretations to MARPOL Annex VI and the NO_x Technical Code;
- .6 develop a draft MSC-MEPC Circular on the decreasing availability of halons; and
- .7 finalize the revised guidelines for Exhaust Gas Cleaning Systems, including washwater discharge criteria for such systems, with a view to adoption by the Committee with an MEPC resolution.

Report of the Working Group on Annex VI and the NO_x Technical Code

4.56 In his introduction of the report of the working group (MEPC 57/WP.7), the group's Chairman, Mr. Bryan Wood-Thomas, emphasized that the group had been able to reach agreement on all major issues on revising MARPOL Annex VI. This was remarkable since many of the issues had been highly controversial with a very diverse set of opinions on what options and specific limitations were appropriate in light of the relevant risks to human health and the environment. Mr. Wood-Thomas summarized the most significant conclusions by the working group as follows:

- .1 With respect to existing engines, an agreement was reached to apply the Tier I NOx standard to marine diesel engines with a power rating of 5,000 kW and a 90-litre per cylinder displacement. This requirement would apply to engines installed in ships built between 1990 and 1999 and only to those engines where an Approved System were available. The group further agreed to phase-in this requirement 12 months after the first renewal survey following certification and commercial availability of an Approved System.
- .2 The working group also agreed to an exemption to the Tier III NOx standard for recreational vessels under 24 metres in length as well as small vessels with a propulsion power rating less than 750 kW.
- .3 With respect to SOx and PM emissions, the Group undertook an extensive debate of the various proposals before the Committee. Mr Wood-Thomas was pleased to report that unanimous agreement was reached on future SOx and PM regulations and that the proposed text was entirely free of any square brackets. The agreement was as follows:

Global

- .1 1 January 2012 – global sulphur limit – 3.50 %;
- .2 1 January 2020 – global sulphur limit – 0.50 %;
- .3 the 0.50 % global sulphur limit will be subject to a review to be completed in 2018 and in the event the review is unsuccessful, the 0.50 % limit will default to 2025;

Emission Control Areas (ECAs):

- .4 1 March 2010 – sulphur limit within an ECA – 1.00 %;
- .5 1 January 2015 – sulphur limit within an ECA – 0.10 %; and

Equivalents

- .6 the use of exhaust gas cleaning systems as well as other alternative technologies or fuels may be used to meet the sulphur limits.
- .4 The language in the current Annex VI concerning exhaust gas cleaning systems was deleted from regulation 14 with the agreement that such systems may be permitted as a function of the amended regulation 4 concerning equivalents. It was also clarified in the working group that exhaust gas cleaning devices could be employed as an alternative means of complying with any of the limits specified in regulation 14, including the current global cap of 4.50 %.
- .5 Each of the respective limitations, years, and other elements were agreed upon as a result of numerous compromises made by all interested parties and that alteration of the “package” could lead to an unravelling of the package agreed upon in the working group.

- .6 A number of delegations had expressed an interest in relaxing the criteria applicable to the designation of emission control areas. While some expressed concern about relaxing the criteria, it was agreed that any proposals concerning relaxation of the criteria found in Appendix 3 of MARPOL Annex VI should be submitted for consideration by MEPC 58.
- .7 With respect to the draft revised guidelines on exhaust gas cleaning systems and washwater discharge criteria for such systems, the Group agreed to recommend that the Committee adopt the revised guidelines and includes the washwater discharge criteria as interim. The interim washwater discharge criteria should be forwarded to GESAMP for review and comment. The washwater discharge criteria should be revised in the future as more data becomes available on the contents of the discharge and its effects, taking into account any advice given by GESAMP.
- .8 The group also agreed on an indicative list of fuel oil characteristics to be forwarded to the ISO inviting recommendations to the specific characteristics and limit values that may be appropriate to developing a fuel quality specification designed to address air quality, ship safety, engine performance, and crew health.
- .9 Other issues addressed and agreed upon by the working group included revised text concerning reception facilities, guidelines for development of a VOC management plan for tankers, a draft MEPC circular concerning unified interpretations related to sulphur limits in fuel and fuel oil verification and a draft MSC-MEPC circular on the decreasing availability of halons for marine use.
- .10 The working group undertook an extensive review of the revised Annex VI regulations and the NOx Technical Code.

4.57 Mr. Wood-Thomas stressed that the working group had reached unanimous agreement on a text free of any square brackets. He said that he would normally refrain from suggesting what significance actions by the Committee might imply. He believed, however, that it would be unfair if he failed to note the importance of the result. The revised standards put forward in the amended text represented a dramatic step forward to establish standards that were responsive to the significant air quality problems common to many areas across the Globe. Recognizing that there were significant uncertainties in the global fuels market, Mr. Wood-Thomas referred to the statement made by IPIECA in the working group (paragraph 7.18 of MEPC 57/WP.7). While recognizing this uncertainty and the possibility that some would question whether the group had found the best solution of the many variations possible, the agreed standards were not the least common denominator – rather they were standards applying strict limits and the use of advanced treatment technologies that once implemented, would significantly reduce air emissions from ships. The group had arrived at this position through the tireless work of many people and he extended his appreciation to all members of the working group with specific thanks to Mr. Simon Brown and Ms. Lindy Johnson, as well as Mr. Eivind Vagslid and Lucy Essuman of the IMO Secretariat, for their extraordinary efforts enabling the Group to finalize the amended treaty that was now before the Committee for its consideration. Mr. Wood-Thomas on behalf of the working group recommended that the Committee approved the draft amendments for circulation and final adoption at MEPC 58 in October.

4.58 Having received the report of the Working Group, the Committee approved the report in general and, in particular:

- .1 considered and adopted the revised Guidelines for Exhaust Gas Cleaning Systems including the interim washwater criteria for such systems by resolution MEPC.170(57), as set out in annex 4;
- .2 agreed to forward the interim washwater discharge criteria, set out in section 10 of the revised Guidelines for Exhaust Gas Cleaning Systems, to GESAMP for their review and comment;
- .3 approved the draft MSC-MEPC Circular on the decreasing availability of halons (MEPC 57/WP.7, annex 5) and agreed to forward it to the Maritime Safety Committee for consideration and concurrent decision with a view to dissemination;
- .4 approved, with a view to circulation for subsequent adoption at its next session, the draft amendments to MARPOL Annex VI, as set out in annex 5;
- .5 noted the debate on how cost effectiveness and prevention of excessive costs being avoided in the retrofitting of pre-2000 engines and the formula developed by the working group to that respect;
- .6 noted the debate on possible relaxation of the criteria for designating emission control areas and that the working group agreed that those interested in relaxing the current criteria should submit a proposal for consideration by MEPC 58;
- .7 approved, with a view to circulation for subsequent adoption at its next session, the draft amendments to the NO_x Technical Code, as set out in annex 6;
- .8 noted the possible problems associated with differing calculations in the two editions of the NO_x Technical Code (1997 and 2008) and the recommendations agreed by the working group to avoid such problems;
- .9 noted the need identified by the working group for guidance on how water – additional to atmospheric humidity and that formed through the combustion of the fuel’s hydrogen content – should be handled as well as the need to address calculation requirements for selective catalytic reduction units or other NO_x reducing devices;
- .10 requested the Secretariat to ensure that all conforming changes and formatting issues associated with the revised MARPOL Annex VI and the revised NO_x Technical Code approved by the Committee were incorporated before presenting the texts to MEPC 58 for adoption;
- .11 agreed to the draft guidelines for the development of a VOC management plan (MEPC 57/WP.7, annex 7) with a view to adoption at MEPC 58;
- .12 agreed to request ISO to consider the identified parameters related to air quality; ship safety; engine performance and crew health and to provide recommendations for subsequent consideration by the Committee;

- .13 requested the Secretariat to invite ISO in liaison with other relevant international organizations to consider the development of a fuel oil specification addressing air quality, ship safety, engine performance, and crew health with recommendations for future consideration by the Committee and, if feasible, report back to MEPC 58;
- .14 approved the draft MEPC circular containing Unified Interpretations related to the verification of sulphur content in fuel oil (MEPC 57/WP.7, annex 4) and requested the Secretariat to disseminate it as MEPC.1/Circ.614; and
- .15 noted that, due to time constraints and taking into account that this was not an urgent matter, the working group did not consider whether MEPC/Circ.473 and MEPC.1/Circ.540 containing Unified Interpretations to the current MARPOL Annex VI and NO_x Technical Code should be revoked, and agreed that the issue should be considered at MEPC 58.

4.59 The delegation of Singapore, on behalf of the participants, thanked the working group Chairman, Mr. Bryan Wood-Thomas, for his hard work, his firm chairmanship, his transparency and ability to listen, and to act upon, concerns expressed by States and industry organizations with different starting points and his extraordinary skills to find common ground leading to a final solution agreed by consensus and without a single set of square brackets. Singapore stated that all aspects had been considered and that the working group had undertaken a full debate of the options and proposals on the table. Singapore reasoned that there were still some details to be considered at MEPC 58 and encouraged all Parties to carefully consider the approved text for final adoption at the next session.

4.60 The delegation of Greece, supported by Ukraine, noted that the issue of cost effectiveness of retrofitting existing engines, and the formula developed by the working group to that effect, would be further considered at MEPC 58. Greece reiterated that Member States and observers should provide appropriate input from engine manufacturers in order to assess the feasibility and the estimated cost of retrofitting existing engines.

4.61 ITF, supported by ILO, expressed appreciation for the inclusion of factors associated with crew health in the request to ISO on parameters to be considered in future fuel oil specifications but expressed concerns that ISO did not possess the expertise needed for this work and recommended to also include other relevant UN agencies or international organizations with specific expertise on human health and working conditions, e.g., WHO and ILO. The Committee agreed to request the Secretariat to include reference to other relevant organizations with particular expertise on human health in the request to ISO.

4.62 Slovenia, speaking as the Presidency of the European Union, following consultations with the European Commission and fellow EU Member States, wholeheartedly congratulated the IMO community – that was, all Member States, observers, the IMO Secretariat and the Secretary-General personally – for this tremendous achievement. The measures approved by the Committee would significantly and quickly reduce air pollution from ships, offering benefits for the environment and humans in the entire world. In particular, Slovenia acknowledged and greatly appreciated the co-operation and flexibility showed by all Member States and involved observers enabling IMO to reach this important decision. It clearly demonstrated that IMO was capable of taking important and difficult decisions to protect the environment. Slovenia hoped that this spirit would be maintained for all other environment-related issues and would lead to

similar positive results on greenhouse gas issues and ship recycling in 2009 as well as on other matters.

MATTERS RELATED TO GREENHOUSE GAS EMISSIONS FROM SHIPS

4.63 The Committee recalled that MEPC 56 had:

- .1 established an Intersessional Correspondence Group on GHG Related Issues, under the leadership of Australia and the Netherlands, and instructed it to discuss possible approaches on technical, operational and market-based measures to address GHG emissions from ships and present a report to this session;
- .2 encouraged Member States and observers to put forward concrete and practical proposals for technical, operational and market-based mechanisms to address GHG emissions from international shipping;
- .3 approved the Terms of Reference for the update of the 2000 IMO GHG Study on Greenhouse Gas Emissions from Ships and instructed the Secretariat to initiate this update in accordance with the terms of reference including the establishment of a Steering Committee to assist the Secretariat;
- .4 agreed to encourage Member States and observers to contribute towards funding of the update of the 2000 IMO GHG Study; and
- .5 agreed to the establishment of a GHG module in GISIS and approved the format for the module, as set out in its report (MEPC 56/23, paragraph 4.67).

4.64 The Committee agreed that, having received 24 documents on GHG related issues (including information documents) under this agenda item, only basic documents should be briefly introduced in plenary while the remaining documents would be forwarded for review by a Working Group on GHG Emissions from Ships to be established. The discussion in plenary was therefore aimed at agreeing to key principles and preparing instructions for the Working Group.

4.65 At the start of the discussions, the Secretary-General highlighted the need for the Organization and the maritime community at large to act in concert with, and contribute to, the wider international efforts aimed at swift and substantive action to combat climate change under the UNFCCC process, by proactively addressing the principles and objectives enshrined in the Bali Roadmap out of genuine concern for the atmospheric environment. He stressed the importance for the Committee to ensure that the complex challenges associated with the limitation and control of greenhouse gas emissions from shipping were properly understood by the international community and that IMO should show leadership, not only by moving in parallel, but also keeping one step ahead of the agreed UNFCCC process. He outlined a possible way forward to achieve this. In his view, the Committee would need to make substantive progress at this session, by agreeing on key principles, so that the outcome could be brought to the attention of the UNFCCC subsidiary bodies, scheduled to meet in June of 2008. Subsequently, and based on the outcome of MEPC 58, a comprehensive report would be prepared for submission to the UNFCCC Conference of Parties planned in Poznan, Poland, in December of 2008 and, finally, based on the completion of the GHG work at MEPC 59 in July of 2009, a position paper would be agreed to demonstrate to the UNFCCC Conference of Parties meeting in Copenhagen, in December of 2009, that a satisfactory regime to limit, or reduce, greenhouse gas emissions from marine bunker fuels would be in place, thanks to IMO's

strenuous efforts at the initiative of the maritime community. Such a successful outcome would, in his view, obviate any call for action to be taken outside the Organization at the regional or unilateral level.

Report of the Intersessional Correspondence Group and associated submissions

4.66 The delegation of the Netherlands, in introducing the report of the Intersessional Correspondence Group on GHG issues (CG) (MEPC 57/4/5, MEPC 57/4/5/Add.1 and MEPC 57/INF.15), informed the Committee that the CG, as instructed, had discussed possible approaches on technical, operational and market-based measures to address greenhouse gas emissions from ships.

4.67 In general terms, the CG agreed that IMO should have a leading role in addressing greenhouse gas emissions from international shipping and that this work should be forward-looking and pro-active and recognize the complementary role of technical, operational and market-based measures. Furthermore, the CG acknowledged that multilateral co-operation should be stimulated and that IMO should work closely with other relevant UN bodies.

4.68 With regard to global/regional/national approaches, some CG members had diverging views regarding, in particular:

- .1 whether the “no more favourable treatment”, or “flag neutrality” principle should apply globally to avoid market distortion;
- .2 the possibility that, if a global approach was not forthcoming, regional or national regimes could emerge;
- .3 whether any measures to be adopted by IMO should only be applicable to Annex I parties to the UNFCCC and its Kyoto Protocol in accordance with the “common but differentiated responsibility” principle; and
- .4 whether shipping could be considered as a Clean Development Mechanism-category.

4.69 General comments within the CG on possible measures to be taken included observations that all measures should be properly designed, efficient and effective, and whether they should be target-based. With regard to the suggested voluntary measures, it was pointed out that, as stand-alone measures, they might not result in immediate and tangible outcomes. Due to time constraints, the possible categorizing of measures for “new build” and “existing vessels” could not be discussed in detail. More time would be required to debate these matters, in particular the extent to which a proposed measure could help reduce greenhouse gas emissions from new ships, and ways to address technical improvements for existing ships.

4.70 The CG report made a distinction between short- and longer term reduction options, by giving a summary of each, and describing their advantages and disadvantages as shown in document MEPC 57/4/5.

4.71 In discussing the next steps to be taken in the light of the CG report, some members considered that it should be submitted to the Committee in accordance with the agreed Work Plan (MEPC 55/23, annex 9) and that the Committee might request the CG to continue its work as deemed necessary. Other members suggested that the Committee, at this session, might

decide to adopt a staged approach, and ask the Correspondence Group to continue its work by: (1) prioritizing practical short-term options; (2) elaborating further the longer term options; (3) considering the appropriate level of reductions to be achieved; and (4) addressing the legal aspects of introducing and enforcing measures.

4.72 The Committee thanked the delegations of Australia and the Netherlands and all the members of the Correspondence Group for the comprehensive, well-structured and informative report.

4.73 The Committee considered the general viewpoints made by Denmark, Marshall Islands, BIMCO, ICS, INTERCARGO, INTERTANKO and OCIMF (MEPC 57/4/2) on the issue of GHG emissions from international shipping and their encouragement for IMO to lead and take early action on this issue. The co-sponsors also proposed that any future IMO regulations in this regard should be based on the following fundamental principles and that, therefore, a coherent and comprehensive future IMO framework should be:

- .1 effective in contributing to the reduction of total global greenhouse gas emissions;
- .2 binding and equally applicable to all flag States in order to avoid evasion;
- .3 cost-effective;
- .4 able to limit, or at least, effectively minimize competitive distortion;
- .5 based on sustainable environmental development without penalizing global trade and growth;
- .6 based on a goal-based approach and not prescribe specific methods;
- .7 supportive of promoting and facilitating technical innovation and R&D in the entire shipping sector;
- .8 accommodating to leading technologies in the field of energy efficiency; and
- .9 practical, transparent, fraud free and easy to administer.

4.74 The Committee acknowledged the importance of developing fundamental principles as a basis for future regulations on GHG emissions from ships. Although some delegations preferred that any measures to be adopted by IMO should only be applicable to Annex I parties to the UNFCCC and its Kyoto Protocol in accordance with the ‘common but differentiated responsibility’ approach, the overwhelming majority of delegations that spoke supported the principles as set out in the previous paragraph.

4.75 Listening carefully to the different interventions and, especially, the intervention advocating to concentrate on regulations addressing the vessel itself, which is customary in IMO’s practice, the Chairman, in an attempt to reach consensus offered to modify principle .2 above as follows:

“binding and equally applicable to all *ships* in order to avoid evasion”.

4.76 The Chairman's proposal was not accepted by those delegations not supporting principle .2.

4.77 Consequently, the Committee decided by an overwhelming majority to take the aforementioned principles as its reference for further debate on GHG emissions from international shipping and also for further reflection when the nature and form of the measures to be taken were clearer.

Statement by the delegation of China

4.78 The delegation of China expressed the hope that IMO could make its due contribution to address the issue of global climate change based on the "common but differentiated responsibility" principle in accordance with the UNFCCC and the Kyoto Protocol. It regretted the adoption by the Committee of the principles listed in paragraph 4.73 above as the point of departure for further debate, as these had not been thoroughly discussed. Moreover, these principles exceeded the scope of work of MEPC as authorized by IMO and would have to be substantially amended to stay within this scope. China reserved its position on the principles.

Statement by the delegation of India

4.79 The delegation of India, in the spirit of compromise and to reach a consensus, proposed to amend the first principle in paragraph 4.73 to read: "effective in contributing to the reduction of total global greenhouse gas emissions *from ships*". In addition, that delegation suggested that the second principle ("binding and equally applicable to all flag States in order to avoid evasion") should be deleted, while the other seven principles were acceptable. The Committee was reminded of previous agreements and India expressed the view that any IMO framework on GHG emission reductions from shipping should:

- .1 have a shared vision for long-term co-operative action, including a long-term goal for emission reductions; contribute fairly to the ultimate objective of the UNFCCC in accordance with its provisions, in particular the principle of 'common but differentiated responsibilities' and respective capabilities; and take into account social and economic conditions and other relevant factors; and
- .2 recognize the maritime contributions to the four building blocks of the Bali Action Plan for Climate Change, namely mitigation, adaptation, technology transfer, and related finance and investment matters.

4.80 The delegations of Barbados, Brazil, South Africa and Venezuela shared the concerns of China and indicated their support for the position taken by India. Brazil also reserved its position on the principles in paragraph 4.73 above in line with China.

Remarks by the Secretary-General

4.81 In his intervention, the Secretary-General referred to his opening speech when he emphasized that the Committee should, within the timetables already agreed and those to be agreed upon, debate the issues before it thoroughly so that, in the end, balanced decisions would be made – an approach that only IMO, with its global membership and global mandate, could make on a global issue of global dimensions.

He encouraged the Committee to take advantage of the opportunity the meeting was presenting and make full use of the experts attending the session to work out solutions and measures, which would contribute to the worldwide efforts to limit and reduce greenhouse gas emissions. He could see no conflict between the principles recommended in document MEPC 57/4/2 and those enshrined in article 2.2 of the Kyoto Protocol. His assessment derived from the premise that the endeavours of both the Parties to the UNFCCC and the Committee aimed at enhancing the protection of the environment and, while the Kyoto Protocol aims at pursuing elimination or reduction of emissions of greenhouse gases, as far as IMO was concerned, only by parties included in the list of Annex I thereto, the proposals in the said document aimed at global application. He was of the view that the Committee should address the issue from IMO's global mandate and competence and, to that effect, he considered Singapore's proposal to replace "flag States" by "ships" in paragraph 4.73.2 helpful. He queried what service would be rendered to the environment if the application of measures to eliminate or reduce greenhouse gas emissions was required of a developed country with a limited number of ships (say 5 or 50) under its flag when developing countries with a large number of ships under their flag (up to 6,000) – which is the case in today's shipping reality – were not obliged to comply with the same measures.

4.82 The Committee noted that the new statements did not change the balance of the debate and reconfirmed its decision, as stated in paragraph 4.77 above.

4.83 The Committee agreed that the report of the Correspondence Group should be further reviewed in the Working Group.

4.84 The Committee considered proposals by ICS, BIMCO, CESA, IACS, INTERCARGO, INTERTANKO and OCIMF (MEPC 57/4/8) for a cross-industry goal-based approach to the reduction of GHG emissions from new ships, entailing that the options for increasing the efficiency of new ships were different from measures to be applicable to existing ships, and that the improvement in efficiency of future ships should be measured at "unit" level and not at "fleet" level.

4.85 The Committee also considered proposals by ICS, BIMCO, INTERCARGO, INTERTANKO and OCIMF (MEPC 57/4/9) for a cross-industry goal-based approach to reduce GHG emissions from existing ships. The document reported on the outcome of their meeting regarding GHG reduction options for existing ships, in which they concluded that it was not possible to develop measures that would be equally applicable in all circumstances and to all ships.

4.86 The above two proposals were referred to the Working Group for further review.

4.87 The Committee had for its consideration a proposal by the United States (MEPC 57/4/17) whereby the Committee should analyse and discuss the options put forward in the report of the CG, but not pre-judge any outcomes nor depart from the timeline for discussions as agreed in the Work Plan at MEPC 55. The Committee agreed to review this proposal in conjunction with the proposal by the Secretary-General to expedite IMO's work on the reduction of GHG emissions from ships (MEPC 57/4/7) (see paragraph 4.99 below).

4.88 The Committee noted the following four documents:

- .1 document MEPC 57/INF.3 by Sweden, on a study of greenhouse gas emissions trading for the transport sector conducted by the Swedish Environmental Research Institute (IVL);

- .2 document MEPC 57/INF.11 by Norway on a feasibility study into the use of bio-fuels in the Norwegian domestic fleet; and
- .3 documents MEPC 57/4/21 and MEPC 57/INF.21 by Norway, on a study to assess various systems for controlling CO₂ emissions from ships.

Proposal for a mandatory CO₂ design index for new ships

4.89 The Committee considered proposals submitted by Denmark, the Marshall Islands, BIMCO, ICS, INTERCARGO, INTERTANKO and OCIMF (MEPC 57/4/3) to develop a mandatory CO₂ design index for new ships in order to create a strong incentive. Such an index should reflect only the technical aspects, i.e. optimization of engines, hull and propeller or the use of non-fossil fuels, and **not** the operational or commercial aspects. Any CO₂ indexing method for new ships should comply with the following basic requirements; it should: (1) address relevant technical measures; (2) be simple to use; (3) be consistent (to avoid interpretation of results); and (4) be based on a generally accepted methodology.

4.90 The delegation of Japan supported these proposals and indicated that a mandatory CO₂ design index for new ships would be a vital element for the package of IMO measures to be agreed.

4.91 The Committee referred the following documents for review by the Working Group as these elaborated, at the more technical level, on proposals contained in document MEPC 57/4/3:

- .1 documents MEPC 57/4/11 and MEPC 57/4/12 by Japan, proposing the development of an index for CO₂ emissions per unit shipping capacity in actual operational conditions, as well as the basic framework for developing such an index;
- .2 document MEPC 57/4/22 by Marshall Islands reporting on the additional trials undertaken to apply CO₂ emission indexing specifically to container ships to both provide further input for this class of ships and to evaluate the practicality and accuracy of different approaches to “cargo mass”; and
- .3 document MEPC 57/INF.12 by Denmark providing background information for its proposal for a mandatory CO₂ design index for new ships (MEPC 57/4/3) contained in a study commissioned to Det Norske Veritas (DNV).

Proposals for priority short-term measures, including a global levy on bunkers

4.92 The Committee considered a proposal by Denmark (MEPC 57/4/4) to establish a global levy scheme on marine bunker fuel to achieve GHG emission reductions. Under this scheme, all ships engaged in international voyages would be subjected to a bunker levy established at a given cost level per ton of fuel bunkered. With such a scheme in place, a baseline of fuel used and CO₂ emissions would be obtained. The associated document, MEPC 57/INF.13, also submitted by Denmark, in which a global bunker levy was debated and evaluated on a preliminary level, and the impact and potential effects were assessed against relevant evaluation criteria, was referred to the Working Group together with document MEPC 57/4/4.

4.93 All the delegations that spoke indicated that the suggestions made in the above two documents had merit and should be explored further. In an initial discussion, the following issues were raised:

- .1 the experience gained with an Emission Trading Scheme (ETS) under the Kyoto Protocol should be used and the UNFCCC Secretariat should be requested to analyze the proposals tabled at this session and advise the Committee;
- .2 ETS might work locally or regionally, but would it also work globally;
- .3 ETS should only be considered in conjunction with an overall reduction target for emissions from ships e.g., per tonne/mile and stimulate energy efficiency; and
- .4 how would a global levy on bunkers be managed and the benefits be distributed between developing and developed countries;

4.94 The Committee agreed to refer the proposed priority short-term measures to the Working Group, for further discussion.

4.95 The Committee also noted proposals by FOEI (MEPC 57/4/10) urging the Committee to adopt and begin implementing a mandatory GHG reduction scheme by the end of 2008 and proposing prioritization of short-term measures to the scheme, including vessel speed reductions, a carbon tax on marine fuels, provision of shore-side power, etc.

Outcome of the UNFCCC Conference in Bali, December 2007

4.96 Having noted a brief report by the Secretariat (MEPC 57/4/6) on the outcome of the UNFCCC Conference held in Bali, Indonesia, from 3 to 14 December 2007, the Committee was invited to consider the Secretariat's attendance at the 28th and 29th sessions of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) to be held in 2008 and other relevant subsidiary bodies' sessions, as necessary.

4.97 The Committee agreed that it was very important that all parties involved in the UNFCCC process and, in particular, those involved in negotiations on the follow-up of the Kyoto Protocol based on the Bali Action Plan, were fully briefed on the work being done by IMO to tackle GHG emissions from international shipping. The Secretariat, therefore, was requested to prepare and present progress reports on the Committee's achievements to the relevant UNFCCC subsidiary bodies at their sessions during 2008.

4.98 The Committee was informed that, as a follow-up to the Bali Conference, some of the UNFCCC subsidiary bodies were meeting in Bangkok in the same week as MEPC 57. In response to the suggestion that there should be better co-ordination of meetings between the UNFCCC and the IMO Secretariats, the Secretary informed the Committee that the Bangkok meeting had been briefed on progress made by IMO on measures relating to greenhouse gas emissions from ships and that both Secretariats were in frequent contact.

The Secretary-General's proposal to expedite IMO's work on GHG emissions

4.99 The Committee considered a proposal by the Secretary-General to expedite IMO's work on GHG emissions (MEPC 57/4/7). In introducing the document, the Secretary-General underlined the importance and urgency attached universally to the limitation and control of

greenhouse gas emissions from all sources – including international shipping, as well as the need for the Committee, and IMO as a whole, to act in concert with the wider international efforts – seeking the development and adoption of a global agreement by December 2009 and the coming into force of the new regime by 2012. To achieve this goal, the Committee should be in a position to not only finalize, ahead of schedule at MEPC 58, items 1 and 2 of the agreed Work Plan (MEPC 55/23, annex 9), namely: (1) the CO₂ Emission Indexing Scheme; and (2) the CO₂ Emission Baseline(s), but also to make substantive progress on the technical, operational and market-based measures to control greenhouse gas emissions (item 3 of the Work Plan). This proposal was not intended as an amendment to the Work Plan; rather, as an identification of the components in the Plan, which could realistically be concluded before the originally set date. To expedite the work, an *ad hoc* working group might be convened prior to MEPC 58 in line with the offer of Norway to host such an intersessional meeting.

4.100 The delegation of Norway expressed support for the proposal by the Secretary-General and confirmed Norway's offer to host an intersessional meeting of the GHG Working Group in Oslo from Monday, 23 to Friday, 27 June 2008, subject to approval by the Committee (MEPC 57/INF.23).

4.101 The Committee agreed that the proposal to expedite IMO's work on GHG emissions from ships would give more time for thorough discussion of all proposals on the table prior to MEPC 58 and accepted with appreciation the offer of Norway to host an intersessional meeting. Terms of reference for the GHG Intersessional Working Group would need to be developed for approval by the Committee.

Progress reports on the 2000 IMO GHG Study

4.102 The Secretary briefed the Committee on the progress made in updating the 2000 IMO GHG Study (MEPC 57/4/18 and MEPC 57/4/18/Add.1) in accordance with the Terms of Reference approved at MEPC 56. A Steering Committee had met twice under the Chairmanship of Ms. Petra Bethge (Germany) and agreed, in February 2008, that the contract for the update should be awarded to an international consortium of research institutions, co-ordinated by MARINTEK of Norway. This contract was signed on 15 February 2008. The updating had been divided into two phases:

- .1 Phase 1, covering a CO₂ emission inventory from international shipping and future emission scenarios, will be reported to IMO by August 2008 for consideration by MEPC 58 in October 2008. In order to give the scientists as much time as possible to develop and present their findings, the request was made to relax the deadline for submitting the report on Phase 1 to MEPC 58 to 1 September 2008; and
- .2 Phase 2, also covering greenhouse gases other than CO₂ and other relevant substances in accordance with the methodology adopted by UNFCCC, as well as the identification and consideration of future reduction potentials by technical, operational and market-based measures, will be submitted to IMO by February 2009 for consideration by MEPC 59.

4.103 The total cost of updating the 2000 IMO GHG Study had been estimated at US\$500,000, to be collected through voluntary contributions. In October 2007, the Secretary-General had written to a number of IMO Member States and observer organizations, inviting financial contributions. To date, pledges had been received totalling US\$360,000, which would enable the

finalization of Phase 1 of the update. Further financial contributions were, therefore, still necessary in order that the exercise could proceed to Phase 2, as scheduled.

4.104 In conclusion, the Committee:

- .1 noted the progress reports by the Secretariat and requested it to give a further status report to MEPC 58;
- .2 thanked the delegations of Canada, Denmark, Germany, Marshall Islands, Netherlands, Norway, Sweden and the United Kingdom for the generous contributions received from their Administrations for updating the GHG Study;
- .3 urged other Member States and observers that had not yet contributed financially towards the update of the Study to do so as soon as possible, so that the deadline for completion of Phase 2 could be met as expected by the Committee; and
- .4 agreed to relax the deadline for delivery of the report on Phase 1 to 1 September 2008.

Development of a GHG module in GISIS

4.105 The Secretary briefed the Committee on the progress made with the development of the GHG module in GISIS. MEPC 56 had approved the format for this module and instructed the Secretariat to develop it. The initial phase of the GHG module had been completed by November 2007 and, after a period of testing in February and March 2008, the module was now operational and ready for use by Member States and the public. The large collection of data received through submissions to the Committee would, following agreements between the Secretariat and the submitting Governments, be entered into the database before the summer. MEPC.1/Circ.589, issued on 17 March 2008, contained further information as well as the website address (<http://gisis.imo.org/Members/GHG>).

4.106 The Committee noted with appreciation that the GHG module was now available in GISIS and encouraged Member States and others to use it, although no data were available for public users at present.

Establishment of the Working Group on GHG Emissions from Ships

4.107 The Committee established the Working Group on GHG Emissions from Ships under the chairmanship of Mr. Bin Okamura (Japan) with the following Terms of Reference:

“Taking into consideration submissions by Member States and comments made thereon, as well as decisions made in plenary on the following principles that a coherent and comprehensive future IMO regulatory framework on GHG Emissions from ships should be:

- .1 effective in contributing to the reduction of total global greenhouse gas emissions;
- .2 binding and equally applicable to all flag States in order to avoid evasion;
- .3 cost-effective;

- .4 able to limit – or at least – effectively minimize competitive distortion;
- .5 based on sustainable environmental development without penalizing global trade and growth;
- .6 based on a goal-based approach and not prescribe specific methods;
- .7 supportive of promoting and facilitating technical innovation and R&D in the entire shipping sector;
- .8 accommodating to leading technologies in the field of energy efficiency; and
- .9 practical, transparent, fraud free and easy to administer,

the Working Group on GHG Emissions from Ships was instructed to:

- .1 review in detail the recommendations of the Intersessional Correspondence Group on GHG Related Issues (MEPC 57/4/5 and Add.1), focusing first on the *short-term measures* outlined in its report, with the aim of selecting those that realistically can be developed before MEPC 58;
- .2 prepare detailed proposals on the *longer-term measures* identified in the Correspondence Group report, including a consideration of the appropriate level of reductions to be achieved;
- .3 develop a CO₂ design index for new ships and a methodology for a CO₂ baseline in terms of efficiency, with a view to approval at MEPC 58; and
- .4 develop, based on the current GHG Work Plan (MEPC 55/23, annex 9) and the progress achieved on items 1 and 2 of this plan, terms of reference for the intersessional meeting of the Working Group on GHG Emissions from Ships, to be held in Oslo, Norway (23 – 27 June 2008).”

Report of the Working Group on GHG Emissions from Ships

4.108 In introducing the report of the Working Group on GHG Emissions from Ships (MEPC 57/WP.8), the Chairman, Mr. Bin Okamura (Japan), emphasized the following:

- .1 as instructed by the Committee, the Working Group reviewed in detail the short-term and longer-term measures to reduce GHG emissions from ships identified in document MEPC 57/4/5, paragraphs 5.2 to 6.8. Some of the measures could lead to immediate reduction of CO₂ emissions and should be implemented as soon as possible. The Working Group, therefore, agreed that best practices on a range of measures should be further developed with the aim of developing a resolution, as appropriate, at the intersessional meeting being planned in Oslo. All the possible measures identified in the Correspondence Group report were listed and prioritized in annex 1 to its report with identification of the next steps required and stakeholders involved;

- .2 the Working Group felt that, in order not to lose momentum, those measures not to be discussed in Oslo should be worked on by correspondence. It was therefore agreed to propose to the Committee to re-establish the Intersessional Correspondence Group on Greenhouse Gas Emissions from Ships, with the proposed terms of reference set out in annex 2 to its report. Australia and the Netherlands would again lead the work of the Correspondence Group;
- .3 the Working Group agreed that Denmark and Japan, with the assistance of other Members and industry organizations should prepare draft text for assigning a design index to a ship and submit it to the meeting in Oslo. The GHG reduction potential by this measure should also be discussed in Oslo;
- .4 the Working Group agreed to review the Interim Guidelines for Voluntary Ship CO₂ Emission Indexing for Use in Trials (MEPC/Circ.471) at the meeting in Oslo with a view to their finalization at MEPC 58. Once these CO₂ Operational Index Guidelines were finalized, its mandatory application to all ships engaged in international trade would enable IMO to establish a world fleet efficiency baseline. This would also require the development of a reporting scheme and, as the assignment of an Index to individual ships would be done by shipping companies, there may be a need to establish an external verification scheme. It was agreed that these issues should also be discussed in depth in Oslo based on a document to be prepared by the Secretariat;
- .5 the Working Group considered, in more detail, the proposal by Denmark (MEPC 57/4/4) to establish a global levy scheme on marine bunker fuel to achieve GHG emission reductions. Under this scheme, all ships engaged in international voyages would be subjected to a bunker levy established at a given cost level per ton of fuel bunkered. Many delegations found this proposal promising. However, questions, concerns and doubts were raised that needed to be addressed and it was agreed that sufficient attention should be given to further develop this market-based measure at the intersessional meeting in Oslo. The delegation of Denmark offered to co-ordinate further work on the global levy issue; and
- .6 finally, the Working Group prepared draft terms of reference for the intersessional meeting of the Working Group (GHG WG 1) in Oslo, Norway, from 23 to 27 June 2008 (MEPC 57/WP.8, annex 3).

4.109 In general, comments on the report of the Working Group, the proposed arrangements and the terms of reference for the intersessional meeting in Oslo were supported. A successful outcome of this intersessional meeting would be vital to enable MEPC 58 making sufficient progress in keeping with the Committee's agreement to expedite the GHG work (MEPC 55/23, annex 9) at the proposal of the Secretary-General.

4.110 The Committee noted that the listing of possible measures on GHG emission reductions in annex 1 of document MEPC 57/WP.8 was not intended as a prioritization of such measures and that, when considering the advantages and disadvantages of a proposed global levy on marine bunkers (MEPC 57/4/4), the option of "adaptation projects" to be financed with the levies received were intended to be those in developing countries.

Fundamental principles for future regulations on GHG emissions from ships

4.111 The delegation of India suggested that the principles it had proposed to guide the IMO framework for GHG emissions reduction from shipping, referred to in paragraph 4.79 above, should be incorporated in the terms of reference for the intersessional meeting in Oslo.

4.112 The Committee noted that, in the Working Group, the delegation of Brazil had expressed the view that when considering the “appropriate level of reductions to be achieved”, the Organization should take into account the current discussions under the UNFCCC on GHG emission reductions, in accordance with the Bali Action Plan and in light of Article 2.2 of the Kyoto Protocol (MEPC 57/WP.8, paragraph 3.5). This view was supported by Barbados, China, India, the Islamic Republic of Iran, Mexico, Saudi Arabia, South Africa and Venezuela.

4.113 In light of the interventions made, the Chairman proposed to carefully reflect in the intersessional period on the proposal made by India as set out in paragraph 4.79 above in response to the fundamental principles listed in paragraph 4.73 above which had received majority support at this session. The intention would be to reach consensus on the issue of principles at MEPC 58.

4.114 The Committee accepted the proposal by the Chairman and encouraged Member States to submit their views to the next session.

Statement by the delegation of Brazil

4.115 The delegation of Brazil stated that Brazil had always actively participated in the meetings of this Organization with a positive and constructive approach, aiming at consensual solutions favouring the implementation of the objectives of the IMO. It was with this spirit that Brazil engaged in the discussions on GHG emissions from ships. However, in the discussions of document MEPC 57/4/2, the views of developing countries were not properly considered, in accordance with the UNFCCC and the Kyoto Protocol principles. Therefore, it was with regret that Brazil has to reserve its position on the fundamental principle shown in paragraph 4.107.2 above concerning the terms of reference of the Working Group, until a positive and consensual outcome has been achieved at MEPC 58. Brazil appreciated the opportunity to re-discuss this issue in MEPC 58. The delegation of Mexico expressed support to the statement made by the delegation of Brazil.

Action taken by the Committee

4.116 The Committee, having noted the above observations, agreed that:

- .1 in the further work towards developing measures aimed at reduction of GHG emissions from ships, including during the intersessional meeting in Oslo, due attention should be given to the need for capacity-building, as stipulated in resolution A.998(25);
- .2 although the update of the 2000 IMO GHG Study (Phase 1) would only be available after the Oslo meeting, any preliminary results of that update, where relevant, should be communicated to the Oslo meeting for review; and

- .3 further work would be required on the design and operation of appliances using refrigerant gases on board ships aimed at strict limitations on leakage rates of such gases before the DE and BLG Sub-Committees could be instructed to develop guidelines on this issue, subject to approval at MEPC 58.

4.117 In conclusion, the Committee approved the report of the Working Group in general and, in particular (with reference to document MEPC 57/WP.8):

- .1 approved the proposed action by the Working Group for the measures identified by the Correspondence Group (MEPC 57/4/5) (MEPC 57/WP.8, chapter 3 and annex 1);
- .2 approved the terms of reference for the intersessional meeting of the Working Group on Greenhouse Gas Emissions from Ships (GHG WG 1), to be held in Oslo, Norway, from 23 to 27 June 2008, as shown in annex 7;
- .3 re-established the Intersessional Correspondence Group on Greenhouse Gas Emissions from Ships co-ordinated by Australia and the Netherlands¹;
- .4 approved the terms of reference for this Intersessional Correspondence Group as follows:

“Taking into consideration available relevant information, the Intersessional Correspondence Group on Greenhouse Gas Emissions from Ships is instructed to:

- .1 prepare detailed proposals on the measures identified in the Correspondence Group report (MEPC 57/4/5; MEPC 57/4/5/Add.1), which have not been identified for further consideration by the GHG Working Group at its intersessional meeting in Oslo (23-27 June 2008); and
- .2 present an interim report to MEPC 58 with a final report to be presented to MEPC 59”; and

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- .5 urged Member States and organizations to actively participate in the report of the Correspondence Group, to submit papers to the focal points for work prior to the intersessional meeting in Oslo² and to that meeting itself, on the measures to be discussed in their respective terms of reference, including, but not limited to, design, implementation, cost-benefit, mitigation potential, capacity-building and regulatory/legal aspects.

4.118 The Secretary-General encouraged wide participation in the Oslo meeting as such a meeting would be vital in keeping with the Committee's agreement to expedite the GHG work. He also recommended that the meeting in Oslo be chaired by the Committee's Chairman, Mr. Andreas Chrysostomou, with Mr. Bin Okamura – the Chairman of the Committee's Working Group on GHG Emissions from Ships.

4.119 Mr. Chrysostomou indicated his preparedness to chair the Oslo meeting and the Committee agreed to this arrangement.

4.120 The Committee agreed to consider at MEPC 58 the need for another intersessional meeting of the Working Group on Greenhouse Gas Emissions from Ships (GHG WG 2) prior to MEPC 59 in light of the progress achieved at that session.

4.121 The Committee expressed its appreciation to the Working Group's Chairman, Mr. Bin Okamura (Japan), and to the members of the Group for the work done.

5 INTERPRETATIONS OF AND AMENDMENTS TO MARPOL AND RELATED INSTRUMENTS

5.1 Under this agenda item the Committee had before it four substantive documents and one information document and agreed to consider them, by grouping together those addressing the same or related matters, in the following order:

² Co-ordinators for the development of a mandatory CO₂ design index for new ships:

(1) Mr. Koichi Yoshida, Director, Centre for International Co-operation
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(2) Ms Gitte Mondrup, Special Adviser, Danish Maritime Authority
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Co-ordinators for further work on a global levy scheme on marine bunker fuel:

(1) Mr. Lars Olsen Hasselager, Senior Policy Adviser
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- .1 MEPC 57/5/1 (Canada), providing the outcome of the Correspondence Group for the review of MARPOL Annex V; MEPC 57/10/2 (Secretariat) reporting on the outcome of the 29th Consultative Meeting/2nd Meeting of Contracting Parties of the London Convention and Protocol relating to the Boundary issues between MARPOL Annex V and the London Convention Protocol; and MEPC 57/INF.10 (United Kingdom) reporting on the OSPAR Commission's Pilot Project on monitoring marine beach litter;
- .2 MEPC 57/5 and MEPC 57/5/3 (both by IACS), with proposals for Unified Interpretations to MARPOL Annexes I and IV; and
- .3 MEPC 57/5/2, (IACS), with a proposal to develop IMO-approved guidance in the form of a joint MSC-MEPC circular concerning the meaning of the term *building contract date* in case of a contract for an initial number of vessels with an option to build additional vessels.

5.2 In addition, the Committee agreed to consider document MEPC 57/10/2 (Secretariat) under this agenda item as its content related to the review of MARPOL Annex V.

REVIEW OF MARPOL ANNEX V

5.3 The Committee recalled that MEPC 56 had re-established the correspondence group on the Review of MARPOL Annex V and related instruments and had instructed it to:

- .1 taking into account comments, proposals and decisions made in plenary, continue the review of MARPOL Annex V and the guidelines for its implementation, in accordance with the framework, method of work and timetable approved by the Committee; and
- .2 submit a written report to MEPC 57.

5.4 In introducing the report of the intersessional correspondence group (MEPC 57/5/1), the Co-ordinator of the group, Mr. Paul Topping (Canada), informed the Committee about the various tasks carried out by the group since MEPC 56 and, in particular, he focused on the detailed discussion that had taken place within the group in relation to the treatment of the following wastes which were relevant to the review:

- .1 managing cargo residues inside and outside special areas;
- .2 bulk liquid wastes not subject to other MARPOL Annexes;
- .3 garbage that may have harmful residues that are not pollutants;
- .4 dunnage and packaging materials that float;
- .5 composite materials;
- .6 livestock wastes (e.g., bedding) and mortalities; and
- .7 loss of fishing gear.

5.5 The Committee noted that other subjects (annex 2 to MEPC 57/5/1) were still to be addressed, such as: definitions; placards, record-keeping and on-board storage; waste materials from hull cleaning; “victual” versus “domestic” waste; and adequacy of port reception facilities.

5.6 The Committee noted also annex 5 of the report, where a new extended timetable for the completion of the item was proposed, so that the finalized draft amendments to MARPOL Annex V and its associated Guidelines would be submitted to MEPC 59 (July 2009) instead of MEPC 58 as originally envisaged.

5.7 Following the introduction by the Secretariat of document MEPC 57/10/2 with information on the activities of the London Convention governing bodies on Boundary issues between MARPOL Annex V and the London Convention/Protocol, the Committee noted that the 29th Consultative Meeting and the 2nd Meeting of Contracting Parties, which had met concurrently from 5 to 9 November 2007, had noted the progress achieved in their intersessional correspondence group concerning draft Guidance for the management of spoilt cargoes, and that a revised draft was being prepared for distribution to both the London Convention/Protocol bodies and the Committee.

5.8 The Committee further noted that a final draft text would be submitted by the London Convention/Protocol intersessional correspondence group for review by the next session of the Scientific Groups in May 2008 and, subsequently, for review and approval at the next session of the governing bodies and MEPC 58 (both in October 2008).

5.9 The Committee, in noting document MEPC 57/INF.10 (United Kingdom) with information on the OSPAR Commission Pilot Project on monitoring marine beach litter, recognized the usefulness of the information provided for the review of MARPOL Annex V and associated guidelines.

Discussion

5.10 The Committee expressed appreciation for the work carried out by the correspondence group in the intersessional period and, in the debate that followed, comments were made by several delegations and observers with the aim of solving current ambiguities or addressing the treatment of ship-generated wastes from the normal operations of ships which are not now covered by any MARPOL Annex. In particular, the following observations were made:

- .1 the disposal of soot from economizers or boilers should be examined, as presently there are doubts about their treatment either as Annex I or Annex V wastes;
- .2 definitions currently included in the Guidelines should instead be included in the regulations of Annex V;
- .3 a general prohibition on the discharge of garbage into the sea, except where otherwise permitted subject to specific conditions, should be included in the regulations in line with similar provisions in MARPOL Annex I;
- .4 the issue of discharge of cargo residues should be given careful consideration, although it was recognized that detailed information on quantities and types of cargoes involved was needed in order to take an informed decision on this matter;

- .5 on the issue of other bulk liquids not currently regulated under MARPOL, it was stressed that Annex V should not be treated as a “dumping facility” for any ship-generated wastes from the normal operations of ships that now cannot be accommodated under other Annexes of MARPOL; and that Annex V should be transparent and clear in its definition and treatment of garbage.

5.11 The Committee, in view of the outstanding work and recognizing that the task could not be finalized for consideration by MEPC 58 in October 2008, taking into account that the deadline for submission of bulky documents for that session was 4 July 2008 (i.e. three months after MEPC 57), agreed to extend the target completion date of the issue to 2009 and encouraged Member Governments and observers to participate actively in the review of MARPOL Annex V and associated guidelines so that the task can be completed in time for consideration by MEPC 59 in July 2009.

Re-establishment of the correspondence group

5.12 The Committee, in consequence, agreed to re-establish the correspondence group on the Review of MARPOL Annex V and related instruments under the co-ordination of Canada* and instructed it, on the basis of document MEPC 57/5/1 and taking into account documents MEPC 57/10/2 and MEPC 57/INF.10, as well as comments and decisions made in plenary, to:

- .1 develop draft amendments to MARPOL Annex V and the Guidelines for the implementation of Annex V with a target completion date of 2009; and
- .2 submit a progress report to MEPC 58; and a final report with draft necessary amendments to MARPOL Annex V and the Guidelines for its implementation, to MEPC 59.

PROPOSALS FOR UNIFIED INTERPRETATIONS

5.13 IACS, in document MEPC 57/5, invited the Committee to consider IACS’s unified interpretations MPC 90 and MPC 91 relating to the term “similar stage of construction” in MARPOL Annex I regulations 1.28.1 to 1.28.9 and 1.30, and Annex IV regulation 1.1, respectively. The Committee noted that the text of the unified interpretation provided by IACS was identical to that of regulations 1.14.2 of MARPOL Annex II and 2(1) of MARPOL Annex VI, as follows:

“A similar stage of construction” means the stage at which:

- (a) *construction identifiable with a specific ship begins; and*

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- (b) *assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.”*

5.14 The Committee noted that IACS, in document MEPC 57/5/3, also proposed another unified interpretation (MEPC 85, Rev.3) modifying Rev.2 that had been endorsed at MEPC 56 in October 2007 and which related to regulation 22 of MARPOL Annex I on pump room bottom protection. The proposed modification consisted in extending the principle of pump room bottom protection, provided in the longitudinal direction in the case of gondola sterns, to the protection provided in the transverse direction by the turn of the bilge of the ship's bottom plating.

5.15 Following a short debate, the Committee approved the Unified Interpretations on the meaning of “a similar stage of construction” for regulations 1.28.1 to 1.28.9 and 1.30 of MARPOL Annex I, and regulation 1.1 of MARPOL Annex IV, as set out in annex 8. The Committee further approved the modified Unified Interpretation to regulation 22 of MARPOL Annex I, as set out in annex 9.

OTHER PROPOSALS

5.16 IACS, in document MEPC 57/5/2, proposed to develop a draft joint MSC-MEPC circular disseminating the understanding that the date of the building contract, which may be relevant under both MARPOL and SOLAS for determining the age of a ship, be interpreted in case of construction of an initial number of vessels when there is an option to build additional vessels, as meaning the date when the contract was signed, including the optional ships if the option is exercised not later than one year after the contract to build the series was assigned. In the introduction of its document, IACS confirmed its view that if any one of the three conditions in paragraph 1 of the document is met, then such a ship would be considered a “new ship”.

5.17 In the debate that followed, the Committee endorsed the proposal by IACS and, noting that it had also been submitted to MSC 84 as document MSC 84/19/1, agreed to invited the MSC to issue an MSC-MEPC circular as requested by IACS, with the proviso that the optional vessels should be built in the same yard and from the same plans as those of the initial series.

6 IMPLEMENTATION OF THE OPRC CONVENTION AND THE OPRC-HNS PROTOCOL AND RELEVANT CONFERENCE RESOLUTIONS

6.1 The Committee considered three documents under this agenda item as follows: MEPC 57/WP.1, Report of the seventh meeting of the OPRC-HNS Technical Group; MEPC 57/6 (United States), Oil Spill Response in Ice and Snow Conditions; MEPC 57/6/1 (United States) Updating of IMO Dispersant Guidelines; and MEPC/INF.16 (United States) Shoreline Assessment Manual.

Report of the seventh meeting of the OPRC-HNS Technical Group

6.2 The Committee noted that the seventh session of the OPRC-HNS Technical Group was held from 25 to 28 March 2008, in Southampton, hosted by the United Kingdom Maritime and Coastguard Agency, under the chairmanship of Mr. Mark Meza (United States), and that the report of the Group was issued under symbol MEPC 57/WP.1.

6.3 Following the presentation of the report of the Technical Group, the delegation of the Netherlands, whilst recognizing the amount of work carried out by the Group, raised concern over the four splinter groups and the four correspondence groups that were established during the

session. The delegation of the Netherlands also made reference to the lack of cohesion and consistency between the work programme presented and the agenda for the next session of the Group. In this connection, it recommended that the format of the work programme be reviewed and, in doing so, that clear linkages be made to the strategic plan for the Organization and its high level action plan and related priorities as outlined in resolutions A.989(25) and A.990(25) respectively. A final suggestion was to establish a matrix to map out the work of the Group, identifying those manuals and/or guidelines that are out of date and need revisiting; and areas of overlap with information in other manuals, as well as any duplication.

6.4 The delegation of the Bahamas shared the concerns raised by the Netherlands in connection with the establishment of splinter groups and correspondence groups underscoring, in particular, the problem this creates for small delegations.

6.5 The delegation of the Bahamas further expressed the view that the Technical Group had gone beyond the Guidelines on the organization and method of work of the MSC and MEPC and their subsidiary bodies and that the Group's terms of reference should be reviewed and tightened, accordingly.

6.6 The observer from OCIMF, referring to the work of the Group on the Manual on Oil Pollution, Section I – Prevention, noted that OCIMF had been unable to attend the seventh meeting of the Technical Group but had reviewed the document submitted by Venezuela (MEPC/OPRC-HNS/TG 7/3) and expressed reservations regarding its content, given that it deviates significantly in scope and relative length from other guidance materials produced by the Technical Group. The observer from OCIMF, supported by the observer from ICS, also indicated that they had offered assistance to the Correspondence Group led by Venezuela on several occasions, and expressed their continued willingness to contribute to this work, provided clear terms of reference were established.

6.7 In concluding, the Committee approved the report in general (MEPC 57/WP.1) and:

- .1 endorsed the view of the Group to submit the finalized text of the Manual on the assessment and restoration of environmental damage following marine oil spills for approval by MEPC 58;
- .2 agreed with the Group's decision to proceed with the development of a Manual on chemical pollution to address legal and administrative aspects of HNS, focusing initially on elements other than the HNS Convention, pending clarification on the path forward with respect to the planned development of a Protocol to the Convention;
- .3 approved the draft Terms of Reference for a comparative study and for the development of standard guidelines on shoreline clean-up assessment;
- .4 concurred with the Group's proposal to proceed with the development of a Guidance document on identification and observation of spilled oil;
- .5 endorsed the view of the Group to utilize the literature review on Technical guidelines on sunken oil assessment and removal techniques to develop a topic outline to be used as the basis for the development of the guidelines;

- .6 approved the final text of the draft Evaluation guideline for the validation of newly-developed and revised OPRC-related model courses for utilization as part of the validation process for newly-developed and revised OPRC-related model courses;
- .7 noted the progress on the development of the introductory IMO training courses on preparedness for and response to HNS incidents in the marine environment and the advanced state of development of the OPRC Train-the-Trainer course and requested its agreement for the continuation of the work for finalization at TG 8;
- .8 urged Member States and industry to provide financial support to fund the participation of a select number of delegates from developing countries in the Fourth R&D Forum on HNS in the marine environment;
- .9 requested delegations to submit information on maritime-related incidents involving HNS, occurring from 2008 forward, to future sessions of the OPRC-HNS Technical Group, with a view to expanding the current data set and to share lessons learnt;
- .10 agreed with the Group's recommended prioritization of the new work as referred by MEPC 56 and outlined in paragraph 9.6 of MEPC 57/WP.1;
- .11 approved the scheduling of the eighth session of the OPRC-HNS Technical Group meeting the week prior to MEPC 58; and
- .12 further to its extensive deliberations on the matter of the draft work programme and provisional agenda for the eighth meeting of the OPRC-HNS Technical Group, and the related matters considered with regard to the organization of work of the Technical Group, instructed the Group to:
 - .1 review its terms of reference and the format of its work programme, ensuring consistency with the Technical Group's provisional agenda and providing clear linkages to the strategic plan and high level action plan of the Organization and related priorities, and to report back to MEPC 58, accordingly;
 - .2 include the review of terms of reference, work programme and provisional agenda as a separate agenda item for TG 8;
 - .3 retain the high and medium priority items, as approved by the Committee in paragraph 6.6.10, on its agenda for TG 8, with the low priority item removed, for consideration at a future meeting, depending on progress made;
 - .4 review the existing manuals and guidelines and, through the development of a matrix, map out which manuals and/or guidelines are out of date and need for revisiting, identify areas of overlap between the different manuals/guidelines, as well as any duplication of information;

- .5 restrict the establishment of splinter groups to a minimum when carrying out its work; and
- .6 approved the revised work programme of the OPRC-HNS Technical Group and provisional agenda for TG 8, as set out in annex 10.

Oil Spill Response in Ice and Snow Conditions and Updating of IMO Dispersant Guidelines

6.8 The Committee, having considered documents: MEPC 57/6 (United States), Oil Spill Response in Ice and Snow Conditions; and MEPC 57/7/1 (United States), Updating of IMO Dispersant Guidelines, instructed the Technical Group to include these items in its work programme and to prioritize these items accordingly, following the instructions of the Committee to the Group at MEPC 56 for organizing its work (MEPC 56/23, paragraph 7.6), notably to:

- .1 review the documents and prioritize the order of work and to report back to MEPC 58 accordingly before commencing work on the individual documents;
- .2 take into account that the various documents, which are to be used a basis for the development of proposed guidance, may be country-specific and that other nations and regions may have alternate systems in place that are equally effective;
- .3 ensure that the end products, once finalized by the Technical Group, provide more general, consolidated and user-friendly guidance, since the documents in their present format, although providing a sound basis for the development of IMO guidance, are presently too detailed; and
- .4 ensure that the nomenclature and definitions presented in the documents are brought in line with that which are found in MARPOL and other IMO instruments.

6.9 In considering the matter of the proposed update of the Dispersant guidelines, the Committee welcomed the offer of the delegation of France to engage its Centre of Documentation, Research and Experimentation on Accidental Water Pollution (CEDRE) to contribute to this work.

Shoreline Assessment Manual

6.10 The Committee, having considered MEPC 57/INF.16 (United States) containing a draft Shoreline assessment manual, noted that a similar item was already being addressed by the OPRC-HNS Technical Group and, consequently, referred the document for consideration by the Technical Group as part of its work related to a comparative study and subsequent development of standard guidelines on shoreline clean-up assessment.

Strait of Kerch incident

6.11 The Committee noted the information provided by the delegation of the Russian Federation with regard to the casualties and resulting pollution arising from the severe storm in the Strait of Kerch in November 2007 and the subsequent efforts of the Russian Federation for pollution response, search and rescue, salvage in its aftermath and recent improvements aimed at improving safety of navigation.

7 IDENTIFICATION AND PROTECTION OF SPECIAL AREAS AND PARTICULARLY SENSITIVE SEA AREAS

Designation of the Papahānaumokuākea Marine National Monument as a PSSA

7.1 The Committee recalled that MEPC 56 had approved in principle the Papahānaumokuākea Marine National Monument PSSA and had requested the NAV Sub-Committee to consider associated protective measures (APMs) for the PSSA:

- .1 amendment and expansion of the six existing recommended Areas To Be Avoided (ATBAs) “In the Region of the North-West Hawaiian Islands”; and
- .2 establishment of a ship reporting system, which is recommendatory for transiting ships and mandatory as a matter of entry into a United States port or place.

7.2 In considering document MEPC 57/7 (Secretariat), which reported on the outcome of NAV 53 and MSC 83 on the matter, the Committee noted that NAV 53, in July 2007, had considered and approved the proposed amendments to the six existing recommended Areas to be Avoided “In the Region of the North-West Hawaiian Islands” with some corrections to the description, as set out in annex 2 of document NAV 53/22, and had amended its name to “In the Region of the Papahānaumokuākea Marine National Monument PSSA”. The Committee also noted that MSC 83 had adopted these measures in October 2007 (MSC 83/28, annex 25), which had been disseminated by means of SN.1/Circ.263, and decided that it should be implemented at 0000 hours UTC on 1 May 2008.

7.3 The Committee further noted that NAV 53 had also considered and approved the proposed new ship reporting system for the Papahānaumokuākea Marine National Monument PSSA, with some corrections to the description, as set out in annex 3 to document NAV 53/22. MSC 83 adopted this measure in October 2007, by resolution MSC.248(83), as set out in annex 26 to document MSC 83/28, which had been disseminated by means of SN.1/Circ.264; and decided that it should be implemented at 0000 hours UTC on 1 May 2008.

7.4 The Committee, having considered the outcome of NAV 53 and MSC 83, decided to establish a drafting group to review the APMs and the draft MEPC resolution as set out at annex to document MEPC 57/7.

Outcome of NAV 53 and MSC 83 in relation to the Galapagos Archipelago Particularly Sensitive Sea Area

7.5 The Committee noted that NAV 53 had also approved, and MSC 83 subsequently adopted, two new recommended tracks which would be mandatory as a condition of port entry through the Galapagos Area to be Avoided to enter the Galapagos Archipelago PSSA, for dissemination by means of SN.1/Circ.263. MSC 83 also decided that the new recommended tracks would be implemented at 0000 hours UTC on 1 May 2008.

List of PSSAs including relevant APMs and MEPC resolutions

7.6 The Committee noted with appreciation that documents MEPC 57/7/1 and Corr.1 (Secretariat) contained a list of all the 12 PSSAs designated by the Committee and other useful information, including the proposing State(s); associated protective measures; and the date and symbol of MEPC resolutions which designated them.

7.7 The delegation of Singapore reiterated its statement made at MEPC 55 and at the twenty-fifth session of the Assembly concerning the APMs for the Torres Strait extension to the Great Barrier Reef PSSA. As requested, the full text of the statement by the delegation of Singapore is set out in annex 11.

7.8 In response, the delegation of Australia indicated that, while it was reluctant to take the floor and did not wish to reopen the debate on the issue of Australia's system of pilotage in the Torres Strait, as Singapore had raised the issue again, it had no other alternative than formally note for the record that Australia does not agree with the content of the statement made by the delegation of Singapore.

The “Mediterranean Sea area” as a Special Area under MARPOL Annex V

7.9 The Committee recalled that the “Mediterranean Sea area” is one of the original Special Areas under MARPOL Annex V. However, the stringent discharge requirements for the Special Area have not yet taken effect, because, in accordance with regulation 5(4)(b) of MARPOL Annex V, until the Parties bordering the Special Areas have informed the Committee that there are adequate reception facilities in the Special Area concerned, the Committee could not establish a date for the stringent discharge requirements of this Special Area to take effect.

7.10 The delegation of Cyprus, on behalf of the proposing States of document MEPC 57/7/2 (Albania, Algeria, Croatia, Cyprus, Egypt, France, Greece, Italy, Lebanon, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria and Tunisia) on the “Mediterranean Sea area” as a Special Area under MARPOL Annex V, highlighted that the “Mediterranean Sea area” was designated as a Special Area under MARPOL Annex V in 1973. The special status had not come into effect so far since the Committee had not been notified of the provision of adequate reception facilities in all relevant ports of the Mediterranean coastal States Parties to MARPOL Annex V.

7.11 The delegation of Cyprus also stated that as a result of a European Commission funded technical assistance project related to port reception facilities in the Mediterranean region, and implemented by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) between 2002 and 2004, these reception facilities have now been provided. Consequently, the delegation requested the Committee to set a date from which the Special Area status shall take effect.

7.12 The delegation of Israel welcomed the submission and stated that whilst steps to accede to MARPOL Annex V were not quite finalized, it had adequate reception facilities available in all its major ports.

7.13 The delegation of Turkey also welcomed the submission and stated that it had adequate port reception facilities in its ports.

7.14 The delegations that spoke supported the submission and pointed out that this provided a positive signal to port users and the shipping community at large.

7.15 The delegation of the United States, whilst supporting the submission, stressed the importance of ports having a documentation system in place that could support periodic investigations, as well as methods established to address adequacy. Data collected should include volumes and types of waste received and disposal methods.

7.16 The delegation of Cyprus responded that many countries in the region maintained extensive documentation related to waste management issues in their ports and periodic inspections were carried out to maintain adequacy of the port reception facilities.

7.17 The Committee, having considered the proposal by the co-sponsoring States, instructed the Drafting Group to review the information concerning the “Mediterranean Sea area” as a Special Area under MARPOL Annex V and prepare a draft MEPC resolution on the establishment of the date on which regulation 5(1)(a) of MARPOL Annex V in respect of the “Mediterranean Sea area” as a Special Area shall take effect.

Instructions to the Drafting Group

7.18 The Committee established the Drafting Group on Special Areas and PSSAs, under the chairmanship of Ms Annaliese Caston (Australia), and instructed the Group to:

- .1 review the draft MEPC resolution on the designation of the Papahānaumokuākea Marine National Monument PSSA on the basis of the draft text annexed to document MEPC 57/7 and include relevant references to the APMs which were adopted by MSC 83 (MSC 83/28, annexes 25 and 26); and
- .2 review the information concerning the adequacy of port reception facilities for the “Mediterranean Sea area” as a Special Area under MARPOL Annex V and prepare a draft MEPC resolution on the establishment of the date on which regulation 5(1)(a) of MARPOL Annex V in respect of the “Mediterranean Sea area” as a Special Area shall take effect.

Consideration of the report of the Drafting Group

7.19 The Committee, having considered the report of the Drafting Group (MEPC 57/WP.9), approved it in general and, in particular, adopted:

- .1 resolution MEPC.171(57), designating the Papahānaumokuākea Marine National Monument as a Particularly Sensitive Sea Area, as set out in annex 12; and
- .2 resolution MEPC.172(57), on the establishment of the date on which regulation 5(1)(a) of MARPOL Annex V in respect of the Mediterranean Sea area as a Special Area shall take effect, as set out in annex 13.

8 INADEQUACY OF RECEPTION FACILITIES

Action Plan to tackle the inadequacy of port reception facilities

8.1 The Committee recalled that MEPC 55 had approved the draft Action Plan to tackle the inadequacy of port reception facilities prepared by FSI 14, which identified a number of work items, each item containing: background information; the item’s priority; its target completion date and the IMO body responsible for the work. MEPC 55 had instructed the FSI Sub-Committee to progress the work items described in the Action Plan, with the exception of work item 5.1 “Regulatory matters – Development of Guidelines for establishing regional arrangements for reception facilities”.

8.2 The Committee also noted that MEPC 56 had endorsed the decision of FSI 15 to establish a correspondence group under the coordination of Portugal to progress the work items with a target completion date of 2008 in the Action Plan, and to report back to FSI 16 in June 2008. The Committee would, therefore, be advised of the progress made on the Action Plan at its fifty-eighth session in October 2008.

8.3 The Committee recalled that, with regard to work item 5.1 of the Action Plan, at MEPC 55, recognizing that resolution MEPC.83(44) already provided guidance to the issue of regional arrangements, it had agreed that it was not appropriate to adopt a further MEPC resolution to recognize regional arrangements as satisfying MARPOL obligations, in view of the fact that the relevant MARPOL regulations require each Party to provide reception facilities and that regional arrangements may contravene the current MARPOL requirements. Recognizing, though, the benefit of having such regional arrangements in place, MEPC 55 had agreed to recognize regional arrangements as a means of providing reception facilities, and had requested Member States to provide their views to future sessions of the Committee on how these regional arrangements could be better institutionalized.

8.4 The Committee noted that no submissions on the matter had been submitted to MEPC 56 and MEPC 57.

8.5 In view of this situation, the Chairman proposed that a further extension for submissions to MEPC 58 should be given but, if again, no documents are received, it should be assumed that the Committee would be in agreement to institutionalize regional arrangements.

8.6 A number of delegations confirmed their acceptance of the Chairman's proposal except that they did not agree with the step of tacit approval in the event that no documents were submitted. In such a case, they believed that a specific proposal on this point should be put forward to MEPC 58 for consideration. Other delegations, however, expressed their full support for the Chairman's proposal.

8.7 In conclusion, the Committee reiterated its invitation to Member States to submit documents on regional arrangements to MEPC 58 for consideration, bearing in mind that the target completion date for work item 5.1 of the Action Plan was 2008 and that a resolution would therefore be needed at that meeting.

Marine litter and port reception facilities

8.8 Friends of the Earth International, in its submission MEPC 57/8, reviewed the regulatory measures that have been adopted in order to reduce marine litter generated by ships. It stated that different indicators showed little or no progress in solving the problems associated with marine litter and proposed that port reception facilities and waste handling on ships together with marine awareness of personnel on board ships should be given priority as short-term measures to reduce ship-generated waste which enters the marine environment.

8.9 Whilst there was support from a number of delegations for many of the points made in document MEPC 57/8, concern was expressed with respect to the proposal to remove explicit charges in favour of applying a no-special fee system. It was thought that, as an alternative, using separate charges was a preferred option.

8.10 Recognizing the value of many of the points addressed in the document, the Committee agreed to refer document MEPC 57/8 to the FSI Sub-Committee in its consideration of the items in the Action Plan to tackle the inadequacy of port reception facilities.

9 REPORTS OF SUB-COMMITTEES

Outcome of NAV 53

9.1 The Committee noted that the fifty-third session of the Sub-Committee on Safety of Navigation (NAV 53) was held from 23 to 27 July 2007.

9.2 The Committee also noted that, in the context of the “Identification and Protection of Special Areas and Particularly Sensitive Sea Areas”, the outcome of NAV 53, in relation to the Associated Protective Measures (APMs) for the Galapagos Archipelago PSSA and the Papahānaumokuākea Marine National Monument PSSA had been addressed under agenda item 7 and that there were no further actions requested of the Committee.

Outcome of BLG 12

9.3 The Committee noted that the twelfth session of the Sub-Committee on Bulk Liquids and Gases (BLG 12) was held from 4 to 8 February 2008.

9.4 With respect to urgent matters emanating from BLG 12, the Committee noted that items relating to “Harmful aquatic organisms in ballast water” and to the “Prevention of air pollution from ships” had been addressed under agenda items 2 and 4 respectively.

9.5 The Committee noted further that the outcome of BLG 12 concerning other matters of relevance to its work would be submitted to MEPC 58 (October 2008) for consideration.

Outcome of DE 51

9.6 The Committee noted that the fifty-first session of the Sub-Committee on Ship Design and Equipment (DE 51) was held from 18 to 22 February 2008.

9.7 The Committee also noted that the outcome of DE 51 relating to the Committee’s work will be submitted to MEPC 58 for consideration. In this connection, the Committee noted that DE 51 had completed its work on the “Review of MEPC.1/Circ.511 and relevant MARPOL Annex I and Annex VI requirements” and had agreed draft amendments to MARPOL Annex I, IOPP Certificate Supplements, the Oil Record Book and the Revised Guidelines for handling oily wastes in machinery spaces of ships.

Outcome of DSC 12

9.8 The Committee noted that the twelfth session Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC 12) was held from 17 to 21 September 2007 and that its report was issued as DSC 12/19.

9.9 The Committee noted that, in DSC.1/Circ.54 (Information on the amendments to the marine pollutants provisions), the dates for the voluntary application period are from 1 January 2009 to 1 January 2010 (MEPC 57/9).

9.10 In considering the matters emanating from DSC 12, the Committee noted that the decision by DSC 12 to amend chapter 3 of the IMDG Code was to clarify the requirements of a “proper shipping name” as required by the IMDG Code as distinct from the “correct technical name” as required by MARPOL Annex III.

9.11 The Committee endorsed the course of action taken by DSC 12 concerning DSC.1/Circ.54 on information of the amendments to the marine pollutant provisions, which would take effect through amendment 34-08 to the IMDG Code.

9.12 The Committee also endorsed the course of action taken by DSC 12 concerning DSC.1/Circ.55 giving guidance on the application of chapter 2.10 (marine pollutants) of the IMDG Code (amendment 33-06).

10 WORK OF OTHER BODIES

10.1 Under this agenda item the Committee had before it three session documents and one information document, plus a related document (A 25/8/2 by the Secretary-General), and agreed to deal with them in the following order:

- .1 Outcome of MSC 83: document MEPC 57/10;
- .2 Outcome of A 25: document MEPC 57/10/1; and related document A 25/8/2 on Consolidated Audit Summary Report; and
- .3 GESAMP: Status report of activities: document MEPC 57/INF.8.

10.2 The Committee noted that document MEPC 57/10/2 concerning Boundary issues between MARPOL Annex V and the London Convention/Protocol had been considered under agenda item 5 as it was related to the review of MARPOL Annex V.

OUTCOME OF MSC 83

10.3 The Committee noted that the eighty-third session of the Maritime Safety Committee was held in Copenhagen (Denmark) from 3 to 12 October 2007 and its report was circulated as document MSC 83/28 and Adds. 1, 2 and 3. Those matters of relevance to the Committee’s work had been reported in document MEPC 57/10 (Secretariat).

10.4 The Committee noted also that the outcome of MSC 83 on Particularly Sensitive Sea Areas (PSSAs), Human Element, Formal Safety Assessment, Work Programmes and Application of the Committees’ Guidelines was considered under agenda items 7, 16, 17, 18 and 19, respectively.

10.5 In considering document MEPC 57/10, the Committee agreed to note, in general, the outcomes of MSC 83 on all issues of relevance to the Committee’s work and take MSC 83’s action into account, as appropriate, under the relevant items of its agenda.

10.6 The Committee noted, in particular, that MSC 83 had taken action on the following matters of interest to its work, as reported hereunder:

- .1 adoption of amendments to SOLAS Chapter VI on Material Safety Datasheets for MARPOL Annex I cargoes;

- .2 adoption of a performance standard for protective coatings for void spaces on bulk carriers and oil tankers;
- .3 inclusion of a new high priority item on “Measures to prevent explosions on oil and chemical tankers transporting low flashpoint cargoes” in the FP Sub-Committee’s work programme;
- .4 approval of MSC-MEPC.2/Circ.7, after endorsing MEPC 56’s concurrent decision, on Provision of information in respect of products carried in accordance with the requirements of MARPOL Annex II and the IBC Code;
- .5 instruction to the STW Sub-Committee to consider the **Cougar Ace** casualty in the context of training requirements for ballast water exchange;
- .6 approval of MSC-MEPC.4/Circ.2, after endorsing MEPC 56’s concurrent decision, on the Code of good practice to assist PSCOs in conducting their inspections;
- .7 approval of a Unified Interpretation, which is very similar to that for regulation 1.28 of MARPOL Annex I, on “unforeseen delay in delivery of ships” in the context of SOLAS regulation II-1/3-2 on Corrosion prevention of seawater ballast tanks in oil tankers and bulk carriers; and
- .8 agreement to refer the report of the second meeting of the Joint IMO/FAO *Ad Hoc* Working Group on IUU Fishing and Related Matters (MSC 83/15/1 and MSC 83/INF.12), which had been held from 16 to 18 July 2007 at the Headquarters of FAO in Rome, to FSI 16 for detailed consideration.

10.7 In considering the action requested of the Committee (MEPC 57/10, paragraph 44), the Committee noted that MSC 83:

- .1 adopted resolution MSC.242(83) on the Use of long-range identification and tracking information for safety and marine environmental protection purposes;
- .2 endorsed MEPC 56’s approval of the holding of an intersessional meeting of the ESPH Working Group in the latter part of 2008; and
- .3 in examining the invitation by MEPC 56 to consider a proposal by India to defer to 1 January 2009 the application date of the amendments to the BCH (adopted by resolution MEPC.144(54)), concluded that no action should be taken because, in accordance with the said resolution, ships should comply with the amendments to the BCH Code as from 1 August 2007 and, legally, the date of application could not be modified.

10.8 With respect to resolution MSC.242(83) referred to above, the Committee, having noted the concern expressed by the delegation of Panama that the resolution also relates to certain environmental aspects, agreed to invite the MSC to seek the views of the Committee prior to adopting similar resolutions in the future.

10.9 In noting the decision by MSC 83 with regard to the application date of the 2007 amendments to the BCH Code adopted by resolution MEPC.144(54), specifically as

they relate to the fire protection requirements, the Committee acknowledged that an anomaly existed, as regards their date of applicability, between these particular amendments and those in the 2009 IBC Code. In view of the fact that there were no means to legally correct the anomaly timely, the Committee did not take any action in this respect.

10.10 The Committee, on the issue of its previous endorsement at MEPC 56 (MEPC 56/23, paragraph 10.40) of FSI 15's decision to commence the revision of the Revised Guidelines on the implementation of the International Safety Management (ISM) Code by Administrations (resolution A.913(22)), agreed to MSC 83's invitation to revert that endorsement following MSC 83's view that the FSI Sub-Committee should no longer be tasked with the revision but that this work should be directed to the Joint MSC/MEPC Working Group on Human Element.

10.11 The Committee, further, on the issue of its previous endorsement at MEPC 56 (MEPC 56/23, paragraph 10.40), of FSI 15's decision to develop amendments to the ISM Code, including those relating to requirements for seafarer safety representation, agreed to MSC 83's invitation to revert that endorsement following MSC 83's decision to instruct the Joint MSC/MEPC Working Group on Human Element to develop the said amendments.

10.12 Having noted MSC 83's concurrent decision, the Committee approved MSC-MEPC.3/Circ.2 on the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident, to allow for the Code to be implemented on a voluntary basis prior to its effective date.

10.13 In this respect, the delegation of the United States indicated that, consistent with their statement made at MSC 83 (MSC 83/28, paragraph 15.16), the United States reserved its position on the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident as, regrettably, the Code, because of the inclusion of certain provisions not directly related to promoting maritime safety, created fundamental and irreconcilable conflicts with important aspects of United States domestic law.

OUTCOME OF A 25

10.14 The Committee recalled that the twenty-fifth session of the Assembly was held at the Royal Lancaster Hotel, London, from 19 to 30 November 2007 and its decisions were issued as A 25/5(b)/2. Those matters of relevance to the Committee had been reported in document MEPC 57/10/1 (Secretariat).

10.15 In this context, the Committee recalled also that the twenty-fourth extraordinary session of the Council was held on 15 and 16 November 2007 and its outcome on matters of relevance to the Committee had been considered by the Assembly (summary of decisions issued as C/ES.24/D); therefore no separate report had been prepared for this session of the Committee as the outcome of C/ES 24 had been covered by A 25's consideration.

10.16 In considering document MEPC 57/10/1, the Committee noted that the Assembly had considered those issues arising from the last three sessions of the Committee (54th, 55th and 56th) which had been brought to its attention and that the Assembly had noted, *inter alia*, the following main decisions and actions by the Committee during the biennium under review:

- .1 the adoption of amendments to MARPOL Annexes I, III and IV; the Condition Assessment Scheme; the IBC and BCH Codes; and the 1973 Intervention Protocol;

- .2 that the Committee had undertaken a revision of MARPOL Annex VI and the NO_x Technical Code, with the support of the BLG Sub-Committee, and that MEPC 56 had approved a revised timetable for such a revision with a view to approval of the relevant amendments at MEPC 57 and subsequent adoption at MEPC 58;
- .3 the progress made in taking follow-up actions to resolution A.963(23) on IMO policies and practices related to reduction of greenhouse gas emissions from ships, including the adoption, at MEPC 55, of a work plan with a timetable ending at MEPC 59 to develop a CO₂ Emission Indexing Scheme; a CO₂-emission baseline; and technical, operational and market-based methods;
- .4 that MEPC 56 had decided to undertake an update of the 2000 IMO GHG Study with a view to assisting the Committee to make well-informed decisions for the control of greenhouse gas emissions from ships;
- .5 the ongoing work in respect of guidelines required under the BWM Convention; approval of ballast water managements systems that make use of active substances; and availability of ballast water treatment technologies to achieve the D-2 performance standard by 1 January 2009;
- .6 the progress made in the development of the draft International Convention for the Safe and Environmentally Sound Recycling of Ships; and that C 97 had approved the budget for a diplomatic conference to be held in 2009 for the adoption of the convention;
- .7 the decision to establish 1 August 2008 as the date when the discharge requirements for the southern South African waters Special Area (MARPOL Annex I) and the Gulfs area Special Area (MARPOL Annexes I and V) would be implemented; as well as the approval, in principle, of the designation of the Papahānaumokuākea Marine National Monument (North-Western Hawaii Islands) as a Particularly Sensitive Sea Area;
- .8 the action taken concerning the revitalization of GESAMP after a long period of reorientation and review, and the substantial support (US\$1,100,000) from the Swedish International Development Co-operation Agency (SIDA) for the period from 2006 to 2008.

Resolutions adopted by the Assembly

10.17 The Committee noted that A 25 had adopted the following resolutions which relate to the work of the Committee:

- .1 resolution A.996(25) – Code for the Implementation of Mandatory IMO Instruments, 2007;
- .2 resolution A.997(25) – Survey Guidelines under the Harmonized System of Survey and Certification, 2007;
- .3 resolution A.998(25) – Need for capacity-building for the development and implementation of new, and amendments to, existing instruments; and

- .4 resolution A.1005(25) – Application of the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004.

10.18 The Committee noted, in particular, that, by resolution A.998(25) on need for capacity-building, the Assembly, considering that the lack of capacity within States had a direct relationship with the level and quality of implementation of existing or new instruments, had, *inter alia*:

- .1 recommended that the committees should establish a mechanism to identify new instruments requiring the provision of technical assistance prior to implementation, issues requiring special focus when developing technical co-operation and assistance activities relating to the implementation of new measures, and new instruments requiring a simplified guide for implementation; and
- .2 instructed all IMO organs, under the coordination of the Council, to make arrangements, within their work programmes and guidelines on the organization and method of their work, so as to enable as many Member States as possible to participate actively in the work of such organs and their subsidiary bodies.

10.19 The Committee noted also that, by resolution A.1005(25) on the application of the BWM Convention, the Assembly specifically had requested the Committee to:

- .1 keep the resolution under review;
- .2 revise or withdraw the recommendations in paragraphs 2, 3 and 4 of the resolution as appropriate;
- .3 review, not later than MEPC 58, in particular, the issue of a ship subject to regulation B-3.3 constructed in 2010 and the immediate availability of type-approved technology for such a ship to meet the D-2 standard; and
- .4 inform the Assembly accordingly.

10.20 The Committee, noting the Assembly’s request in paragraph 10.19.3 above, agreed to invite Member Governments and interested observers to submit proposals to MEPC 58 for the review.

Strategy and Planning

10.21 The Committee noted A 25’s consideration on the Strategic Plan and High-level Action Plan of the Organization and priorities for the 2008-2009 biennium (A 25/7(b), annex) and that, in this context, the Assembly had adopted:

- .1 resolution A.989(25) – Strategic Plan for the Organization (for the six-year period 2008 to 2013) which revoked resolution A.970(24) on the same subject and set out a mission statement of the Organization; trends; developments and challenges; strategic directions; and related performance indicators; and

- .2 resolution A.990(25) – High-level Action Plan of the Organization and Priorities for the 2008-2009 Biennium, which revoked resolution A.971(24) on the same subject and was developed with inputs from all the committees.

10.22 The Committee noted, in particular, that resolution A.990(25), which is both on the high-level actions related to the Strategic Plan for the Organization and on the consequent planned output of the committees for the 2008-2009 biennium, requested all the committees to act as follows:

- .1 when reporting on their work to the Assembly and Council during the 2008-2009 biennium, to ensure that they report progress towards fulfilling the Organization's aims and objectives using the framework of the strategic directions, high-level actions and planned biennial outputs;
- .2 when considering proposals for new work programme items, to ensure that, in accordance with their Guidelines for the organization and method of their work and, as appropriate, that of their subsidiary bodies, the issues to be addressed are those which fall within the scope of the Strategic Plan and the High-level Action Plan;
- .3 to review and revise their Guidelines for the organization and method of their work in the light of the guidelines to be developed by the Council on the application of the Strategic Plan and the High-level Action Plan;
- .4 when considering amendments to existing conventions, particularly those which have been in force for a short period, to take fully into account the directives in resolution A.500(XII); and that due attention should be given to the requirement that a well-documented compelling need must be demonstrated for the development and adoption of new or revised standards; and
- .5 when making recommendations for their biennial work programmes, to bear in mind the desirability of not scheduling more than one diplomatic conference in each year, save in exceptional circumstances.

10.23 The Committee, having noted the above, agreed to conduct its proceedings in accordance with the requests by the Assembly.

Voluntary IMO Member State Audit Scheme

10.24 The Committee noted that A 25, with regard to document A 25/8/2 which presented the Consolidated Audit Summary Report of the eight audits carried out so far, had endorsed the course of action proposed by the Secretary-General for the circulation of future consolidated audit summary reports, either as Council or Assembly documents, as appropriate, and had requested the MSC and the Committee to consider the document and to inform the Council of the outcome of their consideration in due course.

10.25 The Committee noted also that, as required by paragraph 7.4.2 of the Procedures for the Audit Scheme, document A 25/8/2 contained the first consolidated audit summary report of eight of the audits conducted during 2006 and 2007 which were reflected under the four categories of *General* (findings relating to strategy, organization and legal system, with the latter dealing

mainly with the incorporation of mandatory IMO instruments into national law), *flag State activities*, *port State activities* and *coastal State activities*, respectively.

10.26 The Committee noted further that the findings provided valuable lessons on the enforcement and implementation of the 10 mandatory IMO instruments thus far covered by the Scheme. The findings also identified areas where States, in exercising their rights, meeting their obligations and discharging their responsibilities attendant to the applicable mandatory IMO instruments, had, either fallen short in some areas or had encountered some difficulties in doing so, although it should be borne in mind that, in general, the audits had found that the Member States concerned substantially met their obligations under the various mandatory instruments.

Action requested of the Committee by A 25

10.27 The Committee, having considered the action requested of it in paragraph 30 of document MEPC 57/10/1:

- .1 noted the approval by the Assembly of the reports of the Committee on its fifty-fourth, fifty-fifth and fifty-sixth sessions as presented in document A 25/11;
- .2 noted the requests by the Assembly of the Committee as contained in resolutions A.996(25), A.997(25), A.998(25) and, in particular, A.1005(25);
- .3 noted the requests by the Assembly of the Committee as contained in resolution A.990(25) – High-level Action Plan of the Organization and Priorities for the 2008-2009 Biennium; and
- .4 agreed to refer document A 25/8/2 on the Consolidated Audit Summary Report to the FSI Sub-Committee for consideration, taking into account comments and decisions made by the Committee, and report back to a future session of the Committee to inform the Council in due course.

GESAMP: STATUS REPORT OF ACTIVITIES

10.28 The Committee considered document MEPC 57/INF.8 (Secretariat) providing a report on the status of the activities of the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP).

10.29 The Committee noted that the recent activities and achievements of GESAMP included the establishment of a GESAMP office hosted by the Organization and that a Strategic Plan for a “New GESAMP” published in 2005 provided the template for its revitalization. The Swedish Government was currently co-operating in the revitalization and modernization of GESAMP’s working methods through financial support and the secondment of a full-time GESAMP Officer from the Swedish Maritime Administration.

10.30 The Committee recognized that the work of GESAMP is important for IMO, particularly for the MEPC, given that two working groups under the auspices of GESAMP serve the work of the Committee on an ongoing basis:

- .1 the GESAMP/EHS Working Group; and
- .2 the GESAMP Ballast Water Working Group.

10.31 The Committee noted finally that, in September 2007, GESAMP set up a dedicated Task Team which will perform a review of marine assessments related to marine pollution of the open ocean, including ship-based pollution and atmospheric inputs; and that the Task Team would report to the lead agencies of the Assessment of Assessments process (UNESCO-IOC and UNEP) by April 2008.

10.32 The Committee expressed appreciation to the Secretariat for this useful information and thanked Sweden for its generous contribution to the activities of GESAMP.

11 STATUS OF CONVENTIONS

11.1 The Committee noted the information on the status of IMO conventions and other instruments relating to marine environment protection (MEPC 57/11) as follows:

- .1 Annex 1 shows the status, as at 11 December 2007, of the IMO conventions and other instruments relating to marine environment protection;
- .2 Annex 2 shows the status, as at 11 December 2007, of MARPOL;
- .3 Annex 3 shows the status, as at 11 December 2007, of the amendments to MARPOL;
- .4 Annex 4 shows the status, as at 11 December 2007, of 1990 OPRC Convention;
- .5 Annex 5 shows the status, as at 11 December 2007, of 2000 OPRC-HNS Protocol;
- .6 Annex 6 shows the status, as at 11 December 2007, of 2001 AFS Convention; and
- .7 Annex 7 shows the status, as at 11 December 2007, of 2004 BWM Convention.

11.2 The Committee also noted the following information provided by the Secretariat since MEPC 57/11 was issued on 11 December 2007:

- .1 With regard to annex 2 on the status of MARPOL:
 - .1 Kenya deposited its instrument of accession to MARPOL Annex VI on 14 January 2008; and
 - .2 Sierra Leone deposited its instrument of accession to MARPOL Annex VI on 10 March 2008.
- .2 With regard to annex 4 on the status of 1990 OPRC Convention:
 - .1 Albania deposited its instrument of accession on 2 January 2008; and
 - .2 Sierra Leone deposited its instrument of accession on 10 March 2008.

- .3 With regard to annex 5 on the status of 2000 OPRC-HNS Protocol:
 - .1 The Republic of Korea deposited its instrument of accession on 11 January 2008.
- .4 With regard to annex 6 on the status of 2001 AFS Convention:
 - .1 Bahamas deposited their instruments of accession on 30 January 2008; and
 - .2 Hungary deposited their instruments of accession on 30 January 2008.
- .5 With regard to annex 7 on the status of 2004 BWM Convention:
 - .1 Kenya deposited its instrument of accession on 14 January 2008; and
 - .2 Mexico deposited its instrument of accession on 18 March 2008.

12 HARMFUL ANTI-FOULING SYSTEMS FOR SHIPS

12.1 The Committee noted that the conditions for entry into force of the AFS Convention were met on 17 September 2007 and the instrument will enter into force on 17 September 2008. To date, 28 States had ratified the Convention, representing about 43.79% of the world's merchant shipping.

Update on the Anti-fouling Systems Convention

12.2 The Committee considered document MEPC 57/12 (Secretariat), which provides a progress report on developments related to the AFS Convention and recalled that Annex 1 to the AFS Convention stipulates that, by the effective date of 1 January 2003, all ships shall not apply or re-apply organotin compounds which act as biocides in anti-fouling systems, and that by the effective date of 1 January 2008, ships either: (1) shall not bear such compounds on their hulls or external parts or surfaces; or (2) shall bear a coating that forms a barrier to such compounds leaching from the underlying non-compliant anti-fouling systems.

12.3 The Committee noted that, given that the AFS Convention will enter into force on 17 September 2008 after these two dates had passed, document MEPC 57/12 (Secretariat) had drawn the attention of the Committee to the advice provided by the Legal Office of the Organization during the 2001 AFS Conference, and that, following this advice, the application of the provisions on the two effective dates of 1 January 2003 and 1 January 2008 stipulated in Annex 1 to the AFS Convention should be deemed to take effect on the date of entry into force of the AFS Convention, i.e. 17 September 2008.

12.4 In that context, the Head of the Sub-division of Legal Affairs of the Organization indicated that document AFS/CONF/RD/2 "Record of Decisions of the Plenary" containing the legal advice provided by the Legal Office of the Organization to, and accepted by, the AFS Conference, should be considered as "preparatory work to the treaty" in accordance with Article 32 "Supplementary means of interpretation" of the Vienna Convention on the Law of the Treaties. On this legal basis, he reaffirmed the views of the Legal Office in the sense that any legal requirement contained in the AFS Convention should take effect among Parties only as from the date of its entry into force, namely 17 September 2008.

12.5 In the ensuing discussion, the Committee noted the support for the above advice from one Member State.

12.6 The observer from the European Commission reiterated its statement made at previous sessions that, based on the AFS Convention, the European Union (EU) adopted Regulation (EC) No.782/2003 on the prohibition of organotin compounds on ships in 2003, which prohibits the application or reapplication of organotin compounds acting as biocides in anti-fouling systems on ships flying the flag of an EU Member State from 1 July 2003. The Regulation also contains provisions which do not allow any ship with a tin-based anti-fouling system to enter any EU port or offshore terminal from 1 January 2008. In this connection, the Committee noted that, apart from the Regulation (EC) No.782/2003, the majority of the European Union Member States had also ratified the AFS Convention.

12.7 The delegation of France made the point that the advice on the two effective dates, as contained in document MEPC 57/12, appeared to be different than the decision made by the Committee at MEPC 56 when considering the legal effect on the application dates contained in the BWM Convention, and suggested an exhaustive examination on this matter before taking any decision.

12.8 The delegation of the United States expressed the view that it is well established that a flag or port State can implement even identical provisions to those found in the Convention, for those ships over which the State chooses to exercise its jurisdiction. Furthermore, the delegation of the United States was of the view that the fixed dates contained in MARPOL Annex VI and the BWM Convention have substantially different meaning and context compared to the effective dates in the AFS Convention. With respect to the AFS Convention, the United States believed that the requirements in the AFS Convention do not have enforceable legal effect prior to its entry into force and the Convention does not require a Party to apply its provisions retroactively from the time of its entry into force. The delegation of the United States emphasized that the effective dates in the AFS Convention can be amended only through the amendment procedures set forth in the Convention itself and the fact that the date of entry into force for a State will vary accordingly to when that State formally indicates its intention to be bound by the Convention. Finally, the United States delegation informed the Committee about the progress of the national legislation towards the ratification of the AFS Convention.

12.9 The Committee, recognizing that there was no consensus on the date on which the provisions associated with the two effective dates contained in Annex 1 of the AFS Convention should be applied, and bearing in mind the fact that States have their own legal systems, agreed that such provisions should be left for each State to apply in accordance with its national legislation.

12.10 In this connection, the Committee invited Member States to provide the Organization with information regarding any anti-fouling systems approved, restricted, or prohibited under its domestic law in accordance with Article 9(1)(b) of the AFS Convention and other information regarding the implementation and enforcement of the Convention.

Request for clarification of certain provisions in the AFS Convention

12.11 The Committee noted that IACS had submitted document MEPC 57/12/1 requesting clarification on certain provisions of the AFS Convention, including those concerning ship survey and certification. In light of the Committee's decision on the two effective dates

contained in Annex 1 of the AFS Convention, the IACS observer, in conjunction with the chairman, was of the view that there was no value in pursuing the matter further.

Interim advice on the management of waste streams resulting from the removal of anti-fouling systems from ships

12.12 The Committee recalled that it had invited Members to develop guidance on the environmentally sound management of wastes from the application or removal of harmful anti-fouling systems. The Committee recalled further that MEPC 56, having noted the progress made by the intersessional Correspondence Group, established under the London Convention, on “Management of waste streams resulting from the removal of anti-fouling systems from ships”, had invited the Consultative Meeting of Contracting Parties to the London Convention to prepare a report on best management practices for consideration by the MEPC.

12.13 In that context, the Committee noted the information provided in document MEPC 57/INF.2 (Secretariat), containing interim advice on the management of waste streams resulting from the removal of anti-fouling systems from ships and the plan under the London Convention and Protocol to provide comprehensive advice on Best Management Practices for the removal of anti-fouling paints from ships to MEPC 58.

13 PROMOTION OF IMPLEMENTATION AND ENFORCEMENT OF MARPOL AND RELATED INSTRUMENTS

13.1 The Committee considered documents MEPC 57/13 and MEPC 57/13/1, both submitted by the Secretariat, providing information on issues related to the Global Integrated Shipping Information System (GISIS).

13.2 Further to the information contained in document MEPC 57/13, the Secretariat provided an update on the development and current status of GISIS. The Committee noted that there are currently eight modules available to IMO Members and seven to the public on: maritime security, maritime casualties and incidents, recognized organisations, port reception facilities, condition assessment scheme (CAS), pollution prevention equipment (PPE), ship identification and national contact points.

13.3 The Committee further noted that the modules relevant to the implementation of MARPOL and associated instruments are: port reception facilities, CAS, PPE and national contact points. A further module on Bulk Chemicals, intended to facilitate compliance with MARPOL Annex II and IBC Code requirements, is currently under development.

13.4 In document MEPC 57/13/1 the Secretariat provided information on the setting up of the PPE module which had been fully operative since 1 February 2008. The Committee noted that, in accordance with the decision of MEPC 54, the PPE module stores data relating to the following PPE approved by Governments (relevant resolutions in brackets):

- .1 oil filtering equipment and oil content meters for bilge alarms (MSC.60(33));
- .2 oil content meters for oily water from cargo tanks (A.586(14));
- .3 oil/water interface detectors (MEPC.5(XIII));
- .4 sewage treatment plants (MEPC.2(VI));

- .5 shipboard incinerators (MEPC.59(33), MEPC.76(40) and MEPC.93(45));
- .6 15 ppm bilge separators and 15ppm bilge alarms (MEPC.107(49));
- .7 oil content meters for oily water from cargo tanks (MEPC.108(49)); and
- .8 sewage treatment plants (MEPC.159(55)).

13.5 The Committee noted also that the establishment of the PPE module was communicated to Member Governments by means of Circular letter No.2823, dated 1 November 2007, and that it had replaced the MEPC.5/circular series. The public access area of the module allows access on a read-only basis to any person after a simple registration process. However, only Member Governments have the right to enter, update, modify or delete data.

13.6 Having noted the above information, the Committee, recognizing that there was still work to be done in order to ensure that the GISIS PPE module provides reliable, comprehensive and accurate data on PPE approved by Governments for the benefit of the maritime community at large, called on Member States to make efforts in order to keep up-to-date the information on valid approved PPE stored in the database.

14 FOLLOW-UP TO UNCED AND WSSD

14.1 The Committee recalled that MEPC 56, having noted that no documents had been submitted under this agenda item since MEPC 52, had discussed a suggestion to delete this item from its agenda, taking into account paragraph 3.15 of the Committees' Guidelines (MSC-MEPC.1/Circ.1) that, if no submissions have been received for a particular item for two consecutive sessions, the Committee should consider the deletion of the item concerned. The Committee also recalled that MEPC 56 had agreed to postpone the decision until this session, pending a report on progress on actions requested of the Organization by the 2002 World Summit on Sustainable Development (WSSD).

14.2 The Committee, in considering information contained in document MEPC 57/14 (Secretariat), noted that actions addressing the protection of the marine environment had already been completed or were being undertaken under other agenda items of the Committee. The Committee also noted that the High-level action plan and priorities of the Organization were drawn up with the need to enhance maritime safety and security and protection of the marine environment from pollution in mind, thereby ensuring that the WSSD objectives are continuously pursued.

14.3 The delegations that spoke agreed that the information provided in document MEPC 57/14 is useful, for instance, in evaluating progress for Johannesburg +10, in 2012.

14.4 In the ensuing discussion on this matter, the Committee agreed to delete this item from its agenda, noting that, if needed, submissions on this topic could be considered under "Any other business" or "Work of other bodies", as appropriate.

15 TECHNICAL CO-OPERATION PROGRAMME

15.1 The Committee recalled that, given the importance of technical co-operation in the work of the Organization, updates on TC activities are prepared for the attention of the Committee at each session with exhaustive status reports at MEPC spring sessions in non-Assembly years.

15.2 The Committee recalled that MEPC 52 approved the updated thematic priorities and the Committee's contribution to the ITCP for 2006-2007. These formed the basis for the preparation of the marine environment-related components of the overall ITCP for 2006-2007.

15.3 The Committee recalled that MEPC 55 approved the Committee's contribution to the overall IMO ITCP for 2008-2009 and instructed the Secretariat to finalize such input for inclusion by the IMO Technical Co-operation Division into the overall ITCP, which was considered and endorsed by TCC at its fifty-seventh session in June 2007. The overall ITCP was subsequently approved by the IMO Council at its ninety-eighth session.

15.4 The Committee considered five documents prepared by the Secretariat (MEPC 57/15, MEPC 57/15/Corr.1, MEPC 57/15/Add.1, MEPC 57/15/1 and MEPC 57/15/2) covering the activities implemented during the biennium 2006-2007. The first three documents provide a status report on the activities of the ITCP related to the protection of the marine environment undertaken during the period from 1 January 2006 to 31 December 2007. They also cover the activities carried out under the major projects and other related activities during the same period. Documents MEPC 57/15/1 and MEPC 57/15/2 provide respectively a status report on the activities under the EC/MEDA funded project on EUROMED Co-operation on Maritime Safety and Prevention of Pollution from Ships (SAFEMED) and a status report on the implementation of the Protocol to the Barcelona Convention concerning co-operation in Preventing Pollution from ships and, in case of Emergency, combating Pollution of the Mediterranean Sea. The Committee further noted that, as in the past, the principal achievements pertain mainly to the training of officials in seminars/workshops/training courses on marine environment protection, in particular the OPRC and MARPOL Conventions, promotion and enhancement of regional co-operation through the development of regional actions such as strategic action plans for the implementation of the MARPOL and OPRC Conventions, regional contingency plans for combating accidental marine pollution, environmental waste management guidelines for port operation, etc. With regard to the OPRC Convention, the Committee noted the important achievements made during the biennium under the IMO/Oil industry Global Initiative (GI) and especially under the IMO-Industry funded GI Project for West and Central Africa.

15.5 The Committee recalled that during MEPC 56 it was updated on the successful outcome of IMO's proposal to the Global Environment Facility, to implement the GloBallast Partnerships Project, in cooperation with United Nations Development Programme (UNDP). GloBallast Partnerships, will build on the GloBallast Pilot Project and will focus on the implementation of the Ballast Water Management Convention by assisting developing countries to enact legal, policy and institutional reforms. The Project will include 13 Lead Partnering Countries (LPC) from 5 high priority sub-regions; namely Caribbean, Mediterranean, Red Sea and Gulf of Aden, the Pacific coast of South America, and the West Coast of Africa. The Committee recalled that specific regional capacity building activities for the South Pacific region have also been planned within the project. In addition, all member countries in the six sub-regions who have officially expressed interest in participating in the Project have been invited to participate in the regional capacity building activities.

15.6 The Committee further recalled that following the delegation of project implementation authority, IMO and UNDP had signed the Project Execution agreement on 17 September 2007. A Project Coordination Unit (PCU) was immediately set-up with the recruitment of a Chief Technical Adviser. The PCU since then had made significant progress in establishing a Global Project Task Force and initiating a number of project activities including regional training programmes. The Committee noted that the Project Inception meeting and the first meeting of the Global Project Task Force (GPTF) were organized from 26 to 28 March 2008 at IMO.

The GPTF was attended by the LPCs, Regional Coordinating Organizations and other Strategic Partners and a detailed project implementation plan for this 5-year Project was agreed and a work-plan for the 2008-2009 biennium identified.

15.7 The Committee noted the important work being undertaken by IMO in co-operation with the Industry and relating to the IMO/Industry Global Initiative Project for West and Central Africa (WACAF). MEPC 57 further noted that the project is co-funded by the two Organizations with in-kind support from the IOPC Funds and ITOPF and from a number of IMO member States, including the beneficiary countries themselves. The project, which is now in its second year, has contributed to the enhancement of the response capabilities of the WACAF countries and has consequently facilitated the process of establishing the West and Central Africa regional arrangements for co-operation in the field of marine pollution preparedness and response.

15.8 The Committee also noted that consultations are in a very advanced stage between IMO and the Industry for the development of a similar Global Initiative-type Project for the benefit of the countries of the South East Asia region.

15.9 The Secretary-General introduced Mrs. Monica Mbanefo as the new Director of the Technical Co-operation Division (TCD) following the retirement of Mr. David Edwards. In so doing, the Secretary-General underlined the importance of the work of TCD, including IMO's contribution to the work of the UN System as a whole for the attainment of the Millennium Development Goals. He referred to the decision taken by the Organization to place special emphasis on the maritime needs of Africa.

15.10 The Director, TCD, highlighted the major outcomes of TCC 57. The Committee noted that the new ITCP for 2008-2009 had been approved and was comprised of fourteen programmes, seven regional and seven global, including a new global one on support to Small Island Developing Countries (SIDs) and Least Developed Countries (LDCs). The Committee further noted the approval, by TCC 57, of a strategy for the long-term financing of the ITCP which recognized the important role of the member States, IGOs and NGOs and the Secretariat acting in partnership to increase the external funding of the ITCP in view of the increasing demand on the TC Fund.

15.11 The Committee was informed that in terms of sources of funding for technical co-operation activities, including major projects, approximately 50% of the total expenditure in 2007 was attributed to marine environment protection related activities. This reflected the interest of donors in environment protection programmes and the confidence in IMO's and, in particular, the Marine Environment Division's ability to develop and manage large scale projects related to the protection of the environment. The Committee also noted the organization of an Impact Assessment Exercise (IAE) of the ITCP covering the period from 2004 to 2007, the results of which will be presented at TC 58.

15.12 Finally, the Committee noted that a significant outcome of TCC 57 related to the endorsement of a consolidated document demonstrating the conceptual linkage between the goals of the ITCP and the relevant Millennium Development Goals (MDG's), in particular that related to "ensuring environmental sustainability" – MDG 7. To this effect, a resolution on such linkage was approved by the twenty-fifth session of the IMO Assembly in November 2007.

15.13 Many delegations congratulated the new Director, TCD and wished her well in her new position. One delegation noted that due regard should be given to other regions in addition to the

special emphasis placed on addressing Africa's technical assistance needs. Another delegation noted the technical support needed in the ongoing process of renovation of its national ports, including the development of port reception facilities.

15.14 The delegation of Sweden recalled its country's long-standing policy in supporting the Organization's technical co-operation programme and encouraged other donor countries and organizations to increase or sustain their support and contributions to the ITCP. It highlighted the "Delivering as One" initiative on UN system-wide coherence and the importance of co-ordination between IMO's technical co-operation programme and those carried out by other UN agencies.

15.15 The delegation of the Russian Federation thanked the Secretariat for the work done and also for the very informative documents prepared under this agenda item. They extended their special thanks to Mr. David Edwards, the former TCD Director, for his support during the past biennium. They informed the Committee of their involvement in many IMO Technical Co-operation activities related to OPRC-HNS and Ballast Water Management in the Western Pacific, Black Sea and Caspian Sea. The delegation further indicated their readiness to participate in, and support, all IMO Model Courses on OPRC-HNS to be held in the Western Pacific, the Black Sea and the Caspian Sea.

15.16 In reaction to the information provided by the Secretariat on the developments regarding the GloBallast Partnerships Programme, the delegations of Argentina, Barbados, Croatia, Egypt, Iran, Thailand, Turkey, and Venezuela thanked the Organization for its support in their efforts to address the issue of invasive aquatic species. They expressed their support, willingness and commitment to continue participating in IMO's TC activities in this field and especially in those programmed under the GloBallast Partnerships Programme. The delegation of Venezuela offered to make available to Member States its scientific facilities in the Isla de Aves, especially those designed for research on the issue of invasive aquatic species.

15.17 The delegation of the European Commission congratulated REMPEC and IMO for the successful implementation of the first phase of the SAFEMED project. That delegation also announced that, following the signature of the agreement between IMO and the European Commission in late 2007, the EC has financed a second phase of the project which will start in 2009 ending in 2011 with a budget of 5.5 million euros.

15.18 The delegation of India provided information on the follow-up of the GloBallast Pilot Phase project and, in particular, on the development of an electronic management tool in the form of a ballast water management form, which they offered to share, free of charge, with interested member States. They further informed the Committee that the Government of India had allotted US\$ 16.5 million for funding port baseline survey and risk assessment of eight major ports of India and for funding an appropriate ballast water treatment system testing facility in India. India offered to share its expertise with these countries participating in the new GloBallast Partnership Programme.

15.19 In the context of the many interventions made by the delegates, the Secretary-General thanked the Russian Federation for its kind words for Mr. David Edwards and assured them that he would personally convey those words of gratitude to Mr. Edwards. He further indicated that, as far as technical co-operation activities are concerned, IMO works in close co-operation with other sister organizations of the UN system, as advocated by the UN Secretary-General, and in keeping with the "Delivery as one" initiative. In this context, he referred to the UN Chief Executives Board for Coordination (CEB), which brings together, on a regular basis, the heads of

the UN agencies, Funds and Programmes under the Chairmanship of the UN Secretary-General where the issues of coordination and co-operation among UN system organizations are discussed.

15.20 The Chairman drew the Committee's attention to the fact that the constituent programmes of the IMO Integrated Technical Co-operation Programme can only be delivered if the required funding is secured from IMO's internal resources and/or external donor contributions. He expressed appreciation for all financial and in-kind contributions to the ITCP and invited Member States and international organizations to continue, and if possible increase, their appreciable support for IMO's technical co-operation activities so that successful delivery of the programme can be achieved.

15.21 The Committee took note of the information provided regarding the implementation of the technical co-operation activities for the period from July 2006 to March 2007.

16 ROLE OF THE HUMAN ELEMENT

16.1 The Committee recalled that the MSC and MEPC had agreed that the Joint MSC/MEPC Working Group on the Human Element should be convened at least once a year, preferably at alternate sessions of the MSC and the MEPC, as appropriate, following consultations between the Chairmen of the two Committees.

16.2 The Committee recalled that the Joint Working Group met during MEPC 56 and its report (MEPC 56/WP.8) had been considered and approved by MEPC 56 (July 2007) and that MSC 83 (October 2007) also approved the report of the Joint Working Group which had met at MEPC 56 (MSC 83/16).

16.3 The Committee noted that paragraphs 30 to 34 of the document MEPC 57/10 contained the outcome of MSC 83 on the report of the Joint MSC/MEPC Working Group. In this regard, the Committee noted the concurrent decision of MSC 83 on the following:

- .1 the updated action plan in the Organization's Strategy to address the Human Element;
- .2 MSC-MEPC.7/Circ.5 on Guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies; and
- .3 MSC-MEPC.7/Circ.6 on Guidance on the qualification, training and experience necessary for undertaking the role of a designated person under the provisions of the International Safety Management (ISM) Code.

16.4 The Committee noted that MSC-MEPC.7/Circ.5 and MSC-MEPC.7/Circ.6 had been disseminated.

16.5 The Committee further noted that MSC 83, having recalled the clarification by the MEPC's Chairman, had agreed that:

- .1 the Joint MSC/MEPC Working Group on Human Element should continue its work in accordance with the Organization's Strategy to Address the Human Element (MSC-MEPC.7/Circ.4);

- .2 there was no compelling need to establish a joint ILO/IMO working group at this stage to address issues relating to seafarers' training; hours of work and rest; manning levels; seafarers' fatigue; career and skill development, as these were already being addressed by the STW Sub-Committee on a regular basis; and
- .3 it was not appropriate to establish the proposed joint ILO/IMO working group with such wide and open ended terms of reference and that, in future, when preparing or reviewing other technical texts or proposals on matters within the technical competence of both Organizations, if considered necessary, to establish an *ad hoc* Joint ILO/IMO working group on a case-by-case basis with specific terms of reference to properly address the human element on a tripartite basis.

16.6 The Committee noted that the next meeting of the Joint MSC/MEPC Working Group on the Human Element would be held in May 2008 in conjunction with MSC 84. The outcome of that meeting will be brought to the attention of MEPC 58.

17 FORMAL SAFETY ASSESSMENT

17.1 The Committee recalled that MEPC 56 had noted that the one matter that needed consideration within the context of the Formal Safety Assessment Guidelines relevant to its work was the draft Environmental Risk Evaluation Criteria.

17.2 The Committee also recalled that, when it had deliberated this issue at MEPC 56, a number of delegations had recognized the need to carry out a more in-depth analysis of the proposed environmental risk assessment criteria for the purpose of the Formal Safety Assessment (FSA) before inclusion of such criteria in the IMO FSA Guidelines (MSC/Circ.1023-MEPC/Circ.392).

17.3 In this context, MEPC 56 had recognized that environmental risk assessment criteria are still under development and there was limited experience in their practical application. The Committee had therefore agreed that gaining practical experience with risk acceptance and cost benefit criteria is of importance in order to establish the criteria and threshold values for use in the decision-making process.

17.4 Noting that further work, including more research, was needed on the subject, MEPC 56 had subsequently agreed to establish a correspondence group, under the co-ordination of Greece*, with the following terms of reference:

* **Co-ordinator of the correspondence group:**
Professor Harilaos N. Psaraftis
Laboratory for Maritime Transport
Division of Ship Design and Maritime Transport
School of Naval Architecture and Marine Engineering
National Technical University of Athens
Iroon Polytechniou 9
Zografou 15773 Greece
Tel.: +302107721403;
Fax: +302107721408
E-mail: hnpсар@mail.ntua.gr

- .1 to review the draft Environmental Risk Acceptance Criteria as set out in annex 3 to document MEPC 55/18, taking into account document MEPC 56/18/1 (Greece) and the comments made in plenary with a view to finalize the Criteria; and
- .2 to submit a written report to MEPC 57.

17.5 The Committee further recalled that MSC 83 (3 to 12 October 2007), noting that there would be an outcome of MEPC 57 regarding environmental risk acceptance criteria and other submissions to future sessions, had agreed to retain the item in the provisional agenda for MSC 84, and invited Member Governments and international organizations to submit proposals and comments on the further improvements of the FSA Guidelines and the Guidance on the use of human element analysing process (HEAP).

17.6 Greece, in introducing document MEPC 56/17 on behalf of the correspondence group, explained both the method of work as well as the work carried out by the correspondence group in the intersessional period. In the former case it was pointed out that the group went through two rounds of submissions while a website was also established for submissions and supporting material and maintained to facilitate the exchange of views of members of the correspondence group.

17.7 The chairman of the correspondence group, when reporting on the work carried out, pointed out that if one interprets the term “environmental risk acceptance criteria” within a broad context, the analysis should include not only spills of cargo carried by oil tankers, but also bunker spills from any ship, shipbuilding and ship recycling residues, ballast water, coatings, garbage, sewage, gas emissions, noise, radioactive and other hazardous materials, bio-fouling, chemicals, other dangerous cargoes, and others. However, in light of the terms of reference of the group as set out in documents MEPC 55/18 and MEPC 56/18/1, these limited the scope of the analysis as they essentially focused only on oil pollution. Nevertheless it was implicitly understood that the analysis should not only be confined to ‘cargo spills’ from oil tankers, but also include oil pollution from any ship including bunker spills.

17.8 The chairman of the correspondence group further pointed out that much progress had been made but divergent views still remain on some key issues which require further discussions, in particular:

- .1 on establishing an appropriate Severity Index (SI) in the Hazid step;
- .2 whether “costs of averting a spill (CATS)” or an alternative criterion would offer the needed decision-making quality; and
- .3 the acceptable boundaries of the ALARP region, slope of F-N diagram and what is the variable of horizontal axis.

17.9 The delegations who spoke all supported the view that the work of the correspondence group should not be considered as the end of the analysis of environmental risk criteria in FSA and in light of the complexity of the subject, more time should be given to the group to bring its work to a logical conclusion. In this connection, the Russian Federation expressed the wish to join in the work of the Group.

17.10 The delegation of the Netherlands supported the use of spill volume in the definition of the risk index and the use of the CATS criteria. That delegation stressed that gaining experience with the said index and criteria was of the utmost importance.

17.11 The delegation of the United Kingdom underlined that Environmental Risk Evaluation Criteria (EREC) for FSA need to include all releases and impacts to the environment from shipping, given the current and predicted foci of legislators. In this connection, it informed the Committee that the United Kingdom had completed a research project and was keen to share the results of this project with members of the correspondence group with a view to evolving EREC that are inclusive of all environmental impacts of maritime transport for the development of FSA during ship life cycles. The report can be found at http://www.mcga.gov.uk/c4mca/final_report_rp_591-2.pdf.

17.12 Following its deliberations, the Committee noted that, due to short time available to the correspondence group, the work could not be completed in the intersessional period and that further work was needed on the subject. It therefore agreed to continue with the work of the correspondence group (led by Greece) with the following terms of reference:

- .1 review the draft Environmental Risk Acceptance Criteria as set out in annex 3 to document MEPC 55/18, taking into account document MEPC 57/17, other relevant documents discussed at previous sessions on the subject and the comments made in plenary with a view to finalize the Criteria; and
- .2 submit a written report to MEPC 58.

17.13 In the light of the work to be carried out, the Committee agreed to request MSC to retain the item in the Provisional agenda for MSC 85.

18 WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

Proposal for a new item on measures for minimizing the risk of ship strikes with cetaceans

18.1 The Committee noted the submission of Australia, Belgium, Italy, IUCN, IFAW and the UNEP/CMS/ASCOBANS Joint Secretariat (MEPC 57/18/2) on the proposal to develop an IMO guidance document for use by Member Governments in addressing the issue of ship strikes with cetaceans and to include it as a new item in the agenda of the Committee.

18.2 In this connection, the Committee noted that, the Chairman, in accordance with paragraph 2.20 of the Committee's Guidelines (MSC-MEPC.1/Circ.1), made a preliminary assessment on the proposed new item by Australia, Belgium, Italy, IUCN, IFAW and the UNEP/CMS/ASCOBANS Joint Secretariat (MEPC 57/WP.3, annex).

18.3 In the ensuing discussion, the Committee noted that some delegations had expressed concern for the lack of information, such as statistics on incidents of ship strikes with cetaceans and its impacts, which should also be submitted to justify the proposal. However, the majority of the delegations that spoke had expressed support for the proposal by Australia, Belgium, Italy, IUCN, IFAW and the UNEP/CMS/ASCOBANS Joint Secretariat for a new item in the agenda of the Committee.

18.4 The Chairman informed the Committee that involvement of the MSC and subsidiary bodies on the various aspects of the proposal on measures for minimizing the risk of ship strikes with cetaceans would depend on information provided by Member Governments at the next session of the Committee.

18.5 The Committee, having considered the proposal and comments made by delegations, approved the inclusion of a new high-priority item on “Development of a guidance document for minimizing the risk of ship strikes with cetaceans” in the agenda of MEPC 58 (October 2008) with a target completion date of 2010 (three sessions). The Committee then invited Member Governments to submit appropriate documents to MEPC 58 for consideration.

18.6 The United States informed the Committee that it would submit a document on ship strikes with cetaceans to MEPC 58 under the new agenda item.

Work programme and provisional agenda of the BLG and FSI Sub-Committees

18.7 The Committee recalled that MSC 83 (3 to 12 October 2007) noted that MEPC 56 had agreed to include, in the work programme of the BLG Sub-Committee, a high priority item on “Development of international measures for minimizing the translocation of invasive species through bio-fouling of ships”, with target completion date of 2010 (MSC 83/28, paragraph 25.3).

18.8 The Committee noted that MSC 83 revised and approved the work programme of the BLG Sub-Committee and provisional agenda for BLG 12 with the following changes, and requested the Secretariat to inform the MEPC accordingly (MSC 83/28, paragraphs 25.6 to 25.10):

- .1 a high priority item on “Safety requirements for natural gas hydrate pellet carriers”, with three sessions needed to complete the item and instructed the BLG Sub-Committee to include the item in the provisional agenda of BLG 13;
- .2 a high priority item on “Revision of the IGC Code” with a target completion date of 2010, in co-operation with the FP, DE, SLF and STW sub-committees, as necessary and when requested by the BLG Sub-Committee, and instructed the BLG Sub-Committee to include the item in the provisional agenda of BLG 12; and
- .3 a high priority item on “Review of the Recommendation for material safety data sheets for MARPOL Annex I cargoes and marine fuels”, with a target completion date of 2008 and instructed the BLG Sub-Committee to include the item in the provisional agenda of BLG 12.

18.9 The Committee recalled that, under its agenda item 9, it noted that BLG 12 (4 to 8 February 2008), in view of the progress made including completion or changes in target completion dates of some items, proposed some amendments to the work programme of the BLG Sub-Committee and the provisional agenda for BLG 13 with the view to approval by the Committee (BLG 12/17, paragraph 14.1 and annex 10), including:

- .1 a high-priority item on “Review of relevant non-mandatory instrument as a consequence of the amended MARPOL Annex VI and the NO_x Technical Code”, with target completion date of 2010; and

- .2 a high-priority item on “Amendments to MARPOL Annex I on the use and carriage of heavy grade oil (HGO) on ships in the Antarctic area”, with a target completion date of 2010.

18.10 The Committee concurred with the changes agreed by MSC 83 on the work programme of the BLG Sub-Committee and provisional agenda for BLG 12.

18.11 The Committee approved, subject to the concurrent decision of MSC 84, the revised work programme of the BLG Sub-Committee and provisional agenda for BLG 13, including the proposed changes by BLG 12 (BLG 12/17, annex 10). The revised work programme of the BLG Sub-Committee and provisional agenda for BLG 13 are contained in annex 14.

18.12 The Committee noted that MSC 83 revised and approved the work programme of the FSI Sub-Committee and provisional agenda for FSI 16 with the inclusion of a continuous item on “Review of the Code for the Implementation of Mandatory IMO Instruments” and requested the Secretariat to inform the MEPC accordingly (MSC 83/28, paragraphs 25.27 to 25.29).

18.13 The Committee approved the work programme of the FSI Sub-Committee and provisional agenda for FSI 16 and requested the Secretariat to inform MSC accordingly. The revised work programme of the FSI Sub-Committee and provisional agenda for FSI 16 are contained in annex 15.

Work programme of the DSC, NAV and DE Sub-Committees, which relate to environmental issues

18.14 The Committee noted that MSC 83 had revised and approved the work programme of the DSC, NAV and DE Sub-Committees (MSC 83/28, section 25 and annex 38).

18.15 The Committee approved, subject to the concurrent decision of MSC 84, the work programme of the DSC, NAV and DE Sub-Committees, which relate to environmental issues, as set out in annex 16.

Items to be included in the Committee’s agenda for its forthcoming three sessions

18.16 The Committee approved the items to be included in the agendas for MEPC 58, MEPC 59 and MEPC 60 (MEPC 57/WP.2), which are set out in annex 17.

Dates for MEPC 58, MEPC 59 and MEPC 60

18.17 The Committee noted that MEPC 58 would be held from 6 to 10 October 2008, and that MEPC 59 is tentatively scheduled from 6 to 10 July 2009 and MEPC 60 in March 2010.

Working/review/drafting groups at MEPC 58

18.18 The Committee agreed, in principle, to establish the following working/review/drafting groups at MEPC 58:

- .1 Working Group on GHG Emissions from Ships;
- .2 Review Group on Ballast Water Technologies;

- .3 Drafting group on Ship Recycling; and
- .4 Drafting Group on Amendments to MARPOL Annex VI and the NO_x Technical Code.

Correspondence groups

18.19 The Committee agreed to establish the following intersessional correspondence groups, which should report to MEPC 58:

- .1 Correspondence Group on GHG Emissions from Ships;
- .2 Correspondence Group on the Review of MARPOL Annex V;
- .3 Correspondence Group on Environmental Risk Evaluation Criteria; and
- .4 Correspondence Group on Ship Recycling.

Intersessional meetings

18.20 The Committee approved the holding of the following intersessional meetings:

- .1 Working Group on Ship Recycling to be held in the week before MEPC 58, which should report to MEPC 58;
- .2 OPRC/HNS Technical Group to be held in the week before MEPC 58, which should report to MEPC 58;
- .3 Working Group on GHG Issues to be held from 23 to 27 June 2008; and
- .4 ESPH Working Group to be held from 27 to 31 October 2008.

19 APPLICATION OF THE COMMITTEES' GUIDELINES

19.1 The Committee noted that the Chairmen of the MSC, MEPC and sub-committees met on 8 October 2007 during MSC 83 with the objective to work towards maximizing the efficiency and effectiveness of the Committees and sub-committees, including consideration of the number of working/drafting groups and assessment of new work programme items against the Strategic Plan and the High-level Action Plan.

Report of the 2007 Chairmen's meeting and relevant decisions of MSC 83

19.2 The Committee considered the report of the 2007 Chairmen's meeting (MEPC 57/19) in conjunction with the outcome of MSC 83 on the aforementioned report (MEPC 57/19/1) and, having noted that MSC 83 endorsed all the issues contained in the said report, took the following actions:

- .1 agreed to the recommendations with regard to the number of meeting groups;

- .2 agreed to change the deadline for submission of bulky information documents, if submitted in electronic format, from 13 weeks to 9 weeks and to amend the Committees' Guidelines accordingly;
- .3 noted the information on the meeting of the Chairmen of MSC, MEPC, LEG, TC and FAL on Work methods of the Committees of the Organization; and
- .4 noted the preliminary view of the meeting on the proposals on assessment of new work programme items against the Strategic Plan and High-level Action Plan.

19.3 The Committee noted that MSC 83 considered the report of the 2007 Chairmen's meeting, including the concerns raised by the delegations of the Bahamas at MEPC 56 and by ICS in a letter to the MSC Chairman concerning the increased number of working, drafting, technical, correspondence groups and intersessional meetings, resulted in unrealistic times taxing the resources of Member Governments and, in particular, the developing and least developed countries, as well as the Secretariat.

19.4 The Committee noted that MSC 83 had made decisions on the relevant issues as contained in paragraph 11 of document MEPC 57/19/1 and concurred with the decisions of MSC 83 that:

- .1 intersessional working groups and technical groups should not be held at the same time as Committee or sub-committee meetings;
- .2 splinter groups of a working group, if established, should meet outside normal working hours; and
- .3 the deadline for submission of bulky information documents should be shortened from 13 weeks to 9 weeks, if they were submitted in electronic format, and to amend the Committees' Guidelines accordingly.

Revised standard format for the IMO document

19.5 The Committee noted that the Council, at its twenty-fourth extraordinary session, endorsed, *inter alia*, the recommendation that all IMO documents should demonstrate, where feasible, the linkages to the Strategic and High-level Action Plan by including, in the summary table at the beginning of each document, references to the related strategic direction(s), high-level action(s) and planned output(s) (C/ES.24/3(a), annex, paragraph 13.5; and C/ES.24/D, paragraph 3(a).2(i) refer) and pursuant to this, the Secretariat prepared a revised standard format for the IMO documents, which was subsequently disseminated by Circular letter No.2831, dated 13 December 2007.

19.6 The Committee noted that the consolidated draft amendments to the Committees' Guidelines (MEPC 57/WP.4, annex) were considered and agreed to by the Committees up to MEPC 56 and MSC 83.

19.7 The delegation of the Bahamas expressed concern that the Committee's Guidelines were not being adhered to. That delegation stated that the increased number of working, drafting, technical and correspondence groups, including intersessional meetings, resulted in unrealistic timescales and priorities being allocated to the work items as well as taxing the resources of Member Governments, in particular, the developing and least developed countries, as well as the

Secretariat. The delegation of the Bahamas recommended that the next meeting of the Chairmen of the Committees and their subsidiary bodies should discuss ways to resolve these issues.

19.8 Several delegations expressed their support for the concern raised by the Bahamas and reiterated the need to take action to address the issues at the next Chairmen's Meeting during MSC 84, whilst the delegation of the Netherlands suggested to also consider the Committee's Guidelines on the application of the Strategic Plan and High-level Action Plan being developed by the Council's Working Group on the Strategic Plan through a correspondence group in addressing the aforementioned issues.

19.9 The Chairman stated that the concerns raised by the delegation of the Bahamas responded to chronic problems faced by the Committees and their subsidiary bodies, which had been dealt with in the past. The Chairman assured the Committee that these issues would be considered at the Chairmen's Meeting to be held during MSC 84, the outcome of which would be brought to the attention of the Council through the Committee.

19.10 The Committee, after due consideration, approved the consolidated draft amendments to the Committee's Guidelines as set out in annex 18.

19.11 The Committee requested the Secretariat, once all the draft amendments to the Committee's Guidelines have also been approved by MSC 84, and subject to any new amendments which may be approved by the Committees, to prepare a revised text of the Committee's Guidelines, incorporating all amendments, and issue it as a new MSC-MEPC circular, superseding MSC-MEPC.1/Circ.1.

20 ANY OTHER BUSINESS

The impact of small craft on the marine environment

20.1 The Committee considered document MEPC 57/20 (FOEI) on the Impact of small craft on the marine environment - Potential effects of small pleasure and fishing craft on the marine environment and possible action required by IMO. The Committee noted that small craft, in this context, are those of less than 25 metres in length and comprise pleasure craft, small coastal tourist boats and ferries and artisanal fishing boats.

20.2 The Committee also noted the increasing number of small craft and their associated sources of pollution include: oil; sewage or garbage inputs; anti-fouling system leachates; introduction and transfer of alien species; as well as issues relating to anchoring in sensitive areas; propeller damage; and vessel groundings.

20.3 The Committee further noted the information in document MEPC 57/INF.18 (United Kingdom) on the United Kingdom's environmental programme for the recreational boating sector – the 'Green Blue' (www.thegreenblue.org.uk). This programme, established to address the potential impacts recreational boating may have on the marine and inland water environment, provides good practice advice to both individual users and industry that is based on scientific research. The United Kingdom Government recognised the potentially prohibitive administrative burden of dealing with such large numbers of small craft in order to achieve compliance and considered the best approach was one of self-regulation.

20.4 A number of delegations expressed their support for the development of guidelines to control marine pollution from small craft, including providing the Committee with examples of national legislation regulating such small craft with a view to protect the marine environment.

20.5 The delegation of Peru stated that, while it fully supported the reduction of oil inputs to the marine environment from two stroke outboard motors, there was a substantial number of artisanal fishermen whose outboard engine was their most valuable and expensive possession, and the cost of improving the energy efficiency and reducing oil pollution was socially and prohibitively expensive. The delegation of Peru, therefore, considered a Technical Co-operation Programme was very important in two aspects, in providing instruction for upgrading outboard motors to improve their environmental performance and in assistance in replacement with new environmentally efficient models.

20.6 In this connection, the Committee noted that the Marine Safety Committee was currently considering the safety of fishing vessels under 30 tonnes which also included aspects concerning outboard motors. It was, therefore, suggested that the MSC could add the issue of reducing oil discharges in its considerations.

20.7 The Committee also noted the extensive work that had been undertaken by REMPEC and Contracting Governments to the Barcelona Convention, in particular with the Government of Monaco and in co-operation with IMO and UNEP/MAP, regarding the development of "Guidelines concerning pleasure craft activities and protection of the marine environment in the Mediterranean". The Committee also noted that these Guidelines had been adopted by the 15th Ordinary Meeting of the Contracting Parties to the Barcelona Convention, in January 2008.

20.8 Recognizing that the development of such guidelines had been identified in the Organization's High-level action plan (paragraph 7.1.4 of resolution A.990(25)), the Committee invited Members Governments to submit proposals that demonstrate the need for this work to be included in the Work Programme of the Committee.

Shipping noise and marine mammals

20.9 The Committee noted the information in document MEPC 57/INF.4 on Shipping noise and marine mammals (United States) concerning noise generated by international shipping and its potential adverse impact on marine life.

20.10 The Committee also noted that most marine animals use sound for critical life functions, such as communicating, foraging, evading predators and navigating and that human-produced noise has the potential to disturb behaviour and/or interfere with various important biological functions of marine animals.

20.11 The Committee noted further that, the general (low) frequency band of large vessel noise overlaps the frequencies generally produced by some marine animals, primarily large whales, seals and sea lions, and fish. Additionally, given the wide-ranging geographical occurrence of shipping, the fact that the low-frequency sounds from ships travel great distances, and its ever-increasing prevalence, the potential problems for acoustically-oriented marine animals from noise generated by shipping is of increasing concern.

20.12 The Committee, having noted the general interest and support on this issue, invited Member Governments to inform all interested entities, in particular those from the shipping industry, shipyards, and ship builders of this issue, and to invite them to participate in the ongoing dialogue regarding identification of potential adverse impacts associated

with vessel noise and the potential mitigation of those impacts; and to send any pertinent information on this issue to the United States Department of Commerce, National Oceanic & Atmospheric Administration, National Marine Fisheries Service, Ocean Acoustics Program (Brandon.Southall@noaa.gov). The United States was invited to share this information at a future session of the Committee.

20.13 The Committee further noted the information provided in MEPC 57/INF.22 (IFAW and FOEI) on the issue of underwater noise, in particular, on the ongoing acoustic research of whales being conducted by the IFAW research vessel “Song of the Whale”.

20.14 The delegation of Australia indicated that it would submit a document on underwater noise to the next meeting of the Committee.

Risks from maritime traffic to biodiversity in the Mediterranean Sea

20.15 The Committee noted the information provided by IUCN (MEPC 57/INF.9) on a project undertaken by the IUCN Centre for Mediterranean Cooperation on Risks from maritime traffic to biodiversity in the Mediterranean Sea, which had been funded by the Government of Italy. The Committee also noted a number of Pilot Actions for possible future research activities identified by a Workshop organized under the Project.

Antarctic area vessel issues

20.16 The Committee, noted the information provided in document MEPC 57/INF.19 (FOEI) on Antarctic area vessel issues, in particular regarding concerns about the increased number and type of vessels operating in the Antarctic area, and recent incidents. The Committee also noted FOEI’s suggestion that, given the Antarctic area was a special area under MARPOL Annexes I, II and V, IMO might consider addressing: vessel ice-strengthening standards; banning use of heavier grade fuel oils; discharges of oily substances, sewage, grey water and waste; introduction of alien species through ballast water, hull-fouling and other pathways; and the establishment of a vessel traffic monitoring and information system for vessels operating in the Antarctic area. The Committee further noted that FOEI would propose concrete actions in the future.

20.17 The delegation of Argentina indicated that it was aware of the increased needs of ships visiting the region and had made a number of improvements for such ships, including upgrading waste reception facilities in its ports. The same delegation noted that while progress had been made at IMO on several relevant issues, more could be done in terms of developing technical guidance that could be disseminated to institutional bodies in the region, including through the Antarctic Treaty System, thereby increasing the standard of ships transiting and visiting the Antarctic region.

20.18 The delegation of Chile indicated that it, too, for the same reasons, had upgraded its emergency response capability, the “Antarctic Force”, with a combined Antarctic Patrol in co-operation with Argentina.

20.19 The Committee, having noted that the work programme of BLG 13 would include “Amendments to MARPOL Annex I on the use and carriage of heavy grade oil (HGO) on ships in the Antarctic area”, invited Member Governments to submit proposals, as appropriate, to future meetings of the Committee, and the BLG Sub-Committee, as appropriate.

ANNEX 1

RESOLUTION MEPC.169(57)

Adopted on 4 April 2008

PROCEDURE FOR APPROVAL OF BALLAST WATER MANAGEMENT SYSTEMS THAT MAKE USE OF ACTIVE SUBSTANCES (G9)

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by the international conventions for the prevention and control of marine pollution,

NOTING that regulation D-3.2 of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 provides that ballast water management systems that make use of Active Substances or Preparations containing one or more Active Substances used to comply with this Convention, shall be approved by the Organization based on a Procedure developed by the Organization,

NOTING ALSO resolution MEPC.126(53) by which the Committee adopted the Procedure for Approval of ballast water management systems that make use of Active Substances (G9),

NOTING FURTHER that by resolution MEPC.126(53), the Committee resolved to keep the Procedure (G9) under review in the light of experience gained,

HAVING CONSIDERED, at its fifty-seventh session, the recommendation made by the Ballast Water Review Group,

1. ADOPTS the revised Procedure for approval of ballast water management systems that make use of Active Substances (G9), as set out in the Annex to this resolution;
2. INVITES Member Governments to give due consideration to the revised Procedure (G9) when evaluating ballast water management systems that make use of Active Substances before the submission of proposals for approval to the Committee;
3. AGREES to keep the revised Procedure (G9) under review in the light of experience gained;
4. URGES Member Governments to bring the aforementioned Procedure to the attention of manufacturers of ballast water management systems and other parties concerned with a view to encouraging its use;
5. REVOKES the Procedure adopted by resolution MEPC.126(53).

ANNEX

**PROCEDURE FOR APPROVAL OF BALLAST WATER MANAGEMENT
SYSTEMS THAT MAKE USE OF ACTIVE SUBSTANCES (G9)**

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PROCEDURE FOR APPROVAL OF BALLAST WATER MANAGEMENT SYSTEMS THAT MAKE USE OF ACTIVE SUBSTANCES (G9)

1 INTRODUCTION

1.1 This procedure describes the approval and withdrawal of approval of ballast water management systems that make use of Active Substances to comply with the Convention and their manner of application as set out in regulation D-3 of the “International Convention for the Control and Management of Ships’ Ballast Water and Sediments”. The Convention requires that at withdrawal of approval, the use of the relevant Active Substance or Substances shall be prohibited within 1 year after the date of such withdrawal.

1.2 To comply with the Convention, ballast water management systems that make use of Active Substances or Preparations containing one or more Active Substances shall be approved by the Organization, based on a procedure developed by the Organization.

1.3 The objective of this procedure is to determine the acceptability of Active Substances and Preparations containing one or more Active Substances and their application in ballast water management systems concerning ship safety, human health and the aquatic environment. This procedure is provided as a safeguard for the sustainable use of Active Substances and Preparations.

1.4 This procedure is not intended for the evaluation of the efficacy of Active Substances. The efficacy of ballast water management systems that make use of Active Substances should be evaluated in accordance with the Guidelines for approval of ballast water management systems (G8).

1.5 The goal of the procedure is to ensure proper application of the provisions contained in the Convention and the safeguards required by it. As such the procedure is to be updated as the state of knowledge and technology may require. New versions of the procedure will be circulated by the Organization following their approval.

2 DEFINITIONS

2.1 For the purposes of this procedure, the definitions in the Convention apply and:

- .1 “Active Substance” means a substance or organism, including a virus or a fungus that has a general or specific action on or against harmful aquatic organisms and pathogens.
- .2 “Ballast Water Discharge” means the ballast water as would be discharged overboard.
- .3 “Preparation” means any commercial formulation containing one or more Active Substances including any additives. This term also includes any Active Substances generated onboard for purposes of ballast water management and any relevant chemicals formed in the ballast water management system that make use of Active Substances to comply with the Convention.

- .4 “Relevant Chemicals” means transformation or reaction products that are produced during and after employment of the ballast water management system in the ballast water or in the receiving environment and that may be of concern to the ship’s safety, aquatic environment and/or human health.

3 PRINCIPLES

3.1 Active Substances and Preparations may be added to the ballast water or be generated on board ships by technology within the ballast water management system using an Active Substance to comply with the Convention.

3.2 Active Substances and Preparations accomplish their intended purpose through action on harmful aquatic organisms and pathogens in ships’ ballast water and sediments. However, if the ballast water is still toxic at the time of discharge into the environment, the organisms in the receiving water may suffer unacceptable harm. Both the Active Substance or Preparation as well as the ballast water discharge should be subjected to toxicity testing in order to protect the receiving environment or human health from toxic effects due to the discharges. Toxicity testing is needed to determine if an Active Substance or Preparation can be used and under which conditions the potential of harming the receiving environment or human health is acceptably low.

3.3 Any system which makes use of, or generates, Active Substances, Relevant Chemicals or free radicals during the treatment process to eliminate organisms in order to comply with the Convention should be subject to this Procedure.

3.4 Ballast water management systems that make use of Active Substances and Preparations must be safe in terms of the ship, its equipment and the personnel to comply with the Convention.

3.5 The approval of Active Substances and Preparations using viruses or fungi for use in ballast water management systems is not addressed in this procedure. The approval of such substances for ballast water management should require an additional consideration by the Organization in compliance with regulation D-3 of the Convention if the use of such substances is proposed.

3.6 Administrations should check the quality and completeness of any Basic Approval or Final Approval submission, against the latest version of the Methodology for information gathering and the conduct work of the Technical Group agreed by the Organization, prior to its submission to the MEPC.

4 GENERAL REQUIREMENTS

4.1 Identification

4.1.1 The proposal for approval of an Active Substance or a Preparation should include a chemical identification and description of the chemical components even if generated on board. A chemical identification should be provided for any Relevant Chemicals.

4.2 Data-set for Active Substances and Preparations

4.2.1 A proposal for approval should include information on the properties or actions of the Preparation including any of its components as follows:

- .1 Data on effects on aquatic plants, invertebrates, fish, and other biota, including sensitive and representative organisms:
 - acute aquatic toxicity;
 - chronic aquatic toxicity;
 - endocrine disruption;
 - sediment toxicity;
 - bioavailability/biomagnification/bioconcentration; and
 - food web/population effects.
- .2 Data on mammalian toxicity:
 - acute toxicity;
 - effects on skin and eye;
 - chronic and long-term toxicity;
 - developmental and reproductive toxicity;
 - carcinogenicity; and
 - mutagenicity.
- .3 Data on environmental fate and effect under aerobic and anaerobic conditions:
 - modes of degradation (biotic; abiotic);
 - bioaccumulation, partition coefficient, octanol/water coefficient;
 - persistence and identification of the main metabolites in the relevant media (ballast water, marine and fresh waters);
 - reaction with organic matter;
 - potential physical effects on wildlife & benthic habitats;
 - potential residues in seafood; and
 - any known interactive effects.
- .4 Physical and chemical properties for the Active Substances and Preparations and the treated ballast water, if applicable:
 - melting point;
 - boiling point;
 - flammability;
 - density (relative density);
 - vapour pressure, vapour density;
 - water solubility / dissociation constant (pKa);
 - oxidation/reduction potential;
 - corrosivity to the materials or equipment of normal ship construction;
 - autoignition temperature; and
 - other known relevant physical or chemical hazards.
- .5 Analytical methods at environmentally relevant concentrations.

4.2.2 A proposal for approval should include the above data set either for the Preparation or for each component separately, and a list of the name and relative quantities (in volumetric percentages) of the components should be also attached. As described in section 8.1, all proprietary data should be treated as confidential.

4.2.3 The tests for Active Substances and Preparations should be carried out in accordance with internationally recognized guidelines¹.

4.2.4 The testing process should contain a rigorous quality control/quality assurance programme consisting of:

- .1 Both a Quality Management Plan (QMP) and a Quality Assurance Project Plan (QAPP). Guidance on preparation of these plans, along with other guidance documents and other general quality control information are available for download from the International Organization for Standardization (ISO) (www.iso.org).
- .2 The QMP addresses the quality control management structure and policies of the Test Organization (including subcontractors and outside laboratories).
- .3 The QAPP is a project specific technical document reflecting the specifics of the system to be tested, the test facility, and other conditions affecting the actual design and implementation of the required experiments.

4.2.5 Dossiers already used for registration of chemicals can be submitted by the applicant to satisfy the required data needed for the evaluation of Active Substances and Preparations according to this procedure.

4.2.6 The proposal should describe the manner of application of the Preparation for ballast water management, including required dosage and retention time.

4.2.7 A proposal for approval should include (Material) Safety Data Sheets ((M)SDS).

4.3 Assessment report

4.3.1 A proposal for approval should include an assessment report. The assessment report should address the quality of the test reports, the risk characterization and a consideration of the uncertainty associated with the assessment.

5 RISK CHARACTERIZATION

5.1 Screening for persistency, bioaccumulation and toxicity

5.1.1 An assessment on the intrinsic properties of the Active Substance and/or Preparation such as persistency, bioaccumulation and toxicity should be conducted (see Table 1 in section 6).

¹ Preferably Organization for Economic Co-operation and Development (OECD) Guidelines for Testing of Chemicals (1993) or other equivalent tests.

- .1 Persistence tests:
Persistence should preferably be assessed in simulation test systems that determine the half-life under relevant conditions. Biodegradation screening tests may be used to show that the substances are readily biodegradable. The determination of the half-life should include assessment of relevant chemicals.
- .2 Bioaccumulation tests:
The assessment of the (potential for) bioaccumulation should use measured bioconcentration factors in marine (or freshwater) organisms. Where these tests are not applicable, or if $\log P_{ow} < 3$, Bio Concentration Factor (BCF) values may be estimated using (Quantitative) Structure-Activity Relationship ((Q)SAR) models.
- .3 Toxicity tests:
Acute and/or chronic ecotoxicity data, ideally covering the sensitive life stages, should in principle be used for the assessment of the toxicity criterion.

5.2 Toxicity testing of the treated ballast water

5.2.1 Toxicity testing is necessary for the Active Substance, or Preparations (see sections 4.2.1 and 5.3) and the treated ballast water discharge as covered in this section. The advantage of conducting toxicity testing on the ballast water discharge is that it integrates and addresses the potential for interactions of the Active Substances and Preparations with the possible by-products:

- .1 For the Basic Approval process, the discharge testing should be performed in a laboratory using techniques and equipment to simulate ballast water discharge following treatment by the Preparation.
- .2 For Final Approval, the discharge testing should be performed as part of the land-based type approval process using the treated ballast water discharge.

5.2.2 The applicant should provide both acute and chronic toxicity test data using standardized test procedures to determine the toxicity of the Preparation and Relevant Chemicals as used in conjunction with the ballast water management system. This testing approach should be performed on the treated ballast water discharge, as the ballast water management system could either mitigate or enhance the adverse effects of the Preparation or Relevant Chemicals.

5.2.3 The discharge toxicity tests should be conducted on samples drawn from the land-based test set-up, which would be representative of the discharge from the ballast water management system.

5.2.4 These toxicity tests should include chronic test methods with multiple test species (a fish, an invertebrate and a plant) that address the sensitive life-stage. The preference is to include both

a sub-lethal endpoint (growth) and a survival endpoint. Either freshwater or marine test methods should be tested².

5.2.5 The test results to be provided include: acute 24-hour, 48-hour, 72-hour, and 96-hour Lethal Concentration at which x % of the test organisms die (LCx), No Observed Adverse Effect Concentrations (NOAECs), chronic No Observed Effect Concentration (NOEC) and/or Effect Concentration at which x % of test organisms show effect (ECx), as appropriate based on the experimental design.

5.2.6 A dilution series including a 100% ballast water discharge would be tested to determine the no adverse effect level using the statistical endpoints (NOEC or ECx). An initial analysis could use a conservative approach where the dilution capacity would not be taken into consideration (no modelling or plumes analysis would be used). The rationale for taking a conservative approach is that there could be multiple discharges into one location (even though this is not necessarily the case).

5.2.7 The acute and chronic toxicity test data in conjunction with the information in section 4.2.1 should be used to determine the holding time necessary to achieve the no adverse effect concentration upon discharge. Knowing the half-life (days), decay rate, dosage rate, volume of system and toxicity tests with time series, then a computational model can be used to determine the amount of time needed to hold the treated ballast water before discharge.

5.2.8 Information on Total Residual Oxidants (TRO) and Total Residual Chlorine (TRC) should be provided as part of the application for evaluation, for both the ballast water treatment process and the ballast water discharge.

5.3 Risk characterization and analysis

5.3.1 For the Basic Approval process, fate and effect testing should be performed in the laboratory with Active Substances and Preparations. This section lists information that could be useful for a preliminary risk characterization.

5.3.2 Both the Active Substance or Preparation as well as the treated ballast water discharge should be subject to toxicity testing in order to protect the receiving environment from toxic effects due to discharges.

5.3.3 The reaction with organic matter of Active Substances and Preparations that produce free radicals, should be addressed qualitatively so as to identify products of concern to the environment.

5.3.4 The rate and route of abiotic and biotic degradation of the Active Substances and Preparations under aerobic and anaerobic conditions should be assessed, resulting in the identification of relevant metabolites in the relevant media (ballast water, marine and fresh waters).

² Currently there is no compelling physiological or empirical proof that marine organisms are more sensitive than freshwater organisms or vice versa. Should this however be demonstrated for the substance under consideration, this should be taken into account.

5.3.5 The rate of abiotic and biotic degradation of the Active Substances and Preparations under aerobic and anaerobic conditions should be assessed, resulting in the characterization of the persistence of the Active Substances, Preparations and Relevant Chemicals in terms of degradation rates under specified conditions (e.g., pH, redox, temperature).

5.3.6 The partition coefficients (solids-water partition coefficient (K_d) and/or organic carbon normalized distribution coefficient (K_{oc})) of the Active Substances, Preparations and Relevant Chemicals should be determined.

5.3.7 For Active Substances and Preparations, the potential for bioaccumulation should be assessed in marine or freshwater organisms (fish or bivalves) if the logarithm octanol/water partition coefficient ($\log P_{ow}$) is >3 .

5.3.8 Based on the information on fate and behaviour of Active Substances and Preparations, the discharge concentrations at selected time intervals should be predicted.

5.3.9 The effect assessment of the Active Substances, Preparations and Relevant Chemicals is initially based on a dataset of acute and/or chronic ecotoxicity data for aquatic organisms, being primary producers (algae or sea grasses), consumers (crustaceans), predators (fish), and should include secondary poisoning to mammalian and avian top-predators, as well as data for sediment species.

5.3.10 An assessment of secondary poisoning is redundant if the substance of concern demonstrates a lack of bioaccumulation potential (e.g., BCF <500 L/kg wet weight for the whole organism at 6% fat).

5.3.11 An assessment of sediment species is redundant if the potential of the substance of concern to partition into the sediment is low (e.g., $K_{oc} <500$ L/kg).

5.3.12 The effect assessment of the Active Substances, Preparations and Relevant Chemicals should include a screening on carcinogenic, mutagenic and endocrine disruptive properties. If the screening results give rise to concerns, this should give rise to a further effect assessment.

5.3.13 The effect assessment of the Active Substances, Preparations and Relevant Chemicals, taking the indicated information into account, should be based on internationally recognized guidance³.

5.3.14 The results of the effect assessment are compared to the results of the discharge toxicity testing. Any unpredicted results (e.g., lack of toxicity or unexpected toxicity in the discharge assessment) should give rise to a further elaboration on the effect assessment.

5.3.15 An analytical method suitable for monitoring Active Substances and Preparations in ballast water discharges should be available.

³ Such as relevant OECD guidelines or equivalent.

6 EVALUATION CRITERIA

The Organization should evaluate the application for approval based on the criteria in this section.

6.1 The information that has been provided should be complete, of sufficient quality and in accordance with this Procedure.

6.2 That this information does not indicate possible unacceptable adverse effects to environment, human health, property or resources.

6.3 Ship and personnel safety

6.3.1 In order to protect the ship and personnel safety the Technical Group should evaluate the physical and chemical hazards (see paragraph 4.2.1.4) to ensure that potential hazardous properties of the Active Substances, Preparations or Relevant Chemicals formed in the treated ballast water should not create any unreasonable risk to the ship and personnel. Proposed procedures for the use and technical equipment introduced needs to be taken into account.

6.3.2 For the protection of personnel involved in the handling and storage of the Active Substances and Preparations, the proposal should include relevant ((M)SDS). The Organization should evaluate (M)SDS, mammalian toxicity data and chemical properties hazards (see paragraphs 4.2.1.2 and 4.2.1.4) and ensure that potential hazardous properties of the Active Substances, Preparations or Relevant Chemicals should not create any unreasonable risk to the ship or personnel. This evaluation should take into account the different circumstances that a ship or personnel may face in its trade (e.g., ice, tropical, humidity, etc.).

6.3.3 A Human Exposure Scenario (HES) should be provided by the applicant as part of the Risk Assessment procedure for ballast water management systems.

6.4 Environmental protection

6.4.1 In order to approve the application, the Organization should determine that the Active Substances, Preparations or Relevant Chemicals are not Persistent, Bioaccumulative and Toxic (PBT). Preparations that exceed all these criteria (Persistence, Bioaccumulation and Toxicity) in the table below are considered PBT.

Table 1 Criteria for identification of PBT substances

| Criterion | PBT criteria |
|-----------------|--|
| Persistence | Half-life: > 60 days in marine water, or > 40 days in freshwater*, or > 180 days in marine sediment, or > 120 days in freshwater sediment* |
| Bioaccumulation | BCF > 2,000 or $\text{LogP}_{\text{octanol/water}} \geq 3$ |
| Toxicity | Chronic NOEC < 0.01 mg/l |

* For the purpose of marine environmental risk assessment half-life data in freshwater and freshwater sediment can be overruled by data obtained under marine conditions.

6.4.2 The Organization should determine the overall acceptability of the risk the Preparation may pose in its use for ballast water management. It should do so by comparing the information provided and the undertaken assessment of PBT and the discharge with scientific knowledge of the Active Substances, Preparations and Relevant Chemicals concerned. The risk evaluation should qualitatively take into account cumulative effects that may occur due to the nature of shipping and port operations.

6.4.3 The risk evaluation should consider the uncertainties involved in the application for approval, and as appropriate, provide advice on how these uncertainties can be dealt with.

6.4.4 An Emission Scenario Document (ESD) should be provided by the applicant as part of the Risk Assessment procedure for ballast water management systems. The ESD should be based on the worst-case discharge scenario and should be regarded as the first stage of a stepped approach to the development of a full ESD, when more data on potential discharges and technologies becomes available.

7 REGULATION OF THE USE OF ACTIVE SUBSTANCES AND PREPARATIONS

7.1 Handling of Active Substances and Preparations

7.1.1 The proposal for approval of Active Substances and Preparations should include information on their intended use and application. The quantity of Active Substances and Preparations to be added to the ballast water and the maximum allowable concentration of the Active Substances therein should be described in the instructions provided by the manufacturer. The system should ensure that the maximum dosage and maximum allowable discharge concentration are not exceeded at any time.

7.1.2 An assessment should be undertaken to ensure the safe on-board handling and storage of chemicals used to treat ballast water, using the existing IMO Conventions, Codes and guidance as a basis.

7.2 Hazard documentation and labelling

7.2.1 The proposal should include ((M)SDS) as required. The (M)SDS should describe appropriate storage and handling together with the effects of degradation and chemical reactivity during storage and should be included in the instructions provided by the manufacturer.

7.2.2 Documentation of hazards or the (M)SDS should conform to the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and the relevant IMO regulations (e.g., the IMDG Code) and guidelines (e.g., the GESAMP Hazard Evaluation Procedure). Where these regimes are not applicable, relevant national or regional regimes should be followed.

7.3 Procedures and use

7.3.1 Detailed procedures and information for safe application of Active Substances and Preparations on board should be developed and supplied, taking into consideration existing IMO Conventions, Codes and guidance. The procedures should comply with the approval conditions such as maximum allowable concentration and maximum discharge concentration, if any.

8 APPROVAL

8.1 Basic Approval

8.1.1 All proprietary data should be treated as confidential by the Organization and its Technical Group, the Competent Authorities involved, and the evaluating regulatory scientists, if any. However, all information related to safety and environmental protection, including physical/chemical properties, environmental fate and toxicity, should be treated as non-confidential.

8.1.2 Procedure to be followed:

- .1 The manufacturer should evaluate the Active Substances or Preparations and the potential discharge in accordance with the approval criteria specified in this procedure.
- .2 Upon completion, the manufacturer should prepare an Application on the Active Substances and Preparations and submit it to the Member of the Organization concerned. An application should only be made once the ballast water management system, Active Substance or Preparation has been sufficiently designed, progressed and tested to provide the full data necessary for a Basic Approval.
- .3 The Administration having received a satisfactory application should as soon as possible propose an approval to the Organization.
- .4 Members of the Organization may propose an approval.
- .5 The Organization should announce and set the time frame for the evaluation of Active Substances and Preparations.
- .6 Parties, Members of the Organization, the United Nations and its Specialized Agencies, intergovernmental organizations having agreements with the Organization and non-governmental organizations in consultative status with the Organization may submit information that is relevant to the evaluation.
- .7 The Organization should establish a Technical Group in accordance with its rules of procedure ensuring that proprietary data should be treated as confidential.
- .8 The Technical Group should review the comprehensive proposal along with any additional data submitted and report to the Organization whether the proposal has demonstrated a potential for unreasonable risk for environment, human health, property or resources in accordance with the criteria specified in this procedure.
- .9 The Technical Group's report should be in written form and circulated to the Parties, Members of the Organization, the United Nations and its Specialized Agencies, intergovernmental organizations having agreements with the Organization and non-governmental organizations in consultative status with the Organization, prior to its consideration by the competent Committee.

- .10 The Committee of the Organization should decide whether to approve any proposal, introduce any modifications thereto, if appropriate, taking into account the Technical Group's report.
- .11 The Member of the Organization that submitted the application to the Organization should inform in writing the applicant about the decision made with regard to the respective Active Substance or Preparation and their manner of application.
- .12 Active Substances or Preparations receiving Basic Approval by the Organization may be used for prototype or type approval testing based on the guidelines developed by the Organization⁴. Subject to evaluation against the criteria developed by the Organization, an Active Substance or Preparation may be used for Prototype or Type Approval testing for the approval of different BWMS.
- .13 An applicant seeking to take advantage of an Active Substance or Preparation's Basic Approval should provide in its application a written agreement from the applicant whose Active Substance or Preparation has been granted the initial Basic Approval.

8.2 Final Approval

8.2.1 In accordance with regulation D-3.2, a ballast water management system using an Active Substance or Preparation to comply with the Convention (which received Basic Approval) must be approved by the Organization. For this purpose, the Member of the Organization submitting an application should conduct the Type Approval tests in accordance with Guidelines for approval of ballast water management systems (G8). The results should be conveyed to the Organization for confirmation that the residual toxicity of the discharge conforms to the evaluation undertaken for Basic Approval. This would result in Final Approval of the ballast water management system in accordance with regulation D-3.2. Active Substances or Preparations that have received Basic Approval by the Organization may be used for evaluation of ballast water management systems using Active Substances or Preparations for Final Approval.

8.2.2 It is to be noted that from the Guidelines (G8) land-based testing only the results of the residual toxicity tests should be included in the proposal for Final Approval in accordance with Procedure (G9). All other Guidelines (G8) testing remains for the assessment and attention of the Administration. Although Basic Approval under Procedure (G9) should not be a pre-requisite of Type Approval testing, as an Administration can regulate discharges from its own ships in its own jurisdiction. Basic Approval would still be required, and the specific technology could not be used in vessels in another jurisdiction without Basic Approval.

8.2.3 It should be noted that once a system has received Final Approval under this Procedure, then the respective applicant should not have to retrospectively submit new data if there is a change in the Methodology agreed by the Organization.

⁴ Guidelines for approval and oversight of prototype ballast water treatment technologies (G10) and Guidelines for approval of Ballast Water Management Systems (G8).

8.3 Notification of approval

8.3.1 The Organization will record the Basic and Final Approval of Active Substances and Preparations and ballast water management systems that make use of Active Substances and circulate the list once a year including the following information:

- Name of ballast water management system that make use of Active Substances and Preparations;
- Date of approval;
- Name of manufacturer; and
- Any other specifications, if necessary.

8.4 Modification

8.4.1 Manufacturers should report any modifications in names, including trade and technical name, composition or use of the Active Substances and Preparations in the ballast water management systems approved by the Organization, to the Member of the Organization. The Member of the Organization should inform the Organization accordingly.

8.4.2 Manufacturers intending to significantly change any part of a ballast water management System that has been approved by the Organization or the Active Substances and Preparations used in it should submit a new application.

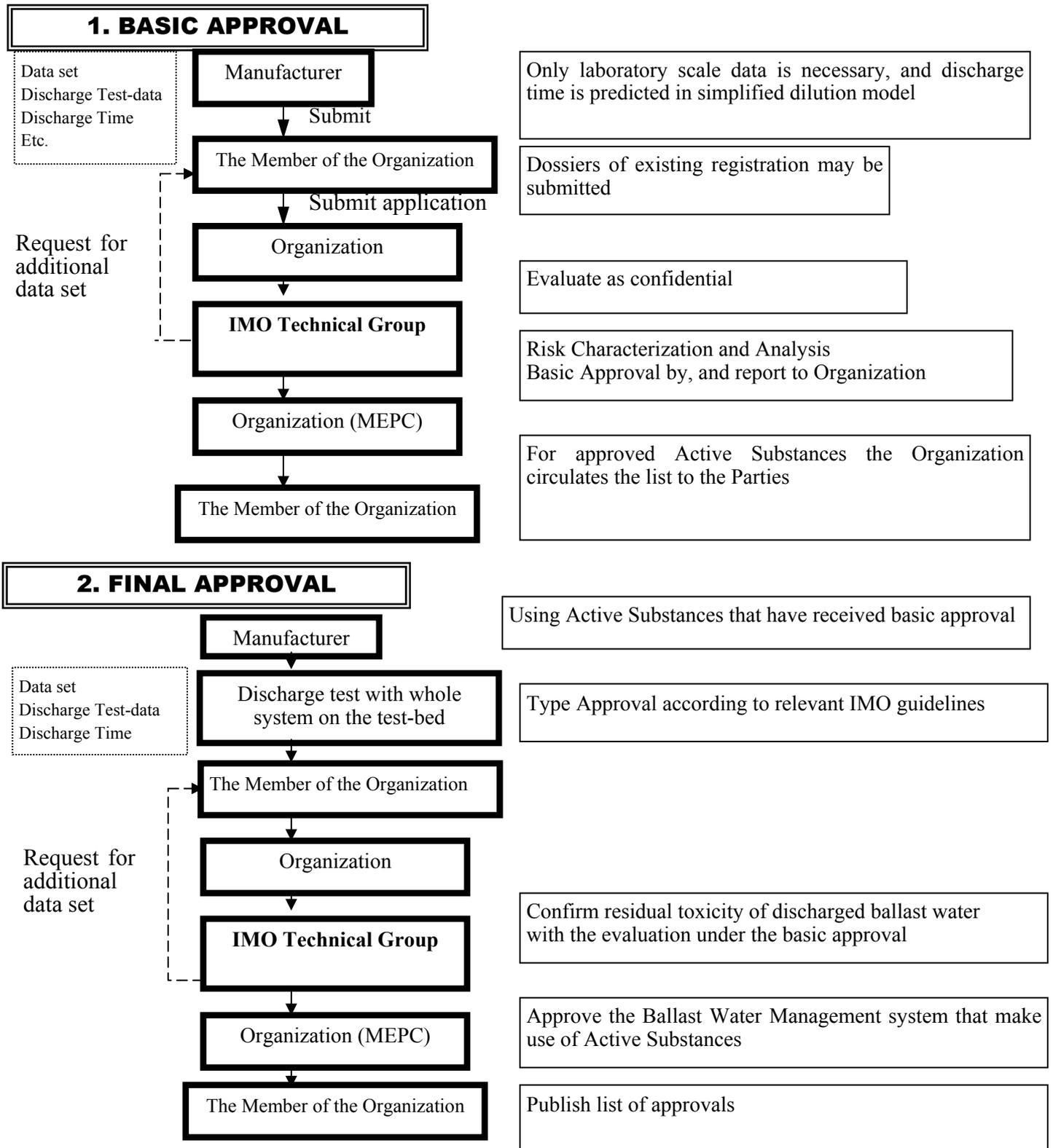
8.5 Withdrawal of approval

8.5.1 The Organization may withdraw any approval in the following circumstances:

- .1 If the Active Substances and Preparations or ballast water management system that make use of Active Substances no longer conforms to requirements due to amendments of the Convention.
- .2 If any data or test records differ materially from data relied upon at the time of approval and are deemed not to satisfy the approval condition.
- .3 If a request for withdrawal of approval is made by the Member of the Organization on behalf of the manufacturer.
- .4 If unreasonable harm to environment, human health, property or resources is demonstrated by any Member of the Organization or observer to have been caused by the approved ballast water management system that make use of Active Substances or Preparations.

Appendix

Approval Scheme for Active Substance or Preparation and Ballast Water Management systems that make use of Active Substances



ANNEX 2

**PROVISIONAL TERMS OF REFERENCE
FOR THE BALLAST WATER REVIEW GROUP AT MEPC 58**

- 1 Further consider the Methodology for information gathering and the conduct of work of the GESAMP-BWWG contained in annex 4 to document MEPC 57/2/10, and advise the Committee on how to address the recommendations made by the GESAMP-BWWG during its fourth and fifth meetings, contained in action items 1 to 4 of document MEPC 57/2 and action item 1 of document MEPC 57/2/10;
- 2 consider the provisions within resolution A.1005(25) and review the issue of a ship subject to regulation B-3.3 constructed in 2010 and the immediate availability of type-approved technology for such a ship to meet the D-2 standard by:
 - .1 refining and applying the existing review methodology employed at MEPC 53 and MEPC 55;
 - .2 assessing the number of vessels to be constructed in 2010 that will need ballast water treatment technology;
 - .3 identifying the current status of ballast water treatment technologies and providing an estimate of how many of them will be available for ships constructed in 2010;
 - .4 taking into account paragraphs 2.2 and 2.3 above, evaluate whether there is sufficient type-approved technology for ships subject to regulation B-3.3 constructed in 2010; and
 - 5 if it is concluded that the immediate availability of type-approved technology for such ships is insufficient, recommend an appropriate course of action for consideration by the Committee.
- 3 complete work on the Guidelines for ballast water sampling (G2) with a view to finalizing these Guidelines and providing the needed certainty and recommend these Guidelines for adoption by an MEPC resolution taking into account the existing draft (BLG 12/17, annex 1) and any further submissions;
- 4 consider procedural aspects regarding the submission of proposals for approval of ballast water management systems that make use of Active Substances as discussed at MEPC 57 and in particular regarding the communication between GESAMP-BWWG and the applicants;
- 5 consider any additional changes to Guidelines for approval of ballast water management systems (G8) based on the draft text provided in annex 3 of the report of the BWRG (MEPC 57/WP.5) and develop an amended version of these Guidelines for adoption by an MEPC resolution;
- 6 continue to consider document BLG 12/5/10, to identify the possible impacts and implications of the proposed arrangements on the GESAMP-BWWG and the availability of technologies;

- 7 continue to consider document MEPC 57/2/12 to identify whether shipboard testing requirements should be changed; and
- 8 submit a written report to plenary on Thursday, 9 October 2008.

ANNEX 3**STATEMENT BY THE DELEGATION OF THE UNITED STATES
CONCERNING SHIP RECYCLING IN NON-PARTY FACILITIES**

The delegation of the United States appreciated the attention of the Committee to the issue of recycling in non-Party facilities under the convention. The United States, however, did not concur with the decision not to provide in the convention for recycling at non-Party recycling facilities that meet or exceed the standards in the draft convention. The United States believed that the serious concerns raised in its document MEPC 57/3/10 remained unaddressed in the current draft text of the convention and that further consideration of those issues was needed. Furthermore, the United States believed that these issues were not likely to be resolved by a conference resolution providing for an interim solution to the recycling capacity issue.

ANNEX 4**RESOLUTION MEPC.170(57)****Adopted on 4 April 2008****GUIDELINES FOR EXHAUST GAS CLEANING SYSTEMS**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) conferred upon it by international conventions for the prevention and control of marine pollution,

RECALLING ALSO that the Conference of Parties to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), held in September 1997, adopted the Protocol of 1997 to amend MARPOL 73/78 with the addition of Annex VI on the Prevention of Air Pollution from Ships,

NOTING that the 1997 Conference, by regulation 14(4)(b) of Annex VI, agreed that ships within a SO_x emission control area (SECA) are permitted to operate with an exhaust gas cleaning system approved by the Administration and taking into account guidelines to be developed by the Organization,

BEING AWARE that the Protocol of 1997 entered into force on 19 May 2005 and that exemptions from the requirements for SECAs, in accordance with regulation 14(7) of Annex VI ceased on 18 May 2006 for the Baltic Sea SECA and on 22 November 2007 for the North Sea SECA,

RECALLING resolution MEPC.130(53) by which the Committee adopted the Guidelines for Onboard Exhaust Gas-SO_x Cleaning Systems,

HAVING CONSIDERED the draft amendments to the Guidelines for Exhaust Gas Cleaning Systems prepared by the Sub-Committee on Bulk Liquids and Gases and finalized at its twelfth session;

1. ADOPTS the Guidelines for Exhaust Gas Cleaning Systems, as set out in the annex to this resolution;
2. INVITES Governments to apply the Guidelines from the date of their adoption; and
3. REVOKES the Guidelines adopted by resolution MEPC.130(53).

ANNEX

GUIDELINES FOR EXHAUST GAS CLEANING SYSTEMS

1 INTRODUCTION

1.1 Regulation 14(4) of Annex VI to MARPOL 73/78 requires ships within SO_x emission control areas to either use fuel oil with a sulphur content not exceeding that stipulated in regulation 14(4)(a) or apply an exhaust gas cleaning (EGC) system to reduce the total emission of SO_x to that stipulated in regulation 14(4)(b). The EGC unit should to be approved by the Administration taking into account these guidelines.

1.2 Similar to a NO_x emission reduction system, an EGC unit may be approved subject to periodic parameter and emission checks or the system may be equipped with a continuous emission monitoring system. These guidelines have been developed with the intention of being objective and performance oriented. As an alternative, introduction of the SO₂ (ppm)/CO₂ (%) ratio method will simplify the monitoring of SO_x emission and facilitate approval of an EGC unit. See Appendix I for the rationale explaining the use of SO₂ (ppm)/CO₂ (%) as the basis for system monitoring.

1.3 These Guidelines are recommendatory in nature, however, Administrations are invited to base their implementation on these guidelines.

2 GENERAL

2.1 Purpose

2.1.1 The purpose of these Guidelines is to specify the requirements for the testing, survey certification and verification of exhaust gas cleaning (EGC) systems to ensure that they comply with the requirements of regulation 14(4)(b) of Annex VI of MARPOL 73/78.

2.1.2 The Guidelines permit two schemes; Scheme A (Unit Certification with Parameter and Emission Checks, and Scheme B (Continuous Emission Monitoring with Parameter Checks).

2.1.3 For ships which are to use an exhaust gas cleaning system in part or in total in order to comply with regulation 14(4)(b) of MARPOL Annex VI there should be an approved SECA Compliance Plan (SCP).

2.2 Application

2.2.1 These Guidelines apply to any EGC unit as fitted to fuel oil combustion machinery, excluding shipboard incinerators, installed on board a ship.

2.3 Definitions and Required Documents

| | |
|--------------------------|--|
| Fuel oil combustion unit | Any engine, boiler, gas turbine, or other fuel oil fired equipment, excluding shipboard incinerators |
| ppb | Parts per billion |
| SECA | SOx Emission Control Area |
| UTC | Universal Time Co-ordinated |
| Certified value | That emission limit specified by the manufacturer that the EGC unit is certified as meeting |
| In-situ | Sampling directly within an exhaust gas stream |
| MCR | Maximum Continuous Rating |
| SCP | SECA Compliance Plan |
| SCC | SECA Compliance Certificate. |
| ETM "Scheme A" | EGC – SOx Technical Manual for Scheme A |
| ETM "Scheme B" | EGC – SOx Technical Manual for Scheme B |
| OMM | Onboard Monitoring Manual |
| EGC Record book | A record of the EGC unit in-service operating parameters, component adjustments, maintenance and service records as appropriate. |
| | |

| Document | Scheme A | Scheme B |
|--|----------|----------|
| SCP | X | X |
| SCC | X | |
| ETM Scheme A | X | |
| ETM Scheme B | | X |
| OMM | X | X |
| EGC Record Book or Electronic Logging System | X | X |
| Oil Record Book | X | X |

3 SAFETY NOTE

3.1 Due attention is to be given to the safety implications related to the handling and proximity of exhaust gases, the measurement equipment and the storage and use of cylindered pure and calibration gases. Sampling positions and access staging should be such that this monitoring may be performed safely. In locating discharge outlet of washwater used in the EGCS unit, due consideration should be given to the location of the ship's seawater inlet. In all operating conditions the pH should be maintained at a level that avoids damage to the vessel's antifouling system, the propeller, rudder and other components that may be vulnerable to acidic discharges, potentially causing accelerated corrosion of critical metal components.

4 SCHEME A – EGC SYSTEM APPROVAL, SURVEY AND CERTIFICATION USING PARAMETER AND EMISSION CHECKS

4.1 Approval of EGC systems

4.1.1 General

Options under Scheme A of these Guidelines provide for:

- a) Unit approval;
- b) Serially manufactured units;
- c) Production range approval.

4.1.2 Unit approval

4.1.2.1 An EGC unit should be certified as capable of meeting the limit value, (the certified value), specified by the manufacturer (e.g., the emission level the unit is capable of achieving on a continuous basis) with fuel oils of up to highest allowable global % m/m sulphur content under MARPOL Annex VI regulation 14(1) and for the range of operating parameters, as listed in 4.2.2.1(b), for which they are to be approved.

4.1.2.2 Where testing is not to be undertaken with fuel oils of the highest allowable global % m/m sulphur content the use of two test fuels with a lower % m/m sulphur content is permitted. The two fuels selected should have a difference in % m/m sulphur content sufficient to demonstrate the operational behaviour of the EGC unit and to demonstrate that the requirements of MARPOL Annex VI regulation 14(4) can be met if the EGC unit were to be operated with a fuel of the highest allowable global % m/m sulphur content under MARPOL Annex VI, regulation 14(1). In such cases a minimum of two tests, in accordance with section 4.3 as appropriate, should be performed. These need not be sequential and could be undertaken on two different, but identical, EGC units.

4.1.2.3 The maximum and, if applicable, minimum exhaust gas mass flow rate of the unit should be stated. The effect of variation of the other parameters defined in 4.2.2.1(b) should be justified by the equipment manufacturer. The effect of variations in these factors should be assessed by testing or otherwise as appropriate. No variation in these factors, or combination of variations in these factors, should be such that the emission value of the EGC unit would be in excess of the certified value.

4.1.2.4 Data obtained in accordance with this section should be submitted to the Administration for approval together with the ETM.

4.1.3 Serially manufactured units

In the case of nominally similar EGC units of the same mass flow ratings as that certified under 4.1.2, and to avoid the testing of each EGC unit, the equipment manufacturer may submit, for acceptance by the Administration, a conformity of production arrangement. The certification of each EGC unit under this arrangement should be subject to such surveys that the Administration may consider necessary as to assure that each EGCS unit has an emission value of not more than the certified value when operated in accordance with the parameters defined in 4.2.2.1(b).

4.1.4 Product range approval

4.1.4.1 In the case of an EGC unit of the same design, but of different maximum exhaust gas mass flow capacities, the Administration may accept, in lieu of tests on an EGC unit of all capacities in accordance with section 4.1.2, tests of EGC systems of three different capacities provided that the three tests are performed at intervals including the highest, lowest and one intermediate capacity rating within the range.

4.1.4.2 Where there are significant differences in the design of EGC units of different capacities, this procedure should not be applied unless it can be shown, to the satisfaction of the Administration, that in practice those differences do not materially alter the performance between the various EGC unit types.

4.1.4.3 For EGC units of different capacities, the sensitivity to variations in the type of combustion machinery to which they are fitted should be detailed together with sensitivity to the variations in the parameters listed in 4.2.2.1(b). This should be on the basis of testing, or other data as appropriate.

4.1.4.4 The effect of changes of EGC capacity on washwater characteristics should be detailed.

4.1.4.5 All supporting data obtained in accordance with this section, together with the ETM for each capacity unit, should be submitted to the Administration.

4.1.4.6 An SO₂ (ppm)/CO₂ (%) ratio may be used for emission limit value specified in 4.1.2.2, 4.1.2.3 and 4.1.3.

4.2 Survey and certification

4.2.1 Procedures for the certification of an EGC unit

4.2.1.1 In order to meet the requirements of 4.1 either prior to, or after installation onboard, each EGC unit should be certified as meeting the emission limit, (certified value), specified by the manufacturer (e.g., the emission level the unit is capable of achieving on a continuous basis) under the operating conditions and restrictions as given by the EGC Technical Manual (ETM) as approved by the Administration.

4.2.1.2 Determination of the certified value should be in accordance with the provisions of these Guidelines.

4.2.1.3 Each EGC unit meeting the requirements of 4.2.1.1 should be issued by the Administration with a SCC.

4.2.1.4 Application for a SCC should be made by the EGC system manufacturer, shipowner or other party.

4.2.1.5 Subsequent EGC units of the same design and rating as that certified under 4.2.1.1 may be issued with SCC by the Administration without the need for testing in accordance with 4.2.1.1 subject to section 4.1.3 of these Guidelines.

4.2.1.6 EGC units of the same design, but with ratings different from that certified under 4.2.1.1 may be accepted by the Administration subject to section 4.1.4 of these Guidelines.

4.2.1.7 EGC units which treat only part of the exhaust gas flow of the uptake in which they are fitted should be subject to special consideration by the Administration to ensure that under all defined operating conditions that the overall emission value of the exhaust gas down stream of the system is no more than the certified value.

4.2.2 EGC System Technical Manual (ETM) “Scheme A”.

4.2.2.1 Each EGC unit should be supplied with an ETM provided by the Manufacturer. This ETM should, as a minimum, contain the following information:

- (a) the identification of the unit (manufacturer, model/type, serial number and other details as necessary) including a description of the unit and any required ancillary systems;
- (b) the operating limits, or range of operating values, for which the unit is certified. These should, as a minimum, include:
 - (i) maximum and, if applicable, minimum mass flow rate of exhaust gas;
 - (ii) the power, type and other relevant parameters of the fuel oil combustion unit for which the EGC unit is to be fitted. In the cases of boilers, the maximum air/fuel ratio at 100% load should also be given. In the cases of diesel engines whether the engine is of 2 or 4 stroke cycle;
 - (iii) maximum and minimum washwater flow rate, inlet pressures and minimum inlet water alkalinity (ISO 9963-1-2);
 - (iv) exhaust gas inlet temperature ranges and maximum and minimum exhaust gas outlet temperature with the EGC unit in operation;
 - (v) exhaust gas differential pressure range and the maximum exhaust gas inlet pressure with the fuel oil combustion unit operating at MCR or 80% of power rating whichever is appropriate;
 - (vi) salinity levels or fresh water elements necessary to provide adequate neutralizing agents; and
 - (vii) other factors concerning the design and operation of the EGC unit relevant to achieving a maximum emission value no higher than the certified value;
- (c) any requirements or restrictions applicable to the EGC unit or associated equipment necessary to enable the unit to achieve a maximum emission value no higher than the certified value;

- (d) maintenance, service or adjustment requirements in order that the EGCS unit can continue to achieve a maximum emission value no higher than the certified value. The maintenance, servicing and adjustments should be recorded in the EGC Record book;
- (e) a verification procedure to be used at surveys to ensure that its performance is maintained and that the unit is used as required (see section 4.4);
- (f) through range performance variation in washwater characteristics;
- (g) design requirements of the washwater system; and
- (h) the SCC.

4.2.2.2 The ETM should be approved by the Administration.

4.2.2.3 The ETM should be retained onboard the ship onto which the EGC unit is fitted. The ETM should be available for surveys as required.

4.2.2.4 Amendments to the ETM which reflect EGC unit changes that affect performance with respect to emissions to air and/or water should be approved by the Administration. Where additions, deletions or amendments to the ETM are separate to the ETM as initially approved, they should be retained with the ETM and should be considered as part of the ETM.

4.2.2.5 As an alternative to the maximum emission rate stipulated in Regulation 14(4)(b) a comparable SO₂ (ppm)/CO₂ (%) ratio as prescribed in Figure 1 of the Appendix I measured downstream of EGCS unit may be used.

4.2.3 In service surveys

4.2.3.1 The EGC unit should be subject to survey on installation and at Initial, Annual/Intermediate and Renewals Surveys by the Administration, irrespective of whether or not the ship is in a SECA at the time of Survey.

4.2.3.2 In accordance with MARPOL Annex VI regulation 10, EGC units may also be subject to inspection by PSC when operating within a SECA.

4.2.3.3 Prior to use within a SECA, each EGC unit should be issued with a SECA Compliance Certificate (SCC) by the Administration.

4.2.3.4 The ship's IAPP certificate should be duly endorsed at each survey as required by 4.2.3.1.

4.3 Emission limits

4.3.1 Each EGC unit should be capable of reducing emissions to equal to or less than the certified value at any load point when operated in accordance with the criteria as given within 4.2.2.1(b), as specified in paragraphs 4.3.2 through 4.3.5 of these Guidelines, and as excepted in paragraphs 4.3.7 and 4.3.8.

4.3.2 EGC units fitted to main propulsion diesel engines should meet the requirements of 4.3.1 at all loads between 25-100% of the load range of the engines to which they are fitted.

4.3.3 EGC units fitted to auxiliary diesel engines should meet the requirements of 4.3.1 at all loads between 10-100% of the load range of the engines to which they are fitted.

4.3.4 EGC units fitted to diesel engines which supply power for both main propulsion and auxiliary purposes should meet the requirements of 4.3.3.

4.3.5 EGC units fitted to boilers should meet the requirements of 4.3.1 at all loads between 10-100% of the load range (steaming rates) or, if the turn down ratio is smaller, over the actual load range of the boilers to which they are fitted.

4.3.6 In order to demonstrate performance, emission measurements should be undertaken, with the agreement of the Administration, at a minimum of four load points. One load point should be at 95-100% of the maximum exhaust gas mass flow rate for which the unit is to be certified. One load point should be within $\pm 5\%$ of the minimum exhaust gas mass flow rate for which the unit is to be certified. The other two load points should be equally spaced between the maximum and minimum exhaust gas mass flow rates. Where there are discontinuities in the operation of the system the number of load points should be increased, with the agreement of the Administration, so that it is demonstrated that the required performance over the stated exhaust gas mass flow rate range is retained. Additional intermediate load points should be tested if there is evidence of an emission peak below the maximum exhaust gas mass flow rate and above, if applicable, the minimum exhaust gas flow rate. These additional tests should be sufficient number as to establish the emission peak value.

4.3.7 For loads below those specified in 4.3.2 to 4.3.5, the EGC unit should continue in operation. In those cases where the fuel oil combustion equipment may be required to operate under idling conditions, the SO₂ emission concentration (ppm) at standardized O₂ concentration (15.0% diesel engines, 3.0% boilers) should not exceed 50 ppm.

4.3.8 Alternatively to the provisions of 4.3.2 to 4.3.5 and 4.3.7, each EGC unit should be capable of reducing emissions to the certified value or below, in SO₂ (ppm)/CO₂ (%) ratio at any load point when operated in accordance with the criteria as given within 4.2.2.1(b) and 4.2.2.4.

4.4 Onboard procedures for demonstrating compliance with emission limit

4.4.1 For each EGC unit, the ETM should contain a verification procedure for use at surveys as required. This procedure should not require specialized equipment or an in-depth knowledge of the system. Where particular devices are required they should be provided and maintained as part of the system. The EGC unit should be designed in such a way as to facilitate inspection as required. The basis of this verification procedure is that if all relevant components and operating values or settings are within those as approved, then the performance of the EGC system is within that required without the need for actual exhaust emission measurements. It is also necessary to ensure that the EGC unit is fitted to a fuel oil combustion unit for which it is rated – this forms part of the SCP.

4.4.2 Included in the verification procedure should be all components and operating values or settings which may affect the operation of the EGC unit and its ability to meet the required emission limit.

4.4.3 The verification procedure should be submitted by the EGC system manufacturer and approved by the Administration.

4.4.4 The verification procedure should cover both a documentation check and a physical check of the EGC unit.

4.4.5 The Surveyor should verify that each EGC unit is installed in accordance with the ETM and has an SCC as required.

4.4.6 At the discretion of the Administration, the Surveyor should have the option of checking one or all of the identified components, operating values or settings. Where there is more than one EGC unit, the Administration may, at its discretion, abbreviate or reduce the extent of the survey on board, however, the entire survey should be completed for at least one of each type of EGC unit on board provided that it is expected that the other EGC units perform in the same manner.

4.4.7 The EGC unit should include means to automatically record when the system is in use. This should automatically record, as a minimum, washwater pressure and flow rate at the EGC unit's inlet connection, pH of washwater at the EGC unit's inlet and outlet connections, exhaust gas pressure before and pressure drop across the EGC unit, fuel oil combustion equipment load, and exhaust gas temperature before and after the EGC unit. The data recording system should comply with the requirements of sections 7 and 8. In case of a unit consuming chemicals at a known rate as documented in ETM, records of such consumption in the EGC Record Book also serves this purpose.

4.4.8 Under Scheme A, if a continuous exhaust gas monitoring system is not fitted, it is recommended that a daily spot check of the exhaust gas quality in terms of SO₂ (ppm)/CO₂ (%) ratio, is used to verify compliance in conjunction with parameter checks stipulated in 4.4.7. If a continuous exhaust gas monitoring system is fitted, only daily spot checks of the parameters listed in paragraph 4.4.7 would be needed to verify proper operation of the EGC unit.

4.4.9 If the EGC system manufacturer is unable to provide assurance that the EGC unit will meet the certified value or below between surveys, by means of the verification procedure stipulated in 4.4.1, or if this requires specialist equipment or in-depth knowledge, it is recommended that continuous exhaust gas monitoring of each EGC unit be used to assure ship operators of compliance when operating within a SECA and in the event of port State authority inspection.

4.4.10 An EGC Record Book should be maintained by the shipowner recording maintenance and service of the unit. The form of this record should be submitted by the EGC system manufacturer and approved by the Administration. This record book should be available at surveys as required and may be read in conjunction with engine room logbooks and other data as necessary to confirm the correction operation of the EGC unit. Alternatively, this information should be recorded in the vessel's planned maintenance record system as approved by the Administration.

5 SCHEME B – EGC SYSTEM APPROVAL, SURVEY, AND CERTIFICATION USING CONTINUOUS MONITORING OF SO_x EMISSIONS

5.1 General

This Scheme should be used to demonstrate that the emissions from a fuel oil combustion unit fitted with an EGC will, with that system in operation, result in the required emission value (e.g., as stated in the SCP) or below at any load point, including during transient operation and thus compliance with the requirements of regulation 14(4)(b) of MARPOL Annex VI.

5.2 Approval

Compliance demonstrated in service by continuous exhaust gas monitoring. Monitoring system should be approved by the Administration and the results of that monitoring available to the Administration as necessary to demonstrate compliance as required.

5.3 Survey and certification

5.3.1 The monitoring system of the EGC system should be subject to survey on installation and at Initial, Annual/Intermediate and Renewals Surveys by the Administration, irrespective of whether or not the ship is in a SECA at the time of Survey.

5.3.2 In accordance with regulation 10 of MARPOL Annex VI monitoring systems of EGC units may also be subject to inspection by PSC when operating within a SECA.

5.3.3 The ship's IAPP certificate should be duly endorsed at each survey as required by 5.3.1.

5.4 Calculation of emission rate

5.4.1 Exhaust gas composition SO₂ (ppm)/CO₂ (%) ratio method should be measured at an appropriate position after the EGC unit and comply with the requirements of 6.2 and 6.15.

5.4.2 SO₂ (ppm) and CO₂ (%) to be continuously monitored and recorded onto a data recording and processing device at a rate which should not be less than 0.0035 Hz.

5.4.3 If more than one analyser is to be used to determine the SO₂/CO₂ ratio, these should be tuned to have similar sampling and measurement times and the data outputs aligned so that the SO₂/CO₂ ratio is fully representative of the exhaust gas composition.

5.5 Onboard procedures for demonstrating compliance with emission limit

5.5.1 The data recording system should comply with the requirements of sections 7 and 8.

5.5.2 Daily spot checks of the parameters listed in paragraph 4.4.7 are needed to verify proper operation of the EGC unit and should be recorded in the EGC Record book or in the engine room logger system.

5.6 EGC System Technical Manual (ETM) “Scheme B”

5.6.1 Each EGC unit should be supplied with an ETM provided by the Manufacturer. This ETM should, as a minimum, contain the following information:

- (a) the identification of the unit (manufacturer, model/type, serial number and other details as necessary) including a description of the unit and any required ancillary systems;
- (b) the operating limits, or range of operating values, for which the unit is certified. These should, as a minimum, include:
 - (i) maximum and, if applicable, minimum mass flow rate of exhaust gas;
 - (ii) the power, type and other relevant parameters of the fuel oil combustion unit for which the EGC unit is to be fitted. In the cases of boilers, the maximum air/fuel ratio at 100% load should also be given. In the cases of diesel engines whether the engine is of 2 or 4 stroke cycle;
 - (iii) maximum and minimum washwater flow rate, inlet pressures and minimum inlet water alkalinity (ISO 9963-1-2);
 - (iv) exhaust gas inlet temperature ranges and maximum and minimum exhaust gas outlet temperature with the EGC unit in operation;
 - (v) exhaust gas differential pressure range and the maximum exhaust gas inlet pressure with the fuel oil combustion unit operating at MCR or 80% of power rating whichever is appropriate;
 - (vi) salinity levels or fresh water elements necessary to provide adequate neutralizing agents; and
 - (vii) other parameters as necessary concerning the operation of the EGC unit;
- (c) any requirements or restrictions applicable to the EGC unit or associated equipment;
- (d) through range performance variation in washwater characteristics;
- (e) design requirements of the washwater system.

5.6.2 The ETM should be approved by the Administration.

5.6.3 The ETM should be retained onboard the ship onto which the EGC unit is fitted. The ETM should be available for surveys as required.

5.6.4 Amendments to the ETM which reflect EGC unit changes that affect performance with respect to emissions to air and/or water should be approved by the Administration. Where additions, deletions or amendments to the ETM are separate to the ETM as initially approved, they should be retained with the ETM and should be considered as part of the ETM.

6 EMISSION TESTING

6.1 Emission testing should follow the requirements of the NO_x Technical Code, chapter 5, and associated Appendices, except as provided for in these Guidelines.

6.2 CO₂, O₂ and SO₂ should be measured as appropriate. CO₂, O₂ and SO₂ measurement error not to exceed +/- 5 % of the reading or +/- 3,5 % of full scale, whichever is smaller, according to Appendix 3, section 1.5 in the NO_x Technical Code. For concentrations of less than 100ppm, the measurement error should not exceed +/- 4ppm.

6.3 SO₂ should be measured on a dry or wet basis using analysers operating on NDIR or NDUV principles and with additional equipment such as dryers as necessary. Other systems or analysers may be accepted, subject to the approval of the Administration, provided they yield equivalent or better results to those of the equipment referenced above.

6.4 An exhaust gas sample for SO₂ should be obtained from a representative sampling point downstream of the EGC unit.

6.5 SO₂ and CO₂ should be monitored using either *in situ* or extractive sample systems.

6.6 Extractive exhaust gas samples for SO₂ determination should be maintained at a sufficient temperature to avoid condensed water in the sampling system and hence loss of SO₂.

6.7 If an extractive exhaust gas sample for determination needs to be dried prior to analysis it should be done in a manner that does not result in loss of SO₂ in the sample as analysed.

6.8 Where SO₂ is measured by an in-situ system, the water content in the exhaust gas stream at that point is also to be determined in order to correct the reading to a dry basis value.

6.9 Where the exhaust gas mass flow is to be calculated in accordance with the NO_x Technical Code, Appendix 6, the complete combustion case calculations may be used. The exhaust gas mass flow (GEXHW) should be determined in respect of the mass flow into the EGC unit.

6.10 In applying the NO_x Technical Code, equation 15, the dry basis SO₂ concentration should be converted to a wet basis value using the dry/wet correction factor applicable to the exhaust gas at entry into the EGC unit (NO_x Technical Code, equation 11, CO = 0):

$$w = 0.002855, u = w/\text{exhaust gas density in g/m}^3 \text{ at } 0^{\circ}\text{C and } 101.3 \text{ kPa}$$

6.11 The fuel oil as used in the test should be a residual blend product. A representative sample of that fuel should be analysed in order to establish its chemical composition (carbon, hydrogen and sulphur) together with the other parameters as necessary to establish its grade in accordance with the ISO 8217 specification. If necessary to achieve the sulphur levels required

under section 4.1.2, SO₂ gases can be added to the exhaust gas in a manner ensuring equivalent SO_x level and homogeneity of SO_x in the exhaust gas prior to the EGC system inlet.

6.12 For diesel engines the power should be the uncorrected brake power.

6.13 For boilers the “power” should be determined based on the fuel rate and assumed brake specific fuel consumption of 200 g/kWh.

6.14 In lieu of the testing procedure laid down in 6.9 to 6.10 and 6.12 to 6.13, compliance may be demonstrated by measuring of SO₂ and CO₂ concentration in the exhaust gas down stream of the EGC.

6.15 Should the SO₂ (ppm)/CO₂ (%) ratio method be used:

- (a) The conditions stipulated in 6.4 and 6.5 should also apply to the measurement of CO₂ (%) and it is recommended that SO₂ and CO₂ samples should be obtained at the same location.
- (b) Measurement of SO₂ and CO₂ should either be carried out above the respective dew points or on a fully dry basis recognizing that the conditions stipulated in 6.6 to 6.8 should also apply to the measurement of CO₂ (%).
- (c) The carbon and hydrogen content of the test fuel as stipulated in 6.11 need not be determined.
- (d) SO₂ and CO₂ measurement technology should be as given under 6.3.

7 DATA RECORDING AND PROCESSING DEVICE

7.1 The recording and processing device should be of robust, tamper-proof design with read-only capability.

7.2 The recording and processing device should record the data required by sections 4.4.7, 5.4.2, and 10.3 against UTC and ships position by a Global Navigational Satellite System (GNSS).

7.3 The recording and processing device should be capable of preparing reports over specified time periods.

7.4 Data should be retained for a period of not less than 18 months from the date of recording. If the unit is changed over that period, the shipowner should ensure that the required data is retained onboard and available as required.

7.5 The device should be capable of downloading a copy of the recorded data and reports in a readily useable format. Such copy of the data and reports should be available to the Administration or port State authority as requested.

8 ONBOARD MONITORING MANUAL (OMM)

8.1 An OMM should be prepared to cover EGC unit for each item of fuel oil combustion equipment, which should be identified, for which compliance is to be demonstrated.

8.2 The OMM should, as a minimum, include:

- (a) the sensors to be used in evaluating EGC system performance and washwater monitoring, their service, maintenance and calibration requirements;
- (b) the positions from which exhaust emission measurements and washwater monitoring are to be taken together with details of any necessary ancillary services such as sample transfer lines and sample treatment units and any related service or maintenance requirements;
- (c) the analysers to be used, their service, maintenance, and calibration requirements;
- (d) analyser zero and span check procedures; and
- (e) other information or data relevant to the correct functioning of the monitoring systems or its use in demonstrating compliance.

8.3 The OMM should specify how the monitoring is to be surveyed.

8.4 The OMM should be approved by the Administration.

9 SHIP COMPLIANCE

9.1 SECA Compliance Plan (SCP)

9.1.1 For all ships which are to use an EGC unit, in part or in total, in order to comply with the requirements of regulation 14(4) of MARPOL Annex VI there should be a SCP for the ship, approved by the Administration.

9.1.2 The SCP should list each item of fuel oil combustion equipment which is to meet the requirements for operating in a SECA.

9.1.3 Under Scheme A, the SCP should present how continuous monitoring data will demonstrate that the parameters in paragraph 4.4.7 are maintained within the manufacturer's recommended specifications. Under Scheme B, this would be demonstrated using daily recordings of key parameters.

9.1.4 Under Scheme B, the SCP should present how continuous exhaust gas emissions monitoring will demonstrate that the ship total SO₂ (ppm)/CO₂ (%) ratio is comparable to regulation 14(4)(b) or below as prescribed in Figure 1 of Appendix I. Under Scheme A, this would be demonstrated using daily exhaust gas emission recordings.

9.1.5 There may be some equipment such as small engines and boilers to which the fitting of EGC units would not be practical, particularly where such equipment is located in a position remote from the main machinery spaces. All such fuel oil combustion units should be listed in the SCP. For these fuel oil combustion units which are not to be fitted with EGC units, compliance may be achieved by means of regulation 14(4)(a) of MARPOL Annex VI, while operating within a SECA. Alternatively, compliance may be achieved based on total ship emissions as described in paragraphs 9.1.7 and 9.1.8.

9.1.6 Ship construction requirements generally require that each fuel oil combustion unit should have its own exhaust gas system venting to the atmosphere. Therefore compliance by the ship may be demonstrated by each item of fuel oil combustion equipment meeting the requirements of either Scheme A or Scheme B. Alternatively, compliance may be demonstrated on the basis of total emissions generated by the ship as noted in paragraphs 9.1.7 and 9.1.8.

9.1.7 If each fuel oil combustion unit meets the requirements of either regulation 14(4)(a) or 14(4)(b) of MARPOL Annex VI, the ship is considered to be in compliance with the requirements.

9.1.8.1 Recognizing that the limit given in regulation 14(4)(b) of MARPOL Annex VI is for the ship, not each individual item of combustion equipment, the shipowner should have the opportunity to balance performance which considerably exceeds that stipulated in regulation 14(4)(b) or the comparable SO₂ (ppm)/CO₂ (%) ratio as prescribed in Figure 1 of Appendix I against that of equipment, potentially not fitted with EGC units, which does not meet that requirement. These cases should be subject to special consideration by the administration. In particular the SCP should detail how the actual emissions from each fuel oil combustion unit are to be aggregated together to obtain an overall, real time, emission value for the ship which does not exceed that stipulated in regulation 14(4)(b) or the comparable SO₂ (ppm)/CO₂ (%) ratio as prescribed in Figure 1 of Appendix I.

9.1.8.2 Since the emission value in regulation 14(4)(b) of MARPOL Annex VI is an alternative to that given in regulation 14(4)(a) of MARPOL Annex VI, not an equivalent, compliance in excess of that required by means of regulation 14(4)(a) of MARPOL Annex VI, in respect of fuel oil combustion units, such as given in section 9.1.8.1, should only be set against the requirements of regulation 14(4)(b) of MARPOL Annex VI where it can be clearly documented as to the actual sulphur content of the fuel oil being used at any time together with the requirement that the specific fuel consumption rate (g fuel/kWh) of that equipment is capable of determination on a real time basis (calibration requirements of such equipment to comply with those as given in the NO_x Technical Code).

9.1.9 At no time during operation in a SECA should the total ship emissions, as described in paragraph 9.1.5, exceed that stipulated in regulation 14(4)(b) or exceed the comparable SO₂ (ppm)/CO₂ (%) ratio as prescribed in Figure 1 of Appendix I. Shipowners are advised to consider worst case operating scenarios, such as manoeuvring or high power operation, in their SO_x control strategies.

9.2 Demonstration of Compliance

9.2.1 Scheme A

9.2.1.1 The SCP should refer to, not reproduce, the ETM, EGC Record Book or Engine Room logger system and OMM as specified under Scheme A. It should be noted that as an alternative, the maintenance records may be recorded in the ship's Planned Maintenance Record System, as allowed by the Administration.

9.2.1.2 For all fuel oil combustion equipment listed under 9.1.1, details should be provided demonstrating that the rating and restrictions for the EGC unit as approved, 4.2.2.1(b), are complied with.

9.2.1.3 Required parameters should be monitored and recorded as required under 4.4.7 while within a SECA in order to demonstrate compliance.

9.2.2 Scheme B

9.2.2.1 The SCP should refer to, not reproduce, the ETM, EGC Record Book or Engine Room logger system and OMM as specified under Scheme B.

10 WASHWATER

10.1 Washwater discharge criteria¹

10.1.1 When the EGC System is operated in a ports, harbours, or estuaries, the discharge water should comply with the following limits:

10.1.2 pH criteria

10.1.2.1 The washwater pH should comply with one of the following requirements which should be recorded in the ETM:

- (i) The discharge washwater should have a pH of no less than 6.5 at the overboard discharge with the exception that during manoeuvring and transit, the maximum difference between inlet and outlet of 2 pH units is allowed.
- (ii) During commissioning of the unit(s) after installation, the discharged washwater plume should be measured externally from the ship (at rest in harbour) and the discharge pH at the ship's overboard pH monitoring point will be recorded when the plume at 4 metres from the discharge point equals or is above pH 6.5. The discharged pH to achieve a minimum pH units of 6.5 will become the overboard pH discharge limit recorded in the ETM.

¹ The washwater discharge criteria should be revised in the future as more data becomes available on the contents of the discharge and its effects, taking into account any advice given by GESAMP.

10.1.3 PAHs (Polycyclic Aromatic Hydrocarbons)

The washwater PAH should comply with the following requirements. The appropriate limit should be recorded in the ETM.

10.1.3.1 The maximum continuous PAH concentration in the washwater should not be greater than 50 µg/L PAH_{phe} (phenanthrene equivalance) above the inlet water PAH concentration. For the purposes of this criteria, the PAH concentration in the washwater should be measured downstream of the water treatment equipment, but upstream of any washwater dilution or other reactant dosing unit, if used, prior to discharge.

10.1.3.2 The 50 µg/L limit described above is normalized for a washwater flow rate through the EGC unit of 45t/MWh where the MW refers to the MCR or 80% of the power rating of the fuel oil combustion unit. This limit would have to be adjusted upward for lower washwater flow rates per MWh, and vice-versa, according to the table below.

| Flow Rate (t/MWh) | Discharge Concentration Limit (µg/L PAH _{phe} equivalents) | Measurement Technology |
|-------------------|---|------------------------|
| 0 - 1 | 2250 | Ultraviolet Light |
| 2.5 | 900 | – ” – |
| 5 | 450 | Fluorescence |
| 11.25 | 200 | – ” – |
| 22.5 | 100 | – ” – |
| 45 | 50 | – ” – |
| 90 | 25 | – ” – |

10.1.3.3 For a 15-minute period in any 12-hour period, the continuous PAH_{phe} concentration limit may exceed the limit described above by up to 100%. This would allow for an abnormal start up of the EGC unit.

10.1.4 Turbidity/Suspended Particle Matter

The washwater turbidity should comply with the following requirements. The limit should be recorded in the ETM.

10.1.4.1 The washwater treatment system should be designed to minimize suspended particulate matter, including heavy metals and ash.

10.1.4.2 The maximum continuous turbidity in washwater should not be greater than 25 FNU (formazin nephelometric units) or 25 NTU (nephelometric turbidity units) or equivalent units, above the inlet water turbidity. However during periods of high inlet turbidity the precision of the measurement device and the time lapse between inlet measurement and outlet measurement are such that the use of a difference limit is unreliable. Therefore all turbidity difference readings should be a rolling average over a 15-minute period to a maximum of 25 FNU. For the purposes of this criteria the turbidity in the washwater should be measured downstream of the water treatment equipment but upstream of washwater dilution (or other reactant dosing) prior to discharge.

10.1.4.3 For a 15-minute period in any 12-hour period, the continuous turbidity discharge limit may be exceeded by 20%.

10.1.5 Nitrates

10.1.5.1 The washwater treatment system should prevent the discharge of nitrates beyond that associated with a 12% removal of NO_x from the exhaust, or beyond 60 mg/l normalized for washwater discharge rate of 45 tons/MWh whichever is greater.

10.1.5.2 All systems should be tested for nitrates in the discharge water. If typical nitrate amounts are above 80% of the upper limit, it should be recorded in the ETM.

10.1.6 Washwater additives and other substances

10.1.6.1 An assessment of the washwater is required for those EGC technologies which make use of active substances, preparations or create relevant chemicals *in situ*. The assessment could take into account relevant guidelines such as resolution MEPC 126(53), procedure for approval of ballast water management systems that make use of active substances (G9) and if necessary additional washwater discharge criteria should be established.

10.2 Washwater monitoring

10.2.1 pH, oil content (as measured by PAH levels), and turbidity should be continuously monitored and recorded as recommended in section 1 of these guidelines. The monitoring equipment should also meet the performance criteria described below:

pH

10.2.2 The pH electrode and pH meter should have a resolution of 0.1 pH units and temperature compensation. The electrode should comply with the requirements defined in BS 2586 or of equivalent or better performance and the meter should meet or exceed BS EN ISO 60746-2:2003.

PAH

10.2.3 The PAH monitoring equipment should be capable to monitor PAH in water in a range to at least twice the discharge concentration limit given in the table above. The equipment should be demonstrated to operate correctly and not deviate more than 5% in washwater with turbidity within the working range of the application.

10.2.4 For those applications discharging at lower flow rates and higher PAH concentrations, ultraviolet light monitoring technology or equivalent, should be used due to its reliable operating range.

Turbidity

10.2.5 The turbidity monitoring equipment should meet requirements defined in ISO 7027:1999 or USEPA 180.1.

10.3 Washwater monitoring data recording

10.3.1 The data recording system should comply with the requirements of sections 7 and 8 and should continuously record pH, PAH and Turbidity as specified in the washwater criteria.

10.4 Washwater residue

10.4.1 Residues generated by the EGC unit should be delivered ashore to adequate reception facilities. Such residues should not be discharged to the sea or incinerated on board.

10.4.2 Each ship fitted with an EGC unit should record the storage and disposal of washwater residues in an EGC log, including the date, time and location of such storage and disposal. The EGC log may form a part of an existing log book or electronic recording system as approved by the Administration.

APPENDIX I

SO₂ OVER CO₂ MONITORING METHOD

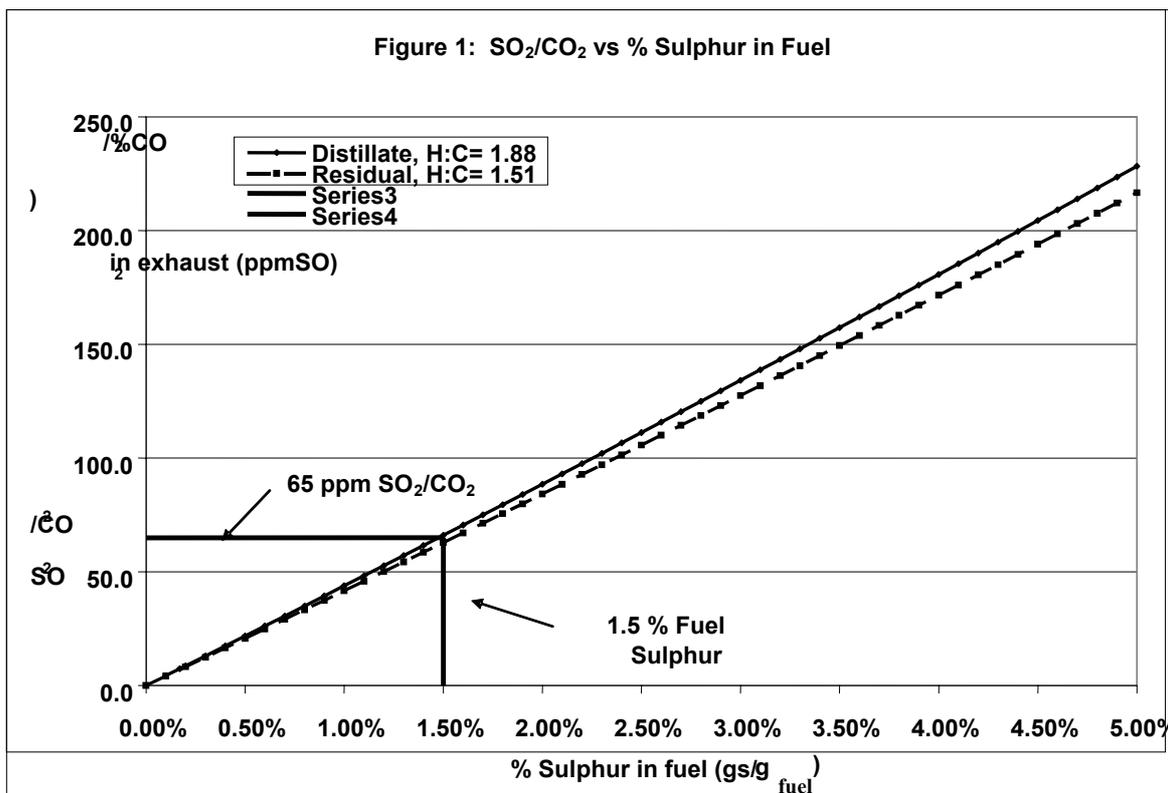
1 Correspondence between 65 (¹ppm/%) SO₂/CO₂ and 1.5% sulphur in fuel is demonstrated by first calculating the mass ratio of fuel sulphur to fuel carbon, which is tabulated in Table 1 for various fuels and fuel sulphur contents; including 1.5% sulphur for both distillate and residual fuels. These ratios were used to solve for the corresponding SO₂ and CO₂ concentrations in exhaust, which are tabulated in Table 2. Molecular weights (MW) were taken into account to convert mass fractions to mole fractions. For the 1.5% sulphur fuels in Table 2, the amount of CO₂ is set first at 8% and then changed to 0.5% to show that there is no effect due to changes in excess air. As expected, the absolute SO₂ concentration changes, but the SO₂/CO₂ ratio does not. This indicates that the SO₂/CO₂ ratio is independent of fuel-to-air ratios. Therefore, SO₂/CO₂ ratio can be used robustly at any point of operation, including operation where no brake power is produced.

Note that the SO₂/CO₂ ratio varies slightly from distillate to residual fuel. This occurs because of the very different atomic hydrogen-to-carbon ratios (H:C) of the two fuels. Figure 1 illustrates the extent of the SO₂/CO₂ ratios' sensitivity to H:C over a broad range of H:C and fuel sulphur concentrations. From Figure 1, it can be concluded that for fuel sulphur levels less than 3.00% S, the difference in S/C ratios for distillate and residual fuel is less than 5.0%.

| Table 1: Fuel properties for marine distillate and residual fuel | | | | | | |
|--|--------|----------|---------|-------|---------|----------------|
| | Carbon | Hydrogen | Sulphur | Other | H:C | Fuel S/C |
| | g/g | g/g | g/g | g/g | mol/mol | g/g |
| Distillate* | 86.20% | 13.60% | 0.17% | 0.03% | 1.880 | 0.00197 |
| Residual* | 86.10% | 10.90% | 2.70% | 0.30% | 1.509 | 0.03136 |
| Distillate 1.5% S | 85.05% | 13.42% | 1.50% | 0.03% | 1.880 | 0.01764 |
| Residual 1.5% S | 87.17% | 11.03% | 1.50% | 0.30% | 1.509 | 0.01721 |

*Based on properties in the IMO NO_x Monitoring Guidelines, MEPC.103(49)

| Table 2: Emissions calculations corresponding to 1.5 % fuel sulphur | | | | |
|---|-----------------|------------------|--------------------------------------|----------------|
| | CO ₂ | SO ₂ | Exh SO ₂ /CO ₂ | Exh S/C |
| | % | ¹ ppm | ¹ ppm/% | g/g |
| Distillate 0.17% S | 8 | 59.1 | 7.4 | 0.00197 |
| Residual 2.70% S | 8 | 939.7 | 117.5 | 0.03136 |
| Distillate 1.5% S | 8 | 528.5 | 66.1 | 0.01764 |
| Residual 1.5% S | 8 | 515.7 | 64.5 | 0.01721 |
| Distillate 1.5% S | 0.5 | 33.0 | 66.1 | 0.01764 |
| Residual 1.5% S | 0.5 | 32.2 | 64.5 | 0.01721 |



2 Correspondence between 65 (ppm/%) / CO₂ and 6.0 g/kWh is demonstrated by showing that their S/C ratios are similar. This requires the additional assumption of a brake-specific fuel consumption value of 200 g/kWh. This is an appropriate average for marine diesel engines. The calculation is as follows:

$$S/C_{fuel} = \frac{\text{brake-specific SO}_2 * (MW_s / MW_{SO_2})}{BSFC * (\% \text{ carbon in fuel} / 100)}$$

brake-specific SO₂ = 6.0 g/kW-hr

MW_s = 32.065 g/mol

MW_{SO₂} = 64.064 g/mol

BSFC = 200 g/kW-hr

% carbon in 1.5% S fuel (from Table 1) = 85.05% (distillate) & 87.17% residual

$$S/C_{\text{residual fuel}} = \frac{6.0 * (32.065 / 64.064)}{200 * (87.17\% / 100)}$$

$$S/C_{\text{residual fuel}} = 0.01723$$

$$S/C_{\text{distillate fuel}} = \frac{6.0 * (32.065 / 64.064)}{200 * (85.05\% / 100)}$$

$$S/C_{\text{distillate fuel}} = 0.01765$$

Note that the S/C mass ratios calculated above, based on 6.0 g/kWh and 200 g/kWh BSFC, are both within 0.10% of the S/C mass ratios in the emissions table (Table 2). Therefore, 65 ¹ppm/CO₂ corresponds well to 6.0 g/kWh in regulation 14(4)(b).

3 Thus, the working formulas are as follows:

$$\text{For complete combustion} = \frac{\text{SO}_2 \text{ (ppm}^*)}{\text{CO}_2 \text{ (\%}^*)} \leq 65$$

$$\text{For incomplete combustion} = \frac{\text{SO}_2 \text{ (ppm}^*)}{\text{CO}_2 \text{ (\%}^*) + (\text{CO (ppm}^*)/10000) + (\text{THC (ppm}^*)/10000)} \leq 65$$

* Note: gas concentrations must be sampled or converted to the same residual water content (e.g., fully wet, fully dry).

4 The following is the basis of using the 65 (¹ppm/%) SO₂/CO₂ as the limit for determining compliance with regulation 14:

- (a) This limit can be used to determine compliance from fuel oil burners that do not produce mechanical power.
- (b) This limit can be used to determine compliance at any power output, including idle.
- (c) This limit only requires two gas concentration measurements at one sampling location.
- (d) There is no need to measure any engine parameters such as engine speed, engine torque, engine exhaust flow, or engine fuel flow.
- (e) If both gas concentration measurements are made at the same residual water content in the sample (e.g. fully wet, fully dry), no dry-to-wet conversion factors are required in the calculation.
- (f) This limit completely decouples the thermal efficiency of the fuel oil combustion unit from the EGCS-SO_x unit.
- (g) No fuel properties need to be known.
- (h) Because only two measurements are made at a single location, transient engine or EGCS-SO_x unit effects can be minimized by aligning signals from just these two analysers. (Note that the most appropriate points to align are the points where each analyser responds to a step change in emissions at the sample probe by 50% of the steady-state value).
- (i) This limit is independent of the amount of exhaust gas dilution. Dilution may occur due to evaporation of water in an EGCS-SO_x unit, and as part of an exhaust sampler's preconditioning system.

¹ ppm means "parts per million". It is assumed that ppm is measured by gas analysers on a molar basis, assuming ideal gas behaviour. The technically correct units are actually micro-moles of substance per mole of total amount (μmol/mol), but ppm is used in order to be consistent with units in the NO_x Technical Code.

APPENDIX II

WASHWATER DATA COLLECTION

Background

The washwater discharge criteria are intended to act as initial guidance for implementing EGC system designs. The criteria should be revised in the future as more data becomes available on the contents of the discharge and its effects, taking into account any advice given by GESAMP.

To this end, ships in conjunction with the EGC manufacturer are requested to sample and analyse samples of:

- inlet water (for background);
- water after the scrubber (but before any treatment system); and
- discharge water.

This sampling could be made during approval testing or shortly after commissioning and at about twelve-month intervals for a period of two years of operation (minimum of three samples). Sampling guidance and analysis should be undertaken by laboratories using EPA or ISO test procedures for the following parameters:

- pH
- PAH and oil (detailed GC-MS analysis)
- Nitrate
- Nitrite
- Cd
- Cu
- Ni
- Pb
- Zn
- As
- Cr
- V

The extent of laboratory testing may be varied or enhanced in the light of developing knowledge.

When submitting samples, information on washwater discharge flow rates, dilution of discharge, if applicable, and engine power should be included as well as specifications of the fuel used from the BDN as a minimum.

It is recommended that the ship that has provided this information to the satisfaction of the Administration should be granted a waiver for compliance of the existing installation(s) to possible future stricter washwater discharge standards. The Administration should forward information submitted on this issue to the Organization for dissemination by the appropriate mechanisms.

ANNEX 5

DRAFT AMENDMENTS TO MARPOL ANNEX VI

[See MEPC 57/21/Add.1]

ANNEX 6

DRAFT AMENDMENTS TO THE NO_x TECHNICAL CODE

[See MEPC 57/21/Add.1]

ANNEX 7

**TERMS OF REFERENCE FOR THE INTERSESSIONAL MEETING OF THE
WORKING GROUP ON GREENHOUSE GAS EMISSIONS FROM SHIPS
OSLO, NORWAY (23-27 JUNE 2008)**

Recognizing the need to address GHG emissions from the maritime sector, in co-operation with the UNFCCC, and taking into account the conclusions of MEPC 57 on the reduction of greenhouse gas emissions from ships, the submissions by Member States to MEPC 57, and further submissions received by the Secretariat before 30 May 2008, the intersessional meeting of the Working Group on GHG Emissions from Ships is instructed further to address market-based, operational and technical measures identified by the MEPC 57 Working Group on GHG-related issues and, in a non-prioritized order:

- .1 develop a mandatory CO₂ Design Index for new ships and, if deemed appropriate, for approval at MEPC 58;
- .2 review the existing CO₂ operational index guidelines (MEPC/Circ.471) with a view to finalization at MEPC 58 and, in particular:
 - .1 develop a methodology for a CO₂ baseline in terms of efficiency; and
 - .2 consider the purpose of the CO₂ operational indexing scheme;
- .3 further develop mechanisms with GHG reduction potential for international shipping, with a view to selecting the most promising measures for consideration at MEPC 58, *inter alia*:
 - .1 global levy/hybrid mechanism;
 - .2 Emissions Trading Schemes (ETS) and/or Clean Development Mechanism (CDM); and
 - .3 best practices on the range of measures as identified by MEPC 57 and how they can be implemented by ship builders, operators, charterers, ports and other relevant partners to make all possible efforts to reduce GHG emissions, with the aim of developing a resolution as appropriate;
- .4 consider the level of reductions that can be achieved, address the design, implementation, cost benefit, capacity-building and regulatory/legal aspects as well as the impacts for the shipping industry, the flag and port States and other stakeholders as appropriate, associated with each of these options; and
- .5 present a written report to MEPC 58.

ANNEX 8

**UNIFIED INTERPRETATION TO REGULATIONS 1.28 AND 1.30 OF
MARPOL ANNEX I AND REGULATION 1.1 OF MARPOL ANNEX IV**

“A similar stage of construction” means the stage at which:

- .1 construction identifiable with a specific ship begins; and
- .2 assembly of that ship has commenced comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

ANNEX 9

UNIFIED INTERPRETATION TO REGULATION 22 OF MARPOL ANNEX I

The current Unified Interpretation to regulation 22 of MARPOL Annex I approved at MEPC 56 (MEPC 56/23, annex 16) is replaced by the following:

- 1 The term “*pump-room*” means a cargo pump-room. Ballast piping is permitted to be located within the pump-room double bottom provided any damage to that piping does not render the ship’s pumps located in the “*pump-room*” ineffective.
- 2 The double bottom protecting the “*pump-room*” can be a void tank, a ballast tank or, unless prohibited by other regulations, a fuel oil tank.
- 3 Bilge wells may be accepted within the double bottom provided that such wells are as small as practicable and the distance between the well bottom and the ship's baseline measured at right angles to the ship's baseline is not less than 0.5h.
- 4 Where a portion of the pump-room is located below the minimum height required in regulation 22.2, then only that portion of the pump-room is required to be protected by a double bottom.

ANNEX 10

**REVISED WORK PROGRAMME OF THE OPRC-HNS TECHNICAL GROUP
AND PROVISIONAL AGENDA FOR TG 8**

| ACTIVITY | MEPC 57 | MEPC 58 | MEPC 59 | MEPC 60 | MEPC 61 |
|--|------------|------------|------------|------------|------------|
| Year: | 2008 | 2008 | 2009 | 2010 | 2010 |
| HNS - Related Activities | | | | | |
| INFORMATION SERVICES | | | | | |
| 1. Organization of fourth R&D Forum | X | X | X | X | |
| 2. Information exchange on incidents involving HNS and lessons learnt | X | X | X | X | X |
| MANUALS & RESOURCES FOR CAPACITY BUILDING | | | | | |
| 3. Development of manuals and guidance documents on chemical pollution | | | | | |
| 1. Guidance document on chemical pollution to address legal and administrative aspects of HNS incidents | X | X | X | X | |
| TRAINING | | | | | |
| 4. Two model courses on preparedness and response to HNS incidents | | | | | |
| 1. Introductory Course for Operations/First Responder Level | X | X | X | X | |
| 2. Introductory Course for Incident Management Level | X | X | X | X | X |
| OPRC - Related Activities | | | | | |
| 5. Reviewing and upgrading combating manuals/guidelines | | | | | |
| 1. Manual on oil pollution – Section I : Prevention | X | X | X | X | X |
| 6. Creation of new manuals and guidance | | | | | |
| 1. Comparative study and development of guidelines on shoreline clean-up assessment (developed through REMPEC: comparative study of existing guidelines) | X | X | X | X | X |
| 2. Technical guidelines on waste management (based on the Mediterranean Waste management Study) | | | X | X | X |
| 3. Technical guidelines on sunken oil assessment and removal techniques | X | X | X | X | X |
| 4. Guidance document on identification and observation of spilled oil | X | X | X | X | X |
| 5. Guidance document on establishment of coordinated Joint Information Centres during oil spill response | X | X | X | X | X |
| 6. Guidance document on Incident Command System during oil spill response, including ICS position responsibilities | X | X | X | X | X |
| 7. Guideline for oil spill response in fast currents | X | X | X | X | X |

| ACTIVITY | MEPC 57 | MEPC 58 | MEPC 59 | MEPC 60 | MEPC 61 |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| Year: | 2008 | 2008 | 2009 | 2010 | 2010 |
| 8. Guidance document on Incident Command System during oil spill response, including ICS position responsibilities | X | X | X | X | X |
| 9. Terms of Reference of the OPRC-HNS Technical Group | | X | X | X | X |
| 7. OPRC Training | | | | | |
| 1. Review and update the OPRC Train-the-Trainer course | X | X | X | | |
| Co-operation with other International Organizations | | | | | |
| 8. Co-operation with IAEA | Ongoing | | | | |
| 9. Promotion of Co-operation between IMO and EC, as appropriate | Ongoing | | | | |
| 10. Promotion of Co-operation between IMO and WMO's Expert Team on Marine Accident Emergency Support (ETMAES) | X | X | X | X | X |
| 11. Promotion of Co-operation between IMO and the global network of Area Meteorological and Oceanographic Co-ordinators (AMOCs) | Ongoing | | | | |

PROVISIONAL AGENDA FOR TG 8

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other bodies
 - 3 Manuals and guidance documents
 - .1 Manual on chemical pollution to address legal and administrative aspects of HNS incidents;
 - .2 Manual on oil pollution, Section I – Prevention;
 - .3 Comparative study of guidelines on oiled shoreline assessment;
 - .4 Guidance document on the identification and observation of spilled oil;
 - .5 Technical guidelines on sunken oil assessment and removal techniques;
 - .6 Guidelines on establishment of coordinated Joint Information Centres during oil spill response;
 - .7 Guidance document on Incident Command System during oil spill response, including ICS position responsibilities;
 - .8 Guideline for oil spill response in fast currents; and
 - 4 Training
 - .1 Introductory IMO model courses on preparedness and response to HNS pollution incidents in the marine environment;
 - .2 OPRC Train-the-Trainer Course.
 - 5 Information services and exchange
 - .1 Status of preparations for the Fourth R&D Forum on HNS in the marine environment; and
 - .2 Summary of incidents involving HNS and lessons learnt.
 - 6 Co-operation with other organizations

- 7 Technical co-operation implementation on OPRC and HNS
- 8 Work programme and provisional agenda for TG 9
- 9 Any other business
 - .1 Study of the On-board Passive and Corrective Safety Devices (FOR Systems); and
 - .2 Terms of Reference of the OPRC-HNS Technical Group.
- 10 Report to the Committee

ANNEX 11**STATEMENT BY THE DELEGATION OF SINGAPORE CONCERNING THE
TORRES STRAIT EXTENSION TO THE GREAT BARRIER REEF PSSA**

The Singapore delegation would like to clarify the nature of the Associated Protective Measure that was adopted, in relation to the Torres Strait, as an extension of the Great Barrier Reef PSSA. We do not wish to re-open the debate on the issue but request that our Statement be included in the records of this meeting.

Mr. Chairman, we would like to draw the attention of this Committee to the annex of document MEPC 57/7/1, and its corrigendum, and in particular to the bottom of page 1, relating to the area “Torres Strait as an extension to GBR PSSA”.

Mr. Chairman, this delegation would like to reiterate that the Associated Protective Measure, i.e. “IMO-recommended Australian system of pilotage; two-way route”, contained in resolution MEPC.133(53) is recommendatory in nature and provides no international legal basis for the imposition of mandatory pilotage in the Torres Strait, or any other strait used for international navigation.

This interpretation was re-affirmed by the decision reached at the 55th session of this Committee where the Chairman had summed up the views of the overwhelming majority of the delegates that the resolution was recommendatory in nature.

More recently, distinguished delegates, you will recall that the recommendatory nature of resolution MEPC.133(53) was further re-affirmed by the 25th session of the IMO Assembly.

Thank you Mr. Chairman.

ANNEX 12**RESOLUTION MEPC.171(57)****Adopted on 4 April 2008****DESIGNATION OF THE
PAPAHĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT
AS A PARTICULARLY SENSITIVE SEA AREA**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

BEING AWARE of the ecological, socio-economic and scientific attributes of the Papahānaumokuākea Marine National Monument, as well as its vulnerability to damage by international shipping activities and the steps taken by the United States to address that vulnerability,

NOTING the Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas adopted by resolution A.982(24) (PSSA Guidelines) and the Revised Guidance Document for Submission of PSSA Proposals to IMO set forth in MEPC/Circ.510,

HAVING CONSIDERED the proposal made by the Government of the United States that the Papahānaumokuākea Marine National Monument be designated as a Particularly Sensitive Sea Area,

HAVING AGREED that the criteria for the identification and designation of a Particularly Sensitive Area provided in resolution A.982(24) are fulfilled for the Papahānaumokuākea Marine National Monument,

HAVING NOTED that the Maritime Safety Committee, at its eighty-third session, in considering the necessary associated protective measures, adopted new and amended, routing measures, as well as a new ship reporting system applicable to the proposed Particularly Sensitive Sea Area,

1. DESIGNATES the Papahānaumokuākea Marine National Monument described in annex 1 as a Particularly Sensitive Sea Area;
2. INVITES Member Governments to recognize the ecological, socio-economic, and scientific attributes of the area, set forth in annex 2, as well as its vulnerability to damage by international shipping activities, as described in annex 3; and
3. FURTHER INVITES Member Governments to note the associated protective measures established to address the area's vulnerability, the details of which are contained in annex 4, and request ships flying their flag that they act in accordance with such measures.

ANNEX 1

**DESCRIPTION OF THE PAPA HĀNAUMOKUĀKEA MARINE
 NATIONAL MONUMENT PSSA***

(Reference chart: United States 19016, 2007 edition; 19019, 2007 edition; 19022, 2007 edition. These charts are based on World Geodetic Survey 1984 and astronomic datum.)

Description of the Particularly Sensitive Sea Area for the Papahānaumokuākea Marine National Monument

To avoid the risk of damage from ship groundings and pollution damage by international shipping activities and the destruction and degradation of this unique, fragile, and pristine coral reef ecosystem, as well as of significant cultural and archaeological resources, mariners should exercise extreme care when navigating in the area bounded by a line connecting the following geographical positions which is designated as a Particularly Sensitive Sea Area:

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 1 | 28°26'.24 N | 175°10'.65 W |
| 2 | 28°16'.07 N | 175°00'.00 W |
| 3 | 26°50'.89 N | 173°30'.79 W |
| 4 | 26°36'.00 N | 171°37'.70 W |
| 5 | 26°35'.49 N | 171°33'.84 W |
| 6 | 26°35'.09 N | 171°30'.84 W |
| 7 | 26°34'.07 N | 171°27'.50 W |
| 8 | 26°33'.35 N | 171°25'.16 W |
| 9 | 26°14'.25 N | 170°23'.04 W |
| 10 | 25°50'.55 N | 167°57'.88 W |
| 11 | 25°48'.99 N | 167°48'.35 W |
| 12 | 25°47'.09 N | 167°36'.72 W |
| 13 | 25°39'.84 N | 167°26'.48 W |
| 14 | 25°35'.10 N | 167°19'.79 W |
| 15 | 25°10'.43 N | 166°45'.00 W |
| 16 | 24°40'.91 N | 166°03'.36 W |
| 17 | 24°35'.64 N | 165°34'.99 W |
| 18 | 24°23'.98 N | 164°32'.24 W |
| 19 | 23°52'.82 N | 161°44'.54 W |
| 20 | 23°52'.10 N | 161°41'.20 W |
| 21 | 23°51'.18 N | 161°37'.92 W |
| 22 | 23°50'.08 N | 161°34'.71 W |
| 23 | 23°48'.79 N | 161°31'.58 W |
| 24 | 23°47'.33 N | 161°28'.55 W |
| 25 | 23°45'.69 N | 161°25'.62 W |
| 26 | 23°43'.88 N | 161°22'.81 W |
| 27 | 23°41'.92 N | 161°20'.13 W |
| 28 | 23°39'.80 N | 161°17'.60 W |
| 29 | 23°37'.54 N | 161°15'.21 W |

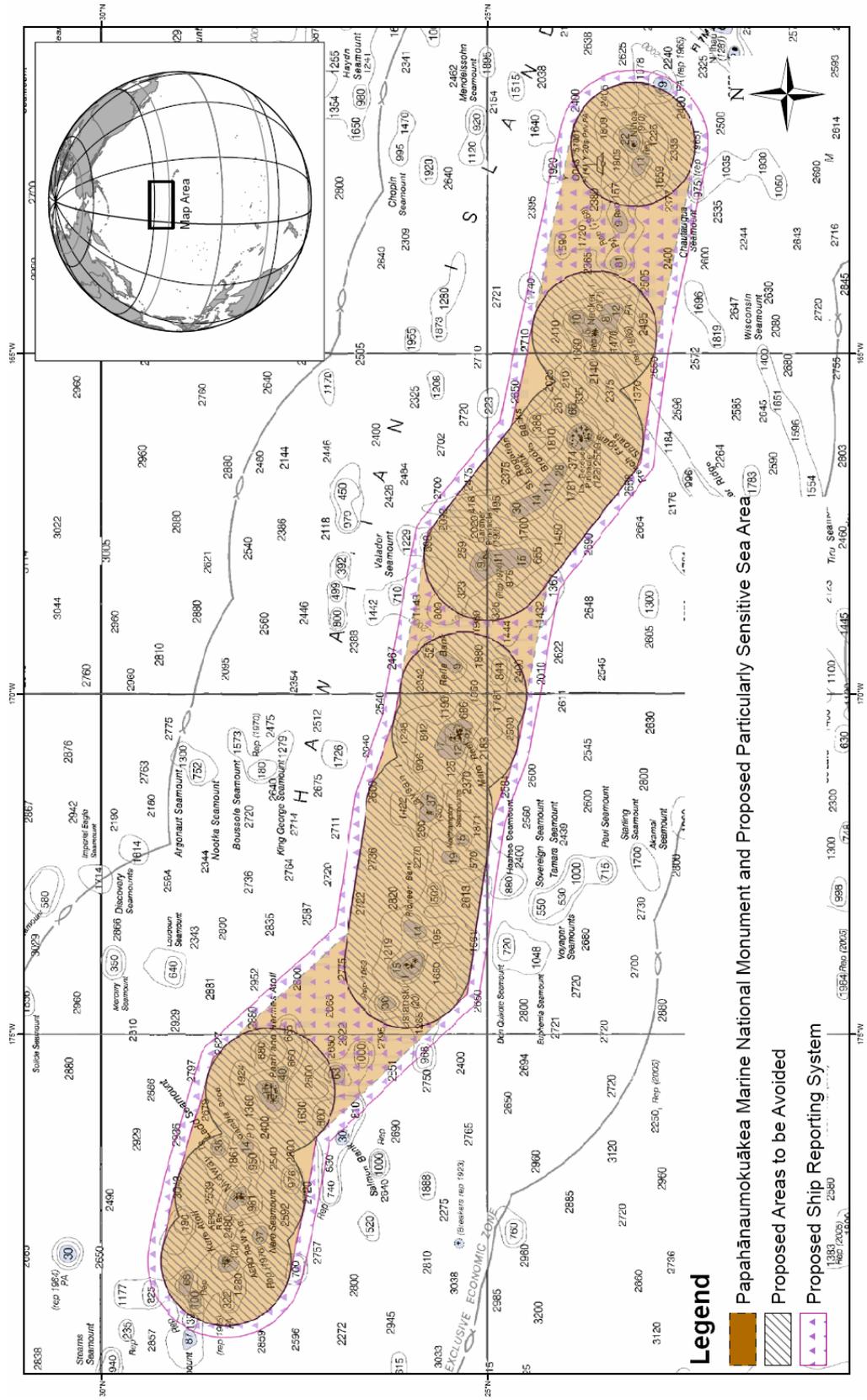
* The text in this annex is taken from the United States submission contained in document MEPC 56/8.

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 30 | 23°35'.14 N | 161°12'.99 W |
| 31 | 23°32'.62 N | 161°10'.93 W |
| 32 | 23°29'.99 N | 161°09'.05 W |
| 33 | 23°27'.25 N | 161°07'.35 W |
| 34 | 23°24'.42 N | 161°05'.85 W |
| 35 | 23°21'.51 N | 161°04'.54 W |
| 36 | 23°18'.52 N | 161°03'.43 W |
| 37 | 23°15'.48 N | 161°02'.53 W |
| 38 | 23°12'.39 N | 161°01'.84 W |
| 39 | 23°09'.27 N | 161°01'.35 W |
| 40 | 23°06'.13 N | 161°01'.09 W |
| 41 | 23°02'.97 N | 161°01'.03 W |
| 42 | 22°59'.82 N | 161°01'.19 W |
| 43 | 22°56'.69 N | 161°01'.57 W |
| 44 | 22°53'.58 N | 161°02'.15 W |
| 45 | 22°50'.51 N | 161°02'.95 W |
| 46 | 22°47'.50 N | 161°03'.95 W |
| 47 | 22°44'.55 N | 161°05'.15 W |
| 48 | 22°41'.67 N | 161°06'.54 W |
| 49 | 22°38'.88 N | 161°08'.13 W |
| 50 | 22°36'.19 N | 161°09'.90 W |
| 51 | 22°33'.61 N | 161°11'.85 W |
| 52 | 22°31'.14 N | 161°13'.97 W |
| 53 | 22°28'.81 N | 161°16'.25 W |
| 54 | 22°26'.61 N | 161°18'.69 W |
| 55 | 22°24'.56 N | 161°21'.26 W |
| 56 | 22°22'.66 N | 161°23'.97 W |
| 57 | 22°20'.92 N | 161°26'.80 W |
| 58 | 22°19'.35 N | 161°29'.74 W |
| 59 | 22°17'.95 N | 161°32'.78 W |
| 60 | 22°16'.73 N | 161°35'.90 W |
| 61 | 22°15'.70 N | 161°39'.10 W |
| 62 | 22°14'.85 N | 161°42'.37 W |
| 63 | 22°14'.20 N | 161°45'.68 W |
| 64 | 22°13'.73 N | 161°49'.03 W |
| 65 | 22°13'.47 N | 161°52'.41 W |
| 66 | 22°13'.40 N | 161°55'.80 W |
| 67 | 22°13'.53 N | 161°59'.18 W |
| 68 | 22°13'.85 N | 162°02'.55 W |
| 69 | 22°14'.31 N | 162°05'.45 W |
| 70 | 22°14'.37 N | 162°05'.89 W |
| 71 | 22°45'.18 N | 164°51'.62 W |
| 72 | 22°50'.26 N | 165°34'.99 W |
| 73 | 22°55'.50 N | 166°19'.63 W |
| 74 | 22°55'.93 N | 166°23'.32 W |
| 75 | 22°57'.41 N | 166°36'.00 W |
| 76 | 23°03'.75 N | 166°45'.00 W |
| 77 | 23°05'.48 N | 166°47'.45 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 78 | 24°12'.69 N | 168°22'.84 W |
| 79 | 24°12'.69 N | 168°22'.84 W |
| 80 | 24°12'.70 N | 168°22'.86 W |
| 81 | 24°35'.77 N | 170°44'.39 W |
| 82 | 24°36'.29 N | 170°47'.58 W |
| 83 | 24°37'.18 N | 170°50'.37 W |
| 84 | 24°37'.76 N | 170°52'.17 W |
| 85 | 24°56'.23 N | 171°50'.19 W |
| 86 | 25°16'.61 N | 174°24'.84 W |
| 87 | 25°49'.84 N | 175°00'.00 W |
| 88 | 27°14'.76 N | 176°29'.87 W |
| 89 | 27°24'.95 N | 177°33'.31 W |
| 90 | 27°35'.87 N | 178°29'.90 W |
| 91 | 27°36'.64 N | 178°33'.93 W |
| 92 | 27°37'.53 N | 178°37'.32 W |
| 93 | 27°38'.60 N | 178°40'.65 W |
| 94 | 27°39'.85 N | 178°43'.90 W |
| 95 | 27°41'.28 N | 178°47'.05 W |
| 96 | 27°42'.89 N | 178°50'.10 W |
| 97 | 27°44'.66 N | 178°53'.03 W |
| 98 | 27°46'.59 N | 178°55'.83 W |
| 99 | 27°48'.67 N | 178°58'.49 W |
| 100 | 27°50'.89 N | 179°01'.00 W |
| 101 | 27°53'.25 N | 179°03'.35 W |
| 102 | 27°55'.74 N | 179°05'.54 W |
| 103 | 27°58'.34 N | 179°07'.54 W |
| 104 | 28°01'.05 N | 179°09'.35 W |
| 105 | 28°03'.85 N | 179°10'.98 W |
| 106 | 28°06'.74 N | 179°12'.40 W |
| 107 | 28°09'.71 N | 179°13'.61 W |
| 108 | 28°12'.73 N | 179°14'.62 W |
| 109 | 28°15'.80 N | 179°15'.41 W |
| 110 | 28°18'.91 N | 179°15'.98 W |
| 111 | 28°22'.05 N | 179°16'.33 W |
| 112 | 28°24'.72 N | 179°16'.44 W |
| 113 | 28°25'.20 N | 179°16'.45 W |
| 114 | 28°25'.82 N | 179°16'.44 W |
| 115 | 28°28'.35 N | 179°16'.36 W |
| 116 | 28°31'.49 N | 179°16'.03 W |
| 117 | 28°34'.60 N | 179°15'.49 W |
| 118 | 28°37'.68 N | 179°14'.72 W |
| 119 | 28°40'.71 N | 179°13'.74 W |
| 120 | 28°43'.68 N | 179°12'.54 W |
| 121 | 28°46'.58 N | 179°11'.13 W |
| 122 | 28°49'.39 N | 179°09'.52 W |
| 123 | 28°52'.11 N | 179°07'.70 W |
| 124 | 28°54'.72 N | 179°05'.70 W |
| 125 | 28°57'.21 N | 179°03'.51 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 126 | 28°59'.58 N | 179°01'.15 W |
| 127 | 29°01'.81 N | 178°58'.62 W |
| 128 | 29°03'.90 N | 178°55'.93 W |
| 129 | 29°05'.83 N | 178°53'.10 W |
| 130 | 29°07'.60 N | 178°50'.13 W |
| 131 | 29°09'.21 N | 178°47'.04 W |
| 132 | 29°10'.64 N | 178°43'.84 W |
| 133 | 29°11'.89 N | 178°40'.54 W |
| 134 | 29°12'.95 N | 178°37'.16 W |
| 135 | 29°13'.82 N | 178°33'.71 W |
| 136 | 29°14'.50 N | 178°30'.21 W |
| 137 | 29°14'.99 N | 178°26'.66 W |
| 138 | 29°15'.28 N | 178°23'.08 W |
| 139 | 29°15'.36 N | 178°19'.49 W |
| 140 | 29°15'.25 N | 178°15'.90 W |
| 141 | 29°14'.94 N | 178°12'.32 W |
| 142 | 29°14'.43 N | 178°08'.78 W |
| 143 | 29°03'.47 N | 177°12'.07 W |
| 144 | 29°02'.55 N | 177°07'.29 W |
| 145 | 28°38'.96 N | 175°35'.47 W |
| 146 | 28°38'.67 N | 175°34'.35 W |
| 147 | 28°34'.91 N | 175°19'.74 W |
| 148 | 28°26'.24 N | 175°10'.65 W |

CHARTLET



ANNEX 2

ECOLOGICAL, SOCIO-ECONOMIC, AND SCIENTIFIC ATTRIBUTES OF THE PAPAĀNAUMOKUĀKEA MARINE NATIONAL MONUMENT PSSA*

1 *Ecological Criteria*

1.1 Uniqueness or rarity

1.1.1 The Papahānaumokuākea Marine National Monument (North-western Hawaiian Islands or NWHI) supports a unique, dynamic coral reef ecosystem, which, thanks to its relative isolation, is among the healthiest in the world (Citizen's Guide 2006). It is one of the last remaining large-scale wilderness coral reef ecosystems on the planet and the largest coral reef ecosystem in the marginal tropical seas (Cousteau 2003). Approximately one-quarter of the species found in the NWHI are endemic to the Hawaiian Island chain, which is one of the highest rates of marine endemism in the world (Friedlander *et al.* 2005; Citizen's Guide 2006). The proportion of scientifically non-described coral reef species (e.g., sponges, corals, algae, and other invertebrates) in this area is one of the highest in the world (Cousteau 2003). The NWHI also contain important breeding and nesting grounds for a number of species, many of which are at risk, including the critically endangered Hawaiian monk seal, the threatened green sea turtle, and 19 species of seabirds (Henderson 2001; NOAA 2004b; Citizen's Guide 2006).

1.1.2 The uniqueness of this area was expressed in 2003 by ocean explorer Jean-Michel Cousteau in his **Voyage to Kure** expedition log: "These islands are a celebration of the uniqueness brought on by isolation. Along this ribbon of life, we found teeming populations of spinner dolphins and large apex predators such as reef sharks, jacks, and groupers. We encountered many of the Hawaiian endemic species of reef fish, including the rare masked angelfish and Hawaiian grouper; all perfect reminders of an intact coral reef ecosystem" (Cousteau 2003).

1.2 Critical Habitat

1.2.1 Parts of the proposed area provide critical habitat for a variety of endangered or threatened species that are protected under various United States domestic laws. These species include the critically endangered Hawaiian monk seal; the endangered sperm whale; the endangered hawksbill, leatherback, and green sea turtles; the endangered short-tailed albatross; six endangered plant species; and four endangered land birds: the Nihoa finch, Nihoa millerbird, Laysan finch, and Laysan Duck, the world's rarest duck. Of these species, seven are listed in Appendix I of the Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES) and nine are listed on the World Conservation Union (IUCN) Red List of Threatened Species (including three with "critically endangered" status).

1.3 Dependency

1.3.1 The ecological processes of the NWHI ecosystem are dependent on the health of its vast, diverse coral reef tracts. Often called the "rainforests" of the sea, coral reefs are vital to

* The text in this annex is taken from the United States submission contained in document MEPC 56/8.

maintaining the biological diversity of the oceans (Citizen's Guide 2006). The pristine coral reefs of the NWHI are the foundation of a symbiotic community composed of countless millions of plants and animals dependent upon one another for survival (Citizen's Guide 2006). These reefs perform important ecosystem services including filtering water, protecting islands from sediment deposition and storms, and providing nourishment for marine organisms.

1.3.2 Thousands of species depend on the coral reefs of the NWHI. Hawaiian monk seals, a majority of which make their home in the NWHI, are the only surviving marine mammal that is dependent on coral reef ecosystems (Citizen's Guide 2006; Cousteau 2003). The high incidence of apex predators such as sharks, jacks, and groupers also depends on the high productivity of this ecosystem. In turn, the prevalence of apex predators has a significant effect on the structuring of the fish assemblage of the area, impacting the diversity and relative abundance of species lower on the food chain. Thus, adverse impacts on these apex predators could cause populations of smaller fish to quickly become unbalanced, changing the trophic structure and order of dominance within the ecosystem (Maragos and Gulko 2002; Friedlander and DeMartini 2002; Suthers 2004).

1.3.3 Approximately 14 million seabirds, with 5.5 million nesting annually in the NWHI, rely on the coral reef ecosystem for food and other habitat needs (Naughton and Flint 2004). In turn, the ecosystem is dependent on these birds' role in the high relative productivity and diversity of the NWHI. Nutrient-rich defecation (guano) deposited by the birds on the islands and nearshore waters – which subsequently is dissolved and provides significant levels of nitrogen to the ecosystem – is thought to stimulate the prolific growths of algae found around the islands. When high levels of algal growth are combined with significant wave action, such as at La Perouse Pinnacle at French Frigate Shoals, this creates favourable conditions for the growth of other species (Maragos and Gulko 2002).

1.3.4 The ecological processes of the NWHI depend on more than just its coral reefs. Beyond the banks and steep slopes, between 1,640 and 14,000 feet, the ocean floor levels out at sea bottom which contains distinct, rich habitat (Press and Siever 1986; Benoit-Bird *et al.* 2001). This habitat is linked to the coral reef ecosystem by a dense assemblage of small fish, shrimp, and squid that migrate from the ocean depths to near the surface in regular patterns and serve as an important food resource for many animals, including spinner dolphins, bottom fish, tunas, and billfish (Benoit-Bird *et al.* 2001). The importance of offshore and deepwater habitat is also evidenced by the movements and diets of Hawaiian monk seals. Although part of the seals' diet comes from shallow-water coral reef fish, the seals are known to travel over one hundred miles between islands and dive to depths of greater than 900 feet when foraging for deepwater prey, mainly bottom fish, which make up the primary part of their diet (Henderson 2001; TenBruggencate 2006). Each of these habitats is essential to the other, and the loss of one affects the operation of all the others throughout the system. Accordingly, an impact on one part of the system can threaten the entire ecosystem as well as the diversity of species that depend on the area.

1.4 Diversity

1.4.1 The NWHI supports more than 7,000 species of fishes, mammals, plants, coral, and other invertebrates (Bush 2006). Discoveries of species in the NWHI are continuing to be made, as demonstrated by a 2006 research expedition in French Frigate Shoals which yielded over 100 species not previously known to exist in the area and many of which may be previously unknown to science (Associated Press 2006). The rich diversity of the NWHI is in part due to

the relative isolation of the area and minimal impact from humans, which is underscored by the starkly contrasting lower levels of diversity found in the marine areas of the main Hawaiian Islands (DeMartini and Friedlander 2004; Friedlander *et al.* 2005a; NOAA 2004g). Coral reefs are among the most highly diverse of all ecosystems on the planet; the coral reef ecosystem of the NWHI exemplifies this point.

1.4.2 Further contributing to diversity, the ecosystem of the NWHI contains a wide variety of habitats, extending from the shoreline to depths of approximately 14,000 feet. For example, within the pristine coral reefs of the NWHI, the percentage of coral cover varies widely, creating a series of interconnected but distinct types of coral reef habitats, or zones (e.g., shelf, fore reef, reef crest, back reef, and lagoon). Wave exposure is the primary factor causing zonation in the NWHI, but gradients in sediment, salinity, and temperature are also important (Friedlander *et al.* 2005a). As a result of this zonation, the coral reefs of the NWHI contain a variety of environmental niches and resources that support a diverse array of species.

1.5 Productivity

1.5.1 Coral reef ecosystems have the highest gross primary productivity of all ocean areas, and the proposed area contains several thousand square miles of coral reefs, indicating a highly productive ecosystem. Also indicative of the area's productivity is the high incidence of apex predators such as sharks, jacks, and groupers, which make up more than half of the total fish biomass in the NWHI. A very high replacement rate of small and mid-size fish is necessary to support an apex predator-dominated ecosystem.

1.5.2 The productivity of the proposed area can readily be seen by comparing it to the productivity in the main Hawaiian Islands. A comparison of both biomass and trophic structure between reef fish communities in the NWHI and the main Hawaiian Islands showed that across similar habitats, biomass was 260 per cent higher in the NWHI (Friedlander and DeMartini 2002). Productivity is especially high in the area's inshore waters, shallow lagoons, and coral reefs. For example, the lagoon in French Frigate Shoals produces nearly ten times the amount of phytoplankton as produced in the same volume of water in the open seas. The area also has extensive submerged banks, which have high levels of primary productivity due to the existence of expansive algal meadows. Furthermore, while apex predators represent only three per cent of the fish biomass in the main Hawaiian Islands, they make up 54 per cent of the biomass in the NWHI (Suthers 2004).

1.6 Spawning or Breeding Grounds

1.6.1 The NWHI provide critical breeding and nesting grounds for a wide variety of species. The area contains the breeding grounds for almost the entire remaining population of the Hawaiian monk seal, and serves as the seals' primary haul-out, pupping, and weaning habitat. The area also provides the breeding grounds and primary nesting sites for approximately 90 per cent of the threatened Hawaiian Islands green sea turtle population. Millions of Central Pacific seabirds also congregate on these islands to breed, including all but three of Hawaii's 22 species of seabirds, such as the grey-backed tern, short-tailed albatross, and the red-tailed tropicbird. More than 99 per cent of the world's Laysan albatrosses and 98 per cent of the world's black-footed albatrosses return to the NWHI each year to reproduce. For some bird species, the NWHI provide their only breeding site.

1.7 Naturalness

1.7.1 Because of their geographical isolation and long history of protection, the reefs of the NWHI are among the healthiest and most undisturbed coral reefs on the planet. Their naturalness is perhaps best evidenced by the relatively high diversity and productivity in the NWHI as compared with the reefs of the main Hawaiian Islands, which have experienced much greater impacts from humans, and by the fact that the NWHI is one of the worlds last remaining large-scale apex predator-dominated reef ecosystems.

1.8 Integrity

1.8.1 The area of the NWHI is a prime example of a self-sustaining ecological entity. The volcanic islands, coral atolls, shallow reefs, banks, slopes, shoals, seamounts, deep reefs, and open water form the basis for this interlocking and complex ecosystem. Its integrated nature is evidenced by the vast number of interdependent processes that connect the varied NWHI habitats, as discussed in particular in section 3.4 (Dependency) of this proposal. Examples of this include: (1) the critical link between the shallow coral reef and the deep ocean floor habitats manifested by species that migrate regularly from great depths and are consumed by many shallower water animals; (2) the foraging, feeding, breeding, and pupping areas of the Hawaiian monk seal range from the offshore, deepwater habitats to the land areas; and (3) the deposits of bird guano stimulate algal growth which, when combined with wave action, contributes to the growth of other species and the high productivity of the ecosystem.

1.8.2 While the NWHI are a part of the greater chain of Hawaiian Islands, there is clear evidence that the NWHI function as a distinct, biological unit. The NWHI ecosystem is highly productive, diverse, and apex predator-dominated while the ecosystem around the main Hawaiian Islands has substantially lower productivity, less species diversity, and is not apex predator-dominated. These differences demonstrate that the NWHI function as an integral unit.

1.9 Fragility

1.9.1 The area contains several thousand square miles of coral reefs made up of at least 57 species of hard coral and 12 species of soft coral. Coral communities are fragile ecosystems. They require a delicate balance across a range of environmental conditions in order to be healthy and grow. The health of a coral ecosystem may be threatened by changes to even one of those environmental conditions. Corals derive a substantial portion of their nutrition from symbiotic algae (called zooxanthellae) within their tissues. Because algae require light for photosynthesis, clear and clean water conditions are necessary for growth and well-being. The introduction of pollutants can be toxic to the coral.

1.9.2 The physical structure of the reef is provided by calcium carbonate, which forms the rock framework or reef “skeleton”. This calcium carbonate is deposited at a rate of about one-centimetre per year by the living coral animal (polyp). These polyps exist in a thin layer at the surface of the reef rock. The coral reef system of the NWHI has taken thousands of years to build and, if damaged, regeneration of the reef may never occur. If optimal conditions for regeneration exist, it would still take hundreds, and perhaps thousands of years, for a damaged area of the reef to return to its previous condition.

1.9.3 In the NWHI, transiting ships are a primary anthropogenic threat to this fragile ecosystem because of ship groundings and pollution from operational and accidental discharges. Secondary and cumulative damage may occur when dislocated coral fragments caused by groundings are tossed against healthy coral by wave action, currents, and storms.

1.9.4 The isolation of the NWHI affords both protection from and vulnerability to invasive species, which can be transferred by ships. The islands' ecosystems have evolved without the influence of outside forces, demonstrated by the high level of native and endemic species. To date, 11 non-native species have been identified in the waters of the NWHI. Non-native species can displace native species and seriously disrupt and imbalance the natural ecosystem.

1.10 Bio-geographic importance

1.10.1 The NWHI represent one of the last remaining examples of an intact apex predator-dominated coral reef ecosystem with large top predator fish such as sharks in abundance. Because it is isolated, many aspects of the area represent what a completely pristine and undisturbed bio-geographic system would look like at this latitude if one still existed.

1.10.2 The area is geologically unique. The islands were created from a single plume of magma rising from a hot spot in the earth's mantle. Built up over millions of years of eruption, high volcanic islands were formed, then carried north-westerly by the movement of the Pacific Plate beneath. Twenty-eight million years ago the last emergent feature of the chain, Kure, was located where the present Big Island of Hawaii is now located.

2 Social, cultural and economic criteria

2.1 Human Dependency

2.1.1 The NWHI are of particular importance because of their significance in Native Hawaiian history and culture. The NWHI have long been considered a sacred place in Native Hawaiian traditions, and two of the islands in particular contain important archaeological sites (Kikiloi 2006). Early Polynesian voyagers, in their trans-Pacific voyages aboard large double-hulled sailing canoes, were the first humans to arrive in the NWHI, as early as 1000 A.D. Early Hawaiians lived on Nihoa for an estimated 700 years, but this occupation mysteriously ceased before Captain Cook's first landing in Hawaii in 1778 (Citizen's Guide 2006). Their early presence is evidenced by numerous sites on Nihoa and Mokumanamana (Necker), which are listed on both United States and State of Hawaii Registers of Historic Places for their cultural and historical significance. Together, the two islands have 140 recorded cultural sites, including ceremonial, residential, and agricultural sites, some which resemble historically important Polynesian sites in Tahiti and the Marqueses (Emory 1928; Cleghorn 1988; Liller 2000; Kawaharada 2001; Kikiloi 2006). These sites are being studied to increase the understanding of the connection between Native Hawaiian culture and the early Polynesians.

2.1.2 Oral traditions also confirm the relationship of the islands to ancestral Native Hawaiians, and recent ethnological studies have highlighted the continuity of traditional practices in the NWHI. Native Hawaiian cultural practitioners continue to voyage to the NWHI to honour their ancestors and perpetuate these practices. In 1997, Hui Mālama i Nā Kūpuna o Hawaii's Nei, a group dedicated to the repatriation of ancestral remains, returned sets of iwi (bones) to Nihoa and Mokumanamana (Necker). In 2003, the voyaging canoe *Hōkūle`a* travelled to Nihoa so that a group could conduct traditional ceremonies. In 2004, the *Hōkūle`a* sailed to Kure Atoll, and

in 2005 it took a group to Mokumanamana (Necker) for ceremonies on the summer solstice (Citizen's Guide 2006). Finally, underscoring the importance of the NWHI marine ecosystem in Native Hawaiian culture, oral traditions identify the coral polyp as the first living creature to emerge on Earth and the foundation and the building block of all other life in the sea (Friedlander *et al.* 2005b). It follows that ensuring a healthy, intact ecosystem in the NWHI plays an important role in perpetuating Native Hawaiian cultural traditions.

2.2 Cultural heritage

2.2.1 The NWHI are rich in underwater cultural heritage. The numerous wrecks found in the area are time capsules which capture specific elements of our seagoing past. Documents indicate that over 120 vessels and aircraft have been lost in the waters of the proposed area. These remains are representative of distinct phases of Pacific history and include Japanese junks, Hawaiian sampans, 19th century whalers, United States Navy side wheel steamers, French sailing ships, and fighter aircraft lost during the World War II Battle of Midway. Only a handful of these sites have been located and assessed so far, but these surveys reveal resources unique to the North-western Hawaiian Islands. The wrecks of the whaling ships **Pearl** and **Hermes**, both of which ran aground in 1822, are the only archaeological remains of the South Seas whaling industry, and the oldest shipwrecks found thus far in Hawaii. The scattered remains of the **USS Saginaw**, lost in 1870, capture the United States Civil War-era technology of the "old steam navy." The wreck site of the **Dunnottar Castle**, an iron hulled sailing ship lost in 1886, offers a rare glimpse of the days of the Tall Ships. These and many other sites are rare, representative of broad themes of maritime history, and a testimony to the uniqueness of Pacific seafaring history. Unwarranted damage or removal of submerged archaeological sites is prohibited by state and federal preservation laws, and United States Monument management agencies seek to protect these heritage resources as windows into the past.

3 Scientific and educational criteria

3.1 Research

3.1.1 This area is of high scientific interest and offers unparalleled opportunity for research. Given the fact that the NWHI are remote and rich with marine and terrestrial life, they provide one of the few areas in the world where researchers can conduct large-scale comparisons between human-impacted marine ecosystems and un-impacted marine ecosystems (Citizen's Guide; Friedlander and DeMartini 2002). Such comparisons may serve as a living model to guide restoration efforts elsewhere.

3.1.2 As further evidence of the importance of this area for research, in October 2006 an international team of biologists made discoveries in French Frigate Shoals of several new species of coral, sea stars, snails, and clams. The researchers also discovered over one hundred species never before seen in French Frigate Shoals and many of which may have been previously unknown to science (Associated Press 2006). These scientific discoveries suggest that much research remains to be done to fully understand and appreciate this complex ecosystem.

3.1.3 Research and monitoring conducted by United States federal and state agencies, academic institutions, and other organizations over the last 30 years have contributed substantially to the understanding of natural and anthropogenic factors influencing the NWHI and the interconnectedness of the physical and biological processes along the entire Hawaiian Island chain. Ongoing research and monitoring of the marine ecosystems in the NWHI will continue to

provide significant insights that will benefit management not only for the NWHI but in the entire Hawaiian Island chain and marine ecosystems around the world.

3.2 Baseline for monitoring studies

3.2.1 The NWHI are one of the few marine regions on earth where monitoring and research activities can be conducted in the virtual absence of local human habitation and activities. It thus provides ideal baseline conditions with regard to biota and environmental characteristics because it has not had substantial perturbations and is thus in a natural or near-natural condition. Remote, uninhabited, and relatively pristine in comparison to the main Hawaiian Islands and other marine ecosystems around the world, the NWHI serve as one of the few modern sentinels for monitoring and deciphering short-term and long-term responses to local, regional, and global environmental and anthropogenic stressors.

3.3 Education

3.3.1 The NWHI provide a model and rare benchmark of a healthy, intact integrated ecosystem preserved in its natural or near-natural state that may inspire Hawaiian residents as well as others to take part in ocean restoration efforts in their communities. This guiding premise led to “Navigating Change”, a multi-year, interagency project which focuses on raising awareness and motivating people to change their attitudes and behaviours to better care for Hawaii’s land and ocean resources. A five-part video and educational curriculum featuring the traditional Polynesian voyaging canoe *Hōkūle`a* during its 2004 expedition to the NWHI was completed in partnership with several agencies and organizations. Teacher workshops on the “Navigating Change” program have been held since 2003 across Hawaii and an outreach co-ordinator leads an associated curriculum in schools state-wide. As people learn more about the NWHI, many will want to go there and experience it. Therefore, the educational message that is being sent to preserve the fragile balance of the NWHI is that people must admire it from afar. Educational activities, therefore, will focus on bringing the place to the people, not the people to the place.

ANNEX 3

VULNERABILITY TO DAMAGE BY INTERNATIONAL SHIPPING ACTIVITIES*

1 *Vessel Traffic Characteristics*

1.1 Operational factors

1.1.1 There are limited maritime activities conducted in the waters of the NWHI, undoubtedly due to the islands' remote location and harsh environmental conditions for human activities. Pursuant to the Presidential Proclamation of June 15, 2006, most domestic activities within NWHI waters are prohibited or strictly regulated. Public access to the land portions of the NWHI has for many years been allowed by permit only, except for Midway Atoll, and permits are issued only for research and Native Hawaiian cultural activities. The maritime activities in this area are primarily research and management, fishing, cultural practices, and recreation. Research activities include assessment, long-term monitoring of resources, impacts and threats from human activities, and protection and conservation of NWHI resources. An estimated four million dollars are spent annually on research and management of the area. There are eight remaining commercial fishing permits in the NWHI, although the Presidential Proclamation and codifying regulations require closure of the fishery five years from the date of the Proclamation. Native Hawaiian cultural practitioners voyage to the NWHI to honour their ancestors and perpetuate traditional practices. Current tourism and recreational activities are limited to Midway Atoll and, under the Proclamation, a permit is now required. The extent to which ocean tourism and recreation occurs in the NWHI is unknown, but it appears to be extremely low. These activities may include wildlife watching, diving and snorkelling, charter fishing, and tour boats. Additionally, a management plan for tourism to the historic World War II location and military heritage sites on Midway Atoll is currently being developed and up to three cruise ships may visit the island each year.

1.2 Vessel Types

1.2.1 Container ships, bulk carriers, tankers, freighters, and fishing vessels regularly transit the waters surrounding the NWHI. With the exception of a few small boats at Midway Atoll and Tern Island (French Frigate Shoals), no vessels home port in the NWHI. Research and management vessels, eight fishing vessels, vessels used by Native Hawaiians, some recreational vessels, and a few cruise ships, conduct strictly regulated activities in NWHI waters (Franklin 2006; Mohri 2006).

1.3 Traffic Characteristics

1.3.1 Although due to its remoteness, the exact route of vessels through this area is unknown, it appears that most traffic passes to the north of the island chain, following the great circle routes to and from ports on the west coast of North America and East Asia. Other trans-Pacific ships travelling from ports in Hawaii transit at least 100 miles south of the NWHI. Occasionally, vessels transiting from the south pass within the boundaries of the proposed PSSA (Franklin 2006; Tosatto 2005; Horizon Lines 2006; Devany 2006).

* The text in this annex is taken from the United States submission contained in document MEPC 56/8.

1.3.2 A preliminary analysis of vessel traffic patterns within the NWHI was conducted based on data collected by the World Meteorological Organization's Voluntary Observing Ships scheme. This scheme collects geo-referenced data from select non-research vessels that make frequent and regular crossings of all major ocean basins. While the scheme does not capture the total traffic in the area, during a 21-month study period in 2004 and 2005, approximately 132 vessels reported from within the area of the proposed PSSA: 104 of these vessels were freighters, 8 were tankers, 4 were research vessels, 2 were passenger vessels, 2 were vessels used for educational purposes, 1 was a recreational vessel, 1 was a towing vessel with a 666-foot vessel in tow, and 10 were unidentified vessels. The 132 vessels were flagged in 23 different countries (Franklin 2006).

1.4 Substances Carried

1.4.1 While precise data is not available for the types of harmful substances carried on board the vessels that transit the waters of the NWHI, it is possible to identify examples of such substances from incidents that have occurred in the area. Three vessels, the **Paradise Queen II** (1998), the **Swordman I** (2000), and the **Casitas** (2005), all grounded in the NWHI and had significant quantities of bunker fuel or were carrying other types of fuel onboard (Cascadia Times 2006; Shallenberger 2004). These substances are harmful to the marine ecosystem and to the terrestrial environment when washed ashore. In another incident, a container of the pesticide, carbofuran, washed ashore at Laysan Island (Friedlander *et al.* 2005).

1.4.2 Three other ship accidents occurred involving cargoes that may not be classified as "hazardous substances," but that would be harmful if released into this area of the sea. The first incident involved the **Anangel Liberty** in 1980 where 2,200 tons of kaolin clay was dumped overboard to lighten the ship enough to pull it off one of the reefs on French Frigate Shoals. Fortunately, the currents on that day carried most of the clay out to sea rather than onto the reef. Had it not, the clay could have smothered coral thus adversely affecting the ecosystem. The other two incidents involved the grounding on Laysan of fishing vessels that had evidence of rats on board. Again, fortunately, the rats did not take up residence on the nearby island; however, if they had, it would have been extremely harmful to the ecology of the area because such introduced species can become "ecosystem busters" and cripple the ecosystem within that area (Shallenberger 2004).

2 Natural Factors

2.1 Hydrographical

2.1.1 The hydrography of the NWHI underscores the need for mariners to navigate with extreme caution. The chain of small islands, atolls, banks, seamounts, pinnacles, shoals, and other emergent features are remnants of volcanic islands which are eroding and subsiding beneath the ocean surface. While only the peaks of the original islands remain above the water's surface, coral growth on submerged slopes has matched the rate of subsidence (Evans *et al.* 2004). Due to these features, navigation in this area is dangerous and must be done with extreme caution. Water depths in this area range from the water's surface to slightly submerged banks, reefs, and other emergent features to the ocean floor at more than 14,000 feet.

2.1.2 The area of the proposed PSSA is currently covered by mostly small scale charts, with the most recent surveys taking place since 2000 near known islands, reefs and atolls. Although modern hydrographic surveys by the University of Hawaii and satellite imagery of the area have

allowed NOAA's Office of Coast Survey to correct the position of several of these features, many of the submerged banks and isolated features have yet to be updated or discovered.

2.1.3 In 2003, a mapping expedition was undertaken by NOAA and the University of Hawaii Undersea Research Laboratory. The primary objective of this project was to provide for more complete and accurate charts and survey data to support the management of the NWHI Coral Reef Ecosystem Reserve and protection of its resources. This expedition included hydrographic experts to ensure that appropriate International Hydrographic Organization quality standards were met. The hydrographic data will be applied to all affected charts by the end of 2007. Notwithstanding, large areas of the NWHI remain to be surveyed and nautical charts updated.

2.2 Meteorological

2.2.1 The northeast trade winds prevail throughout the year, but westerly blows can be expected during the winter. The average velocity of the winds is 12 knots, with monthly averages of 16 knots in December and 9.5 knots in August. Gales have been experienced in July and September. Occasional heavy showers of short duration also occur, cutting visibility to about 2 miles (Coast Pilot 7, 38th ed., 2006).

2.2.2 Tropical storms and hurricanes are a potential, but infrequent, threat to the shallow coral reef community structure of the NWHI. They can generate extreme wave energy events that can damage the coral and are the primary natural force in altering and shaping coral reef community structures (Dollar 1982; Dollar and Grigg 2004). Since 1979, two hurricanes (category 2) have passed near the NWHI. The most recent significant tropical storm was Hurricane Nele which passed near Gardner Pinnacles in 1985 (Friedlander *et al.* 2005).

2.2.3 Pacific Decadal Oscillation (PDO) events and the El Nino/La Nina phenomenon (ENSO) are two other meteorological factors that occur in the area of the NWHI. PDO events have been described as long-lived El Nino-like patterns of Pacific climate variability. They appear to persist for 20 to 30 years, compared to the 6 to 18 months for an El Niño event. The effects of the PDO are strongest in the North Pacific, while secondary signatures exist in the tropics. PDO sea level pressure anomalies vary with low pressures over the North Pacific and high pressure over the subtropical Pacific. These pressure patterns cause enhanced counter-clockwise wind stress over the North Pacific. With regard to the ENSO, while scientists do not fully understand how one is triggered, the initial detection occurs by a rise in atmospheric pressure in the western Pacific and a drop in pressure in the eastern Pacific (Garrison 1999). This causes trade winds to shift direction, which subsequently causes warm water in the western Pacific to flow across the Pacific basin. This mass of warm water has a number of effects on climate and ocean conditions. For example, it can cause trade wind speeds to drop, which can cause an increase in sea surface temperature (Hoeke *et al.* 2004). Light winds are likely the cause of recent coral bleaching in the NWHI. Increased water temperatures stress the coral, which causes it to expel the symbiotic zooxanthellae. If water temperature does not decrease and zooxanthellae do not return to the coral tissue, the coral will die.

2.3 Oceanographic

2.3.1 The NWHI are influenced by a wide range of oceanographic conditions that vary on spatial and temporal scales. Ocean currents, waves, temperatures, nutrients, and other oceanographic parameters and conditions influence ecosystem composition, structure, and function in the NWHI. Ocean currents play an important role in the dispersal and recruitment of

marine life in the NWHI. Surface currents are highly variable in both speed and direction (Firing *et al.* 2004), with long-term average surface flow from east to west in response to the prevailing northeast trade wind conditions. The highly variable nature of the surface currents is due in large part to eddies created by local island effects on large-scale circulation. Marine debris accumulation in shallow water areas of the NWHI also is influenced by large and small-scale ocean circulation patterns. These eddies might also result in pollution from vessels accumulating in the coral thus damaging resources.

2.3.2 Ocean waves also play an important role in the NWHI. The distribution of corals and other shallow water organisms is influenced by the exposure to waves. The size and strength of ocean wave events have annual, inter-annual, and decadal time scales. Annual extra-tropical storms (storms that originate outside the tropical latitudes) create high energy large wave events from five to over ten meters which approach largely from the northwest during the winter. During this time, the average wave power increases substantially and extreme wave events of over ten meters pound the shallow water coral communities, thus posing a hazard to the coral reef communities and to navigation. Decadal variability in wave power is possibly related to PDO events (Manutau *et al.* 1997). The number of extreme wave events has been recorded during the periods from 1985 to 1989 and from 1998 to 2002, and anomalously low numbers of extreme wave events occurred during the early 1980s and during the period from 1990 to 1996 (Friedlander *et al.* 2005).

2.4 Other helpful information

2.4.1 There is substantial evidence that international shipping activities are causing or may cause damage to the recognized attributes of the proposed PSSA. The hazards to navigation in the NWHI are demonstrated by the large number of shipwrecks throughout the NWHI chain. Over 60 shipwrecks have occurred in the area and some of these wrecks serve as the origin of a number of the islands' names.¹ While some of these wrecks are truly historic and therefore serve as time capsules of seafaring history, there have been a number of significant maritime casualties in more recent years. In 1998, the 80-foot **Paradise Queen II** ran aground on Kure Atoll. It spilled approximately 4,000 gallons of diesel fuel and other petroleum hydrocarbons. The remaining 7,000 gallons on board the vessel were recovered during salvage operations. The 85-foot **Swordman I** ran aground on Pearl and Hermes Atoll in 2000. It was carrying over 10,000 gallons of diesel fuel and hydraulic oil and approximately \$1.5 million was spent for response and removal of the vessel. In 2005, the 145-foot **Casitas** also ran aground on Pearl and Hermes Atoll, carrying over 33,000 gallons of diesel fuel on board. The vast majority of diesel fuel was salvaged and the vessel was removed from the Atoll and scuttled in an estimated \$5 million clean up and removal operation (Cascadia Times 2006; Shallenberger 2004; Biennial Coastal Zone Conference 2003).

2.4.2 The grounding of the **Anangel Liberty** on French Frigate Shoals in 1980 plowed a channel 2-3 metres deep, 100 metres long, and 30 meters wide in the coral reef. Coral communities were damaged within 50 meters on both sides of the channel ploughed by the freighter as a result of cargo (kaolin clay) that was dumped. In 1977, the burning and sinking of the **Hawaiian Patriot** to the south of French Frigate Shoals resulted in more than five million gallons of fuel oil entering the ocean (United States Fish & Wildlife Serv. 2005; United States Coral Reef Task Force 1999). Also in 1977, **Irene's Challenge** spilled

¹ This figure does not include aircraft or vessels that were sunk in the Battle of Midway.

approximately 10.4 million gallons of crude oil approximately 50 miles to the north of Lisianski Island. MEPC 56/INF.2, annex 1, provides a table summarizing select incidents that have occurred between 1970 and 2006 (United States Coral Reef Task Force 1999; NOAA 2006).

2.4.3 In addition to the damage that may be caused to the NWHI by spills or releases of ships' cargos or bunker fuel, damage may be caused by the grounding of ships on fragile coral and other sensitive habitats in the area. In the case of vessel grounding, destruction in the area of contact may be widespread and result in the scouring and destruction of coral by dislodgement and pulverization, as well as the crushing, fracturing, and removal of reef structure. Impacts may also include the scarring and abrading of nearby resources as wave action, currents, and wind move rubble produced at the initial site of the grounding. Additionally, there may be increased sedimentation with the fracturing and erosion of the reef structure, which can smother coral and other sensitive habitats (Coral Reef Restoration Handbook 2006). Damage may also be caused by subsequent vessel removal efforts which can further crush and bury sensitive resources. A vessel that has grounded and then is abandoned can continue to damage resources as debris becomes dislodged from the vessel and from its movement at the grounding location by wind and wave action.

2.4.4 Fortunately, although damage to coral and other resources has occurred from the ships that have grounded or sunk in the NWHI, recovery and removal efforts as well as favourable weather patterns and the currents occurring at the time of these maritime casualties have so far spared the fragile NWHI ecosystem from being seriously adversely impacted (Shallenberger 2004). Without taking the necessary action to increase maritime safety, protect the fragile marine environment, and facilitate the ability to respond to developing maritime emergencies, it is reasonably foreseeable that ships will continue to run aground in the NWHI and cause physical damage to the fragile coral reef ecosystem, as well as pose a threat of severe damage to this pristine area from the release of cargo and bunker fuel. Given the remoteness of the NWHI, the low level of development on the islands, and the minimum amount of domestic maritime activity that takes place within the surrounding waters, vessels that transit the area are one of the most persistent and significant anthropogenic threats to the recognized attributes of the area.

2.4.5 Another element that increases the vulnerability of the NWHI to international shipping activities is that, although the islands span 1,200 miles, most emergency response equipment is stationed in the main Hawaiian Islands, including Kauai, which is to the east of the NWHI. Search, rescue, and response operations have been staged from Midway Atoll, which is at the far north-western end of the island chain; however, without assistance from resources based in the main Hawaiian Islands, search, rescue, and response from Midway can generally reach only 10 miles offshore due to the limited equipment located permanently on the island. The sparse land area and fragile environment of the other islands makes it virtually impossible for them to act as staging areas for emergency response efforts. This fact, coupled with the hazardous nature of navigation throughout this area, results in the NWHI being highly vulnerable to damage by international shipping.

2.4.6 Another potential source of damage to this pristine area by international shipping activities is from the introduction of alien species. While only approximately 11 alien species have been detected in the waters of the NWHI, once established these species are extremely difficult – if not impossible – to control and eradicate from the reefs. Therefore, it is critical to keep ships that may be carrying ballast water or species on their hulls from foundering or

grounding on the reefs and providing the opportunity for the introduction of alien species (Citizen's Guide 2006).

2.4.7 In addition to the threat posed by transiting ships, another stress to the environment of the NWHI is marine debris, a severe and chronic threat to the area. Ocean currents carry a wide array of marine debris to the NWHI, including derelict fishing nets and other gear, household plastics, hazardous materials, and shore-based debris, and deposit it on the reef and beaches of the island chain. The debris frequently entangles and kills coral and leads to the death of animals such as seabirds and the Hawaiian monk seal through the ingestion of material or entanglement in nets. Derelict fishing gear also poses a navigation hazard because, for example, it can get wrapped around the propeller of a vessel. In the past 10 years, United States agencies have removed over 560 tons of debris from NWHI reefs at a cost of approximately US\$13.5 million (Citizen's Guide 2006; Brainard 2006).

2.4.8 The IMO measure of six existing ATBAs is already in effect. While there has been no incident in the areas of the existing ATBAs subsequent to their adoption that involves the vessels to which the ATBAs apply (e.g., vessels of 1,000 gross tons and above), there have been incidents in the NWHI outside of the existing ATBAs and incidents within the ATBAs by vessels to which the ATBAs do not now apply. For instance, the **Paradise Queen II** grounded on Kure Atoll, an area which is not now included within the ATBAs. Within the ATBA surrounding Pearl and Hermes Atoll, the **Swordman I** and **Casitas** ran aground; however, these vessels were smaller than the 1,000 gross ton applicability threshold of the existing ATBAs.

ANNEX 4

**ASSOCIATED PROTECTIVE MEASURES FOR THE PAPAĀNAUMOKUĀKEA
MARINE NATIONAL MONUMENT PSSA***

Expansion and amendment of the areas to be avoided “In the region of the Papahānaumokuākea Marine National Monument Particularly Sensitive Sea Areas (PSSA)”

(Reference chart: United States 19016 (2007 edition; 19019, 2007 edition; 19022, 2007 edition.)
Note: These charts are based on World Geodetic System 1984 Datum (WGS-84) and astronomic datum².)

Description of the Areas to be Avoided

Given the magnitude of obstacles that make navigation in these areas hazardous, and in order to increase maritime safety, protection of the environment, preservation of cultural resources and areas of cultural importance significant to Native Hawaiians, and facilitate the ability to respond to developing maritime emergencies in the Papahānaumokuākea Marine National Monument, all ships solely in transit should avoid the following areas:

1 Those areas contained within a circle of radius of 50 nautical miles centred upon the following geographical positions:

- | | | |
|------|--------------|--|
| (1) | 28° 25'.18 N | 178° 19'.75 W (Kure Atoll) |
| (2) | 28° 14'.20 N | 177° 22'.10 W (Midway Atoll) |
| (3) | 27° 50'.62 N | 175° 50'.53 W (Pearl and Hermes Atoll) |
| (4) | 26° 03'.82 N | 173° 58'.00 W (Lisianski Island) |
| (5) | 25° 46'.18 N | 171° 43'.95 W (Laysan Island) |
| (6) | 25° 25'.45 N | 170° 35'.32 W (Maro Reef) |
| (7) | 25° 19'.50 N | 170° 00'.88 W (Between Maro Reef and Raita Bank) |
| (8) | 25° 00'.00 N | 167° 59'.92 W (Gardner Pinnacles) |
| (9) | 23° 45'.52 N | 166° 14'.62 W (French Frigate Shoals) |
| (10) | 23° 34'.60 N | 164° 42'.02 W (Necker Island) |
| (11) | 23° 03'.38 N | 161° 55'.32 W (Nihoa Island) |

2 The areas contained between the following geographical positions:

| | | Begin Co-ordinates | | End Co-ordinates | |
|---------------|--|--------------------|---------------|------------------|---------------|
| | | Latitude | Longitude | Latitude | Longitude |
| Area 1 | Lisianski Island (N) ---> Laysan Island | 26° 53'.22 N | 173° 49'.64 W | 26° 35'.58 N | 171° 35'.60 W |
| | Lisianski Island (S) ---> Laysan Island | 25° 14'.42 N | 174° 06'.36 W | 24° 57'.63 N | 171° 57'.07 W |
| Area 2 | Gardner Pinnacles (N) ---> French Frigate Shoals | 25° 38'.90 N | 167° 25'.31 W | 24° 24'.80 N | 165° 40'.89 W |
| | Gardner Pinnacles (S) ---> French Frigate Shoals | 24° 14'.27 N | 168° 22'.13 W | 23° 05'.84 N | 166° 47'.81 W |

* The text in this annex is directly taken from document MSC 83/28, annexes 25 and 26.

² The charts are available in paper, raster, or ENC form and may be found at <http://chartmaker.ncd.noaa.gov/NSD/coastpilot.htm>. Mariners are also urged to consult the latest edition, of the United States Coast Pilot No.7, available at <http://chartmaker.ncd.noaa.gov/nsd/coastpilot7.htm> and in particular, Chapter 14, which pertains to Hawaii, available at http://chartmaker.ncd.noaa.gov/nsd/Cp7/CP7-39ed-Ch14_7.pdf.

A ship reporting system (CORAL SHIPREP) is established in “The Papahānaumokuākea Marine National Monument” Particularly Sensitive Sea Area (PSSA)

1 Categories of ships

1.1 Ships required to participate in the system

1.1.1 As a condition of entry to a United States port or place, all ships 300 gross tonnage or greater, and all ships in the event of a developing emergency, and that are in transit through the reporting area are required to participate in CORAL SHIPREP, except for sovereign immune vessels which are exempt under SOLAS regulation V/1.

1.2 Ships recommended to participate in the system

1.2.1 All ships 300 gross tonnage or greater, fishing vessels, and all ships in the event of a developing emergency, and that are in transit through the reporting area are recommended to participate in CORAL SHIPREP.

2 Geographical coverage of the system and the number and edition of the reference chart used for the delineation of the system

2.1 The geographical coverage of CORAL SHIPREP is depicted by the geographical positions in the appendix.

2.2 The reference charts that include the ship reporting area are United States 19016, 2007 edition, 19019, 2007 edition, and 19022, 2007 edition. These charts are based on World Geodetic System 1984 Datum (WGS-84) and astronomic datum.

3 Format, content of reports, times and geographical positions for submitting reports, authorities to whom reports should³ be sent, available services

3.1 Format

3.1.1 The ship report should be drafted in accordance with the format shown in paragraph 2 of the appendix to resolution A.851(20).

3.2 Content

3.2.1 The report for a ship entering the system should contain the following information:

System identifier: CORAL SHIPREP

| | |
|--------|---|
| A | Name of the ship, call sign, or IMO identification number |
| B | Date and Time (UTC) |
| C or D | Position |
| E or F | Course and speed of ship |
| I | Destination |
| L | Intended route through the reporting area |
| O | Vessel draft |

³ For those ships that are required to report the use of the word “should” in this annex is to be read as “shall”.

| | |
|--------|--|
| P | General categories of hazardous cargo on board |
| Q or R | Defects or deficiencies, if relevant |
| T | Contact information of ship's agent or owner |
| U | Ship size and type (e.g., length, tonnage, and type) |
| W | Total number of persons on board |

3.2.2 The report for a ship leaving the system should contain the following information:

System identifier: CORAL SHIPREP

| | |
|--------|---|
| A | Name of the ship, call sign, or IMO identification number |
| B | Date and Time (UTC) |
| C or D | Position |

3.2.3 A ship may elect, for reasons of commercial confidentiality, to communicate that section of the report which provides information on general categories of hazardous cargo by non-verbal means prior to entering the reporting area.

3.3 *Geographical positions for submitting reports*

3.3.1 Each ship should submit a full report in accordance with paragraph 3.2.1 as soon as it crosses the boundary to enter the ship reporting system.

3.3.2 Each ship should submit a report in accordance with paragraph 3.2.2 as soon as it crosses the boundary to leave the ship reporting system.

3.3.3 Further reports should be made whenever there is a change in navigation status or circumstances, particularly in relation to item Q of the reporting format.

3.4 *Authority to whom reports should be sent*

3.4.1 The shore-based Authority is the United States Coast Guard's Communication Area Master Station Pacific (CAMSPAC). For ships 300 gross tonnage and greater, an e-mail address to be used for reporting through INMARSAT-C will be provided in advance of implementation of this system through Notices to Mariners. In the event of a developing emergency, ships are urged to call the United States Coast Guard 14th District. Vessels unable to report in through INMARSAT-C should report to nwhi.notification@noaa.gov.

4 Information to be provided to ship and procedures to be followed

4.1 The CORAL SHIPREP shore-based Authority will provide critical alerts and information to shipping about specific and urgent situations and other information that may affect safety of navigation within the IMO-adopted Areas To Be Avoided and "The Papahānaumokuākea Marine National Monument" Particularly Sensitive Sea Area, as well as remind ships about the existence of the IMO-adopted Areas To Be Avoided and necessity of navigating with extreme caution through the Particularly Sensitive Sea Area.⁴

⁴ Pending the final decision of MEPC 57 on the designation of this PSSA.

4.2 Navigational warnings and emergency broadcasts will be issued as NAVTEX messages or specifically directed at GMDSS equipped vessels using INMARSAT-C.

5 Radio Communication required for the system and frequencies on which reports should be transmitted

5.1 This system will be based on INMARSAT-C and an e-mail and ships equipped with such capabilities should report through INMARSAT-C.

5.2 In the event of a developing emergency, a ship is urged to call the United States Coast Guard 14th District at 001-808-541-2500 to request a response and assistance.

5.3 For vessels unable to communicate through INMARSAT-C, reports should be made prior to, during, or after transiting through the reporting area to nwhi.notification@noaa.gov.

5.4 Commercially sensitive information will be kept confidential and should be transmitted prior to entry into the reporting system. Such information may be sent to nwhi.notification@noaa.gov.

5.5 The language used for reports to the system should be English, employing the IMO *Standard Marine Communications Phrases*, where necessary.

5.6 Communications associated with CORAL SHIPREP are, in accordance with SOLAS regulation V/11, free of charge to affected vessels.

6 Relevant rules and regulations in force in the area of the system

6.1 International actions

6.1.1 The United States has taken appropriate action to implement the international conventions to which it is party.

6.1.2 In recognition of the fragile environment in this area and potential hazards to navigation, the IMO has adopted several Areas To Be Avoided to protect the Northwestern Hawaiian Islands and has designated the area as a Particularly Sensitive Sea Areas where mariners should navigate with extreme caution.

6.1.3 The United States applies its laws in accordance with international law, which includes navigational rights under customary international law as reflected in the United Nations Convention on the Law of the Sea. No restrictions shall apply to or be enforced against foreign flagged vessels unless in accordance with such law.

6.2 Domestic Actions

6.2.1 The United States has taken considerable action to ensure maritime safety and to protect the fragile environment and cultural resources and areas of cultural importance significant to Native Hawaiians in the NWHI. This area has been the subject of a variety of protective measures, including designation of this area as the North-western Hawaiian Islands Marine National Monument (subsequently renamed the Papahānaumokuākea Marine National Monument) in recognition of its fragility and to protect the many species of coral, fish, birds, marine mammals, and other flora and fauna, as well as to protect historical and archaeological

heritage resources, including cultural resources and areas of significant importance to Native Hawaiians.

6.2.2 Regulations in this area, *inter alia*, prohibit taking, possessing, injuring, or disturbing any resource; altering the seabed; anchoring or deserting a vessel; and possessing fishing gear unless stowed. All of these activities may be allowed by permit; however, permits cannot be issued for such things as releasing an introduced species. Activities such as discharging or depositing any material into the Monument, or discharging or depositing any material outside the Monument that subsequently injures Monument resources, except discharges incidental to vessel use, such as approved marine sanitation device effluent, cooling water, and engine exhaust are also prohibited. The United States strictly regulates entry into the Monument and, for those vessels subject to United States jurisdiction, requires the mandatory use of vessel monitoring systems on those vessels that may be allowed into the Monument for specific purposes.

7 Shore-based facilities to support operation of the system

7.1 The shore-based Authority is the United States Coast Guard's Communications Area Master Station Pacific (CAMSPAC). CAMSPAC provides maritime distress communication services and safety and weather broadcasts to commercial and recreational mariners, and also provides secure voice communications and record message delivery services for all United States Coast Guard cutters, aircraft, and shore units. Additionally, CAMSPAC is one of the United States Coast Guard's Pacific Area's (PACAREA) Continuity of Operations sites. CAMSPAC delivers contingency and interagency communication services for Incident Commanders by deploying a state-of-the-art transportable communications centre. CAMSPAC is the Operational Commander of the United States Coast Guard's Pacific Area Communications System, consisting of communication stations in Honolulu Hawaii, Kodiak Alaska, and remote facilities in Guam. There are approximately 150 people assigned to CAMSPAC.

7.2 CORAL SHIPREP will use INMARSAT-C communications equipment. A computer server handles and sorts incoming reports and sends the return message. Incoming reports are text messages that arrive via either internet e-mail or telex. When the ship reporting system server receives a report, the server sends the ship a specific return message. Area co-ordinators will monitor and update the information to the server for inclusion in the outgoing message.

8 Alternative communication if the shore-based facilities fail

8.1 NAVTEX Broadcast Notice to Mariners may be used to notify mariners of the temporary failure of the system and can provide mariners with basic information necessary to navigate safely through this area.

8.2 For those ships reporting through INMARSAT-C, the standard protocol now used for such systems will be used to re-route incoming and outgoing communications through an alternative address and it is expected that this will minimize the system's downtime, though a short delay may occur.

9 Measures to be taken if a ship does not report

9.1.1 All means will be used to encourage and promote the full participation of the ships recommended to submit reports.

9.1.2 If reports are not submitted by those ships required to report and the ship can be positively identified, appropriate action will be taken – including interaction with the flag State – in accordance with customary international law as reflected in the 1982 United Nations Convention on the Law of the Sea.

APPENDIX

GEOGRAPHICAL CO-ORDINATES

SHIP REPORTING SYSTEM

(Reference chart: United States 19016 (2007 edition; 19019, 2007 edition; 19022, 2007 edition.)
These charts are based on World Geodetic System 1984 Datum (WGS-84) and astronomic datum.)

1 Outer Boundary

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 1 | 29°25'.47 N | 178°16'.97 W |
| 2 | 28°43'.73 N | 175°13'.84 W |
| 3 | 27°00'.77 N | 173°25'.78 W |
| 4 | 26°44'.91 N | 171°28'.07 W |
| 5 | 26°24'.23 N | 170°20'.59 W |
| 6 | 25°56'.43 N | 167°32'.10 W |
| 7 | 24°50'.20 N | 165°58'.69 W |
| 8 | 24°05'.52 N | 161°56'.86 W |
| 9 | 24°05'.29 N | 161°56'.62 W |
| 10 | 24°04'.37 N | 161°51'.53 W |
| 11 | 24°03'.44 N | 161°46'.45 W |
| 12 | 24°02'.41 N | 161°41'.39 W |
| 13 | 24°01'.31 N | 161°36'.35 W |
| 14 | 23°59'.68 N | 161°31'.55 W |
| 15 | 23°57'.85 N | 161°26'.85 W |
| 16 | 23°55'.54 N | 161°22'.31 W |
| 17 | 23°52'.96 N | 161°17'.92 W |
| 18 | 23°50'.12 N | 161°13'.72 W |
| 19 | 23°46'.94 N | 161°10'.08 W |
| 20 | 23°43'.49 N | 161°06'.47 W |
| 21 | 23°39'.71 N | 161°03'.09 W |
| 22 | 23°35'.72 N | 161°00'.14 W |
| 23 | 23°31'.59 N | 160°57'.46 W |
| 24 | 23°27'.32 N | 160°55'.23 W |
| 25 | 23°22'.74 N | 160°53'.71 W |
| 26 | 23°18'.29 N | 160°52'.17 W |
| 27 | 23°13'.57 N | 160°51'.04 W |
| 28 | 23°08'.68 N | 160°50'.46 W |
| 29 | 23°03'.70 N | 160°50'.17 W |
| 30 | 22°58'.67 N | 160°50'.35 W |
| 31 | 22°53'.84 N | 160°51'.04 W |
| 32 | 22°49'.11 N | 160°52'.20 W |
| 33 | 22°44'.46 N | 160°53'.56 W |
| 34 | 22°40'.03 N | 160°55'.52 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 35 | 22°35'.73 N | 160°57'.68 W |
| 36 | 22°31'.54 N | 161°00'.25 W |
| 37 | 22°27'.57 N | 161°03'.23 W |
| 38 | 22°23'.76 N | 161°06'.64 W |
| 39 | 22°20'.24 N | 161°10'.23 W |
| 40 | 22°17'.02 N | 161°14'.13 W |
| 41 | 22°14'.04 N | 161°18'.34 W |
| 42 | 22°11'.35 N | 161°22'.80 W |
| 43 | 22°09'.19 N | 161°27'.45 W |
| 44 | 22°07'.29 N | 161°32'.11 W |
| 45 | 22°05'.87 N | 161°36'.94 W |
| 46 | 22°04'.62 N | 161°41'.89 W |
| 47 | 22°03'.94 N | 161°47'.09 W |
| 48 | 22°03'.41 N | 161°52'.36 W |
| 49 | 22°03'.41 N | 161°57'.51 W |
| 50 | 22°03'.82 N | 162°02'.83 W |
| 51 | 22°04'.49 N | 162°08'.04 W |
| 52 | 22°05'.43 N | 162°13'.12 W |
| 53 | 22°05'.97 N | 162°16'.41 W |
| 54 | 22°06'.29 N | 162°16'.85 W |
| 55 | 22°34'.57 N | 164°47'.27 W |
| 56 | 22°47'.60 N | 166°38'.23 W |
| 57 | 24°03'.82 N | 168°27'.91 W |
| 58 | 24°25'.76 N | 170°45'.39 W |
| 59 | 24°46'.54 N | 171°53'.03 W |
| 60 | 25°07'.60 N | 174°28'.71 W |
| 61 | 27°05'.82 N | 176°35'.51 W |
| 62 | 27°27'.32 N | 178°38'.66 W |
| 63 | 27°28'.93 N | 178°43'.56 W |
| 64 | 27°30'.64 N | 178°48'.40 W |
| 65 | 27°32'.74 N | 178°52'.96 W |
| 66 | 27°35'.06 N | 178°57'.30 W |
| 67 | 27°37'.89 N | 179°01'.49 W |
| 68 | 27°40'.90 N | 179°05'.60 W |
| 69 | 27°44'.17 N | 179°09'.41 W |
| 70 | 27°47'.74 N | 179°12'.85 W |
| 71 | 27°51'.45 N | 179°16'.00 W |
| 72 | 27°55'.32 N | 179°18'.82 W |
| 73 | 27°59'.33 N | 179°21'.13 W |
| 74 | 28°03'.49 N | 179°23'.15 W |
| 75 | 28°07'.82 N | 179°24'.76 W |
| 76 | 28°12'.31 N | 179°26'.18 W |
| 77 | 28°16'.95 N | 179°27'.05 W |
| 78 | 28°21'.61 N | 179°27'.63 W |
| 79 | 28°26'.18 N | 179°27'.77 W |
| 80 | 28°30'.87 N | 179°27'.48 W |
| 81 | 28°35'.61 N | 179°26'.95 W |
| 82 | 28°40'.09 N | 179°25'.75 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 83 | 28°44'.46 N | 179°24'.31 W |
| 84 | 28°48'.70 N | 179°22'.50 W |
| 85 | 28°52'.81 N | 179°20'.43 W |
| 86 | 28°56'.71 N | 179°17'.77 W |
| 87 | 29°00'.58 N | 179°14'.92 W |
| 88 | 29°04'.18 N | 179°11'.69 W |
| 89 | 29°07'.62 N | 179°08'.20 W |
| 90 | 29°10'.86 N | 179°04'.37 W |
| 91 | 29°13'.76 N | 179°00'.21 W |
| 92 | 29°16'.24 N | 178°55'.78 W |
| 93 | 29°18'.51 N | 178°51'.26 W |
| 94 | 29°20'.45 N | 178°46'.50 W |
| 95 | 29°22'.26 N | 178°41'.67 W |
| 96 | 29°23'.52 N | 178°36'.64 W |
| 97 | 29°24'.53 N | 178°31'.54 W |
| 98 | 29°25'.16 N | 178°26'.31 W |
| 99 | 29°25'.42 N | 178°20'.92 W |
| 100 | 29°25'.29 N | 178°16'.70 W |

2 Inner Boundary Around Kure Atoll, Midway Atoll, and Pearl and Hermes Atoll

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 1 | 27°14'.76 N | 176°29'.87 W |
| 2 | 27°24'.95 N | 177°33'.31 W |
| 3 | 27°35'.87 N | 178°29'.90 W |
| 4 | 27°36'.64 N | 178°33'.93 W |
| 5 | 27°37'.53 N | 178°37'.32 W |
| 6 | 27°38'.60 N | 178°40'.65 W |
| 7 | 27°39'.85 N | 178°43'.90 W |
| 8 | 27°41'.28 N | 178°47'.05 W |
| 9 | 27°42'.89 N | 178°50'.10 W |
| 10 | 27°44'.66 N | 178°53'.03 W |
| 11 | 27°46'.59 N | 178°55'.83 W |
| 12 | 27°48'.67 N | 178°58'.49 W |
| 13 | 27°50'.89 N | 179°01'.00 W |
| 14 | 27°53'.22 N | 179°03'.39 W |
| 15 | 27°55'.69 N | 179°05'.61 W |
| 16 | 27°58'.29 N | 179°07'.61 W |
| 17 | 28°01'.01 N | 179°09'.47 W |
| 18 | 28°03'.81 N | 179°11'.10 W |
| 19 | 28°06'.71 N | 179°12'.53 W |
| 20 | 28°09'.67 N | 179°13'.75 W |
| 21 | 28°12'.70 N | 179°14'.75 W |
| 22 | 28°15'.78 N | 179°15'.54 W |
| 23 | 28°18'.91 N | 179°16'.11 W |
| 24 | 28°22'.04 N | 179°16'.45 W |
| 25 | 28°24'.72 N | 179°16'.56 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 26 | 28°25'.20 N | 179°16'.57 W |
| 27 | 28°25'.81 N | 179°16'.56 W |
| 28 | 28°28'.35 N | 179°16'.44 W |
| 29 | 28°31'.49 N | 179°16'.10 W |
| 30 | 28°34'.61 N | 179°15'.54 W |
| 31 | 28°37'.69 N | 179°14'.75 W |
| 32 | 28°40'.71 N | 179°13'.74 W |
| 33 | 28°43'.68 N | 179°12'.54 W |
| 34 | 28°46'.58 N | 179°11'.13 W |
| 35 | 28°49'.39 N | 179°09'.52 W |
| 36 | 28°52'.11 N | 179°07'.70 W |
| 37 | 28°54'.72 N | 179°05'.70 W |
| 38 | 28°57'.21 N | 179°03'.51 W |
| 39 | 28°59'.58 N | 179°01'.15 W |
| 40 | 29°01'.81 N | 178°58'.62 W |
| 41 | 29°03'.90 N | 178°55'.93 W |
| 42 | 29°05'.83 N | 178°53'.10 W |
| 43 | 29°07'.60 N | 178°50'.13 W |
| 44 | 29°09'.21 N | 178°47'.04 W |
| 45 | 29°10'.64 N | 178°43'.84 W |
| 46 | 29°11'.89 N | 178°40'.54 W |
| 47 | 29°12'.95 N | 178°37'.16 W |
| 48 | 29°13'.82 N | 178°33'.71 W |
| 49 | 29°14'.50 N | 178°30'.21 W |
| 50 | 29°14'.99 N | 178°26'.66 W |
| 51 | 29°15'.28 N | 178°23'.08 W |
| 52 | 29°15'.36 N | 178°19'.49 W |
| 53 | 29°15'.25 N | 178°15'.90 W |
| 54 | 29°14'.94 N | 178°12'.32 W |
| 55 | 29°14'.43 N | 178°08'.78 W |
| 56 | 29°03'.47 N | 177°12'.07 W |
| 57 | 29°02'.55 N | 177°07'.29 W |
| 58 | 28°38'.96 N | 175°35'.47 W |
| 59 | 28°38'.67 N | 175°34'.35 W |
| 60 | 28°34'.91 N | 175°19'.74 W |
| 61 | 28°26'.24 N | 175°10'.65 W |
| 62 | 28°24'.61 N | 175°08'.95 W |
| 63 | 28°24'.53 N | 175°09'.04 W |
| 64 | 28°20'.09 N | 175°04'.91 W |
| 65 | 28°16'.05 N | 175°01'.92 W |
| 66 | 28°11'.78 N | 174°59'.33 W |
| 67 | 28°07'.29 N | 174°57'.23 W |
| 68 | 28°02'.63 N | 174°55'.68 W |
| 69 | 27°57'.84 N | 174°54'.62 W |
| 70 | 27°53'.01 N | 174°54'.05 W |
| 71 | 27°48'.12 N | 174°54'.05 W |
| 72 | 27°43'.28 N | 174°54'.62 W |
| 73 | 27°38'.48 N | 174°55'.71 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 74 | 27°33'.81 N | 174°57'.32 W |
| 75 | 27°29'.30 N | 174°59'.43 W |
| 76 | 27°25'.00 N | 175°02'.03 W |
| 77 | 27°20'.93 N | 175°05'.07 W |
| 78 | 27°17'.18 N | 175°08'.59 W |
| 79 | 27°13'.73 N | 175°12'.47 W |
| 80 | 27°10'.59 N | 175°16'.67 W |
| 81 | 27°07'.88 N | 175°21'.25 W |
| 82 | 27°05'.57 N | 175°26'.09 W |
| 83 | 27°03'.66 N | 175°31'.15 W |
| 84 | 27°02'.22 N | 175°36'.40 W |
| 85 | 27°01'.29 N | 175°41'.78 W |
| 86 | 27°00'.73 N | 175°47'.22 W |
| 87 | 27°00'.68 N | 175°52'.74 W |
| 88 | 27°01'.09 N | 175°58'.16 W |
| 89 | 27°01'.99 N | 176°03'.53 W |
| 90 | 27°03'.34 N | 176°08'.81 W |
| 91 | 27°05'.12 N | 176°13'.91 W |
| 92 | 27°07'.37 N | 176°18'.79 W |
| 93 | 27°09'.98 N | 176°23'.40 W |
| 94 | 27°13'.02 N | 176°27'.74 W |
| 95 | 27°13'.77 N | 176°28'.70 W |

3 Inner Boundary Around Lisianski Island, Laysan Island, Maro Reef, and Raita Bank

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 1 | 26°50'.89 N | 173°30'.79 W |
| 2 | 26°36'.00 N | 171°37'.70 W |
| 3 | 26°35'.49 N | 171°33'.84 W |
| 4 | 26°35'.10 N | 171°30'.84 W |
| 5 | 26°34'.07 N | 171°27'.50 W |
| 6 | 26°33'.35 N | 171°25'.16 W |
| 7 | 26°14'.26 N | 170°23'.04 W |
| 8 | 26°08'.69 N | 169°48'.96 W |
| 9 | 26°08'.36 N | 169°49'.03 W |
| 10 | 26°07'.62 N | 169°45'.83 W |
| 11 | 26°06'.03 N | 169°40'.57 W |
| 12 | 26°03'.97 N | 169°35'.64 W |
| 13 | 26°01'.51 N | 169°30'.91 W |
| 14 | 25°58'.65 N | 169°26'.45 W |
| 15 | 25°55'.32 N | 169°22'.34 W |
| 16 | 25°51'.67 N | 169°18'.60 W |
| 17 | 25°47'.78 N | 169°15'.19 W |
| 18 | 25°43'.54 N | 169°12'.34 W |
| 19 | 25°39'.05 N | 169°09'.93 W |
| 20 | 25°34'.37 N | 169°08'.08 W |
| 21 | 25°29'.54 N | 169°06'.76 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 22 | 25°24'.61 N | 169°05'.93 W |
| 23 | 25°19'.63 N | 169°05'.64 W |
| 24 | 25°14'.65 N | 169°05'.93 W |
| 25 | 25°09'.69 N | 169°06'.66 W |
| 26 | 25°04'.85 N | 169°08'.02 W |
| 27 | 25°00'.17 N | 169°09'.96 W |
| 28 | 24°55'.66 N | 169°12'.35 W |
| 29 | 24°51'.35 N | 169°15'.14 W |
| 30 | 24°47'.37 N | 169°18'.48 W |
| 31 | 24°43'.69 N | 169°22'.22 W |
| 32 | 24°40'.34 N | 169°26'.31 W |
| 33 | 24°37'.42 N | 169°30'.78 W |
| 34 | 24°35'.00 N | 169°35'.64 W |
| 35 | 24°33'.02 N | 169°40'.66 W |
| 36 | 24°31'.34 N | 169°45'.88 W |
| 37 | 24°30'.31 N | 169°51'.08 W |
| 38 | 24°29'.68 N | 169°56'.53 W |
| 39 | 24°29'.56 N | 170°01'.81 W |
| 40 | 24°29'.61 N | 170°04'.57 W |
| 41 | 24°35'.77 N | 170°44'.39 W |
| 42 | 24°36'.29 N | 170°47'.58 W |
| 43 | 24°37'.18 N | 170°50'.37 W |
| 44 | 24°37'.76 N | 170°52'.17 W |
| 45 | 24°56'.23 N | 171°50'.19 W |
| 46 | 25°16'.61 N | 174°24'.84 W |
| 47 | 25°29'.56 N | 174°38'.45 W |
| 48 | 25°33'.28 N | 174°42'.03 W |
| 49 | 25°37'.33 N | 174°45'.20 W |
| 50 | 25°41'.68 N | 174°47'.84 W |
| 51 | 25°46'.23 N | 174°50'.05 W |
| 52 | 25°50'.93 N | 174°51'.77 W |
| 53 | 25°55'.80 N | 174°52'.91 W |
| 54 | 26°00'.71 N | 174°53'.47 W |
| 55 | 26°05'.67 N | 174°53'.61 W |
| 56 | 26°10'.59 N | 174°53'.07 W |
| 57 | 26°15'.46 N | 174°52'.08 W |
| 58 | 26°20'.20 N | 174°50'.57 W |
| 59 | 26°24'.75 N | 174°48'.44 W |
| 60 | 26°29'.15 N | 174°45'.94 W |
| 61 | 26°33'.26 N | 174°42'.96 W |
| 62 | 26°37'.11 N | 174°39'.49 W |
| 63 | 26°40'.60 N | 174°35'.63 W |
| 64 | 26°43'.75 N | 174°31'.43 W |
| 65 | 26°46'.49 N | 174°26'.87 W |
| 66 | 26°48'.90 N | 174°22'.09 W |
| 67 | 26°50'.79 N | 174°17'.03 W |
| 68 | 26°52'.20 N | 174°11'.79 W |
| 69 | 26°53'.21 N | 174°06'.43 W |

| Point | LATITUDE | LONGITUDE |
|-------|-------------|--------------|
| 70 | 26°53'.74 N | 174°00'.98 W |
| 71 | 26°53'.74 N | 173°55'.48 W |
| 72 | 26°53'.29 N | 173°50'.02 W |
| 73 | 26°52'.56 N | 173°44'.58 W |
| 74 | 26°51'.85 N | 173°39'.14 W |
| 75 | 26°51'.13 N | 173°33'.69 W |
| 76 | 26°50'.75 N | 173°30'.87 W |

4 Inner Boundary Around Gardner Pinnacles, French Frigate Shoals, and Necker Island

| Point | LATITUDE | LONGITUDE |
|-------|-------------|--------------|
| 1 | 25°49'.64 N | 167°52'.66 W |
| 2 | 25°49'.70 N | 167°52'.65 W |
| 3 | 25°48'.99 N | 167°48'.35 W |
| 4 | 25°47'.09 N | 167°36'.72 W |
| 5 | 25°39'.84 N | 167°26'.48 W |
| 6 | 25°35'.10 N | 167°19'.79 W |
| 7 | 25°10'.43 N | 166°45'.00 W |
| 8 | 24°40'.91 N | 166°03'.36 W |
| 9 | 24°35'.64 N | 165°34'.99 W |
| 10 | 24°23'.78 N | 164°31'.12 W |
| 11 | 24°23'.59 N | 164°31'.14 W |
| 12 | 24°23'.31 N | 164°29'.74 W |
| 13 | 24°21'.85 N | 164°24'.52 W |
| 14 | 24°20'.10 N | 164°19'.39 W |
| 15 | 24°17'.75 N | 164°14'.56 W |
| 16 | 24°14'.99 N | 164°09'.97 W |
| 17 | 24°11'.86 N | 164°05'.69 W |
| 18 | 24°08'.30 N | 164°01'.80 W |
| 19 | 24°04'.48 N | 163°58'.23 W |
| 20 | 24°00'.27 N | 163°55'.22 W |
| 21 | 23°55'.85 N | 163°52'.59 W |
| 22 | 23°51'.17 N | 163°50'.56 W |
| 23 | 23°46'.33 N | 163°48'.98 W |
| 24 | 23°41'.37 N | 163°47'.99 W |
| 25 | 23°36'.34 N | 163°47'.56 W |
| 26 | 23°31'.27 N | 163°47'.60 W |
| 27 | 23°26'.27 N | 163°48'.28 W |
| 28 | 23°21'.34 N | 163°49'.50 W |
| 29 | 23°16'.53 N | 163°51'.14 W |
| 30 | 23°11'.96 N | 163°53'.47 W |
| 31 | 23°07'.54 N | 163°56'.15 W |
| 32 | 23°03'.46 N | 163°59'.38 W |
| 33 | 22°59'.65 N | 164°03'.01 W |
| 34 | 22°56'.27 N | 164°07'.10 W |
| 35 | 22°53'.22 N | 164°11'.49 W |
| 36 | 22°50'.60 N | 164°16'.18 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 37 | 22°48'.48 N | 164°21'.16 W |
| 38 | 22°46'.73 N | 164°26'.28 W |
| 39 | 22°45'.49 N | 164°31'.60 W |
| 40 | 22°44'.83 N | 164°37'.03 W |
| 41 | 22°44'.65 N | 164°42'.51 W |
| 42 | 22°44'.92 N | 164°47'.99 W |
| 43 | 22°45'.11 N | 164°49'.52 W |
| 44 | 22°45'.39 N | 164°51'.48 W |
| 45 | 22°45'.17 N | 164°51'.53 W |
| 46 | 22°50'.26 N | 165°34'.99 W |
| 47 | 22°55'.50 N | 166°19'.63 W |
| 48 | 22°55'.93 N | 166°23'.32 W |
| 49 | 22°57'.41 N | 166°36'.00 W |
| 50 | 23°03'.75 N | 166°45'.00 W |
| 51 | 23°05'.48 N | 166°47'.45 W |
| 52 | 24°12'.70 N | 168°22'.86 W |
| 53 | 24°12'.88 N | 168°22'.78 W |
| 54 | 24°16'.05 N | 168°27'.28 W |
| 55 | 24°19'.15 N | 168°31'.66 W |
| 56 | 24°22'.27 N | 168°35'.95 W |
| 57 | 24°25'.71 N | 168°39'.94 W |
| 58 | 24°29'.51 N | 168°43'.55 W |
| 59 | 24°33'.67 N | 168°46'.63 W |
| 60 | 24°38'.06 N | 168°49'.29 W |
| 61 | 24°42'.68 N | 168°51'.46 W |
| 62 | 24°47'.45 N | 168°53'.12 W |
| 63 | 24°52'.34 N | 168°54'.28 W |
| 64 | 24°57'.32 N | 168°54'.82 W |
| 65 | 25°02'.32 N | 168°54'.95 W |
| 66 | 25°07'.30 N | 168°54'.43 W |
| 67 | 25°12'.19 N | 168°53'.32 W |
| 68 | 25°16'.99 N | 168°51'.76 W |
| 69 | 25°21'.57 N | 168°49'.60 W |
| 70 | 25°25'.94 N | 168°46'.93 W |
| 71 | 25°30'.09 N | 168°43'.86 W |
| 72 | 25°33'.89 N | 168°40'.42 W |
| 73 | 25°37'.37 N | 168°36'.52 W |
| 74 | 25°40'.49 N | 168°32'.24 W |
| 75 | 25°43'.24 N | 168°27'.68 W |
| 76 | 25°45'.57 N | 168°22'.82 W |
| 77 | 25°47'.43 N | 168°17'.76 W |
| 78 | 25°48'.79 N | 168°12'.47 W |
| 79 | 25°49'.72 N | 168°07'.09 W |
| 80 | 25°50'.11 N | 168°01'.62 W |
| 81 | 25°50'.18 N | 168°00'.09 W |

5 Inner Boundary Around Nihoa Island

| Point | LATITUDE | LONGITUDE |
|-------|-------------|--------------|
| 1 | 23°52'.82 N | 161°44'.54 W |
| 2 | 23°52'.10 N | 161°41'.20 W |
| 3 | 23°51'.18 N | 161°37'.92 W |
| 4 | 23°50'.08 N | 161°34'.71 W |
| 5 | 23°48'.79 N | 161°31'.58 W |
| 6 | 23°47'.33 N | 161°28'.55 W |
| 7 | 23°45'.69 N | 161°25'.62 W |
| 8 | 23°43'.88 N | 161°22'.81 W |
| 9 | 23°41'.92 N | 161°20'.13 W |
| 10 | 23°39'.80 N | 161°17'.60 W |
| 11 | 23°37'.54 N | 161°15'.21 W |
| 12 | 23°35'.14 N | 161°12'.99 W |
| 13 | 23°32'.62 N | 161°10'.93 W |
| 14 | 23°29'.99 N | 161°09'.05 W |
| 15 | 23°27'.25 N | 161°07'.35 W |
| 16 | 23°24'.42 N | 161°05'.85 W |
| 17 | 23°21'.51 N | 161°04'.54 W |
| 18 | 23°18'.52 N | 161°03'.43 W |
| 19 | 23°15'.48 N | 161°02'.53 W |
| 20 | 23°12'.39 N | 161°01'.84 W |
| 21 | 23°09'.27 N | 161°01'.35 W |
| 22 | 23°06'.13 N | 161°01'.09 W |
| 23 | 23°02'.97 N | 161°01'.03 W |
| 24 | 22°59'.82 N | 161°01'.19 W |
| 25 | 22°56'.69 N | 161°01'.57 W |
| 26 | 22°53'.58 N | 161°02'.15 W |
| 27 | 22°50'.51 N | 161°02'.95 W |
| 28 | 22°47'.50 N | 161°03'.95 W |
| 29 | 22°44'.55 N | 161°05'.15 W |
| 30 | 22°41'.67 N | 161°06'.54 W |
| 31 | 22°38'.88 N | 161°08'.13 W |
| 32 | 22°36'.19 N | 161°09'.90 W |
| 33 | 22°33'.61 N | 161°11'.85 W |
| 34 | 22°31'.14 N | 161°13'.97 W |
| 35 | 22°28'.81 N | 161°16'.25 W |
| 36 | 22°26'.61 N | 161°18'.69 W |
| 37 | 22°24'.56 N | 161°21'.26 W |
| 38 | 22°22'.66 N | 161°23'.97 W |
| 39 | 22°20'.92 N | 161°26'.80 W |
| 40 | 22°19'.35 N | 161°29'.74 W |
| 41 | 22°17'.95 N | 161°32'.78 W |
| 42 | 22°16'.73 N | 161°35'.90 W |
| 43 | 22°15'.70 N | 161°39'.10 W |
| 44 | 22°14'.85 N | 161°42'.37 W |
| 45 | 22°14'.20 N | 161°45'.68 W |
| 46 | 22°13'.73 N | 161°49'.03 W |

| Point | LATITUDE | LONGITUDE |
|--------------|-----------------|------------------|
| 47 | 22°13'.47 N | 161°52'.41 W |
| 48 | 22°13'.40 N | 161°55'.80 W |
| 49 | 22°13'.53 N | 161°59'.18 W |
| 50 | 22°13'.85 N | 162°02'.55 W |
| 51 | 22°14'.31 N | 162°05'.45 W |
| 52 | 22°14'.37 N | 162°05'.89 W |
| 53 | 22°14'.59 N | 162°06'.88 W |
| 54 | 22°15'.87 N | 162°12'.18 W |
| 55 | 22°17'.70 N | 162°17'.31 W |
| 56 | 22°19'.97 N | 162°22'.20 W |
| 57 | 22°22'.73 N | 162°26'.84 W |
| 58 | 22°25'.88 N | 162°31'.15 W |
| 59 | 22°29'.41 N | 162°35'.09 W |
| 60 | 22°33'.28 N | 162°38'.61 W |
| 61 | 22°37'.47 N | 162°41'.72 W |
| 62 | 22°41'.93 N | 162°44'.34 W |
| 63 | 22°46'.63 N | 162°46'.47 W |
| 64 | 22°51'.48 N | 162°48'.05 W |
| 65 | 22°56'.46 N | 162°49'.09 W |
| 66 | 23°01'.50 N | 162°49'.58 W |
| 67 | 23°06'.58 N | 162°49'.49 W |
| 68 | 23°11'.61 N | 162°48'.89 W |
| 69 | 23°16'.57 N | 162°47'.70 W |
| 70 | 23°21'.36 N | 162°45'.98 W |
| 71 | 23°26'.02 N | 162°43'.75 W |
| 72 | 23°30'.40 N | 162°41'.01 W |
| 73 | 23°34'.51 N | 162°37'.83 W |
| 74 | 23°38'.26 N | 162°34'.18 W |
| 75 | 23°41'.69 N | 162°30'.18 W |
| 76 | 23°44'.72 N | 162°25'.79 W |
| 77 | 23°47'.36 N | 162°21'.11 W |
| 78 | 23°49'.55 N | 162°16'.16 W |
| 79 | 23°51'.24 N | 162°10'.99 W |
| 80 | 23°52'.44 N | 162°05'.63 W |
| 81 | 23°53'.14 N | 162°00'.25 W |
| 82 | 23°53'.36 N | 161°54'.75 W |
| 83 | 23°53'.09 N | 161°49'.28 W |
| 84 | 23°52'.82 N | 161°47'.09 W |
| 85 | 23°52'.39 N | 161°44'.67 W |

ANNEX 13**RESOLUTION MEPC.172(57)****Adopted on 4 April 2008****ESTABLISHMENT OF THE DATE ON WHICH REGULATION 5(1)(a) OF
MARPOL ANNEX V IN RESPECT OF THE MEDITERRANEAN SEA AREA
SPECIAL AREA SHALL TAKE EFFECT**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38 of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING regulation 5(1)(a) of Annex V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), defines the Mediterranean Sea area as a Special Area under the said Annex,

NOTING ALSO the definition of the Special Area under MARPOL Annex V, i.e. a sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of pollution of the sea by garbage, is required,

NOTING FURTHER the information provided at MEPC 57 by Albania, Algeria, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia and Turkey, representing States bordering the Mediterranean Sea area Special Area, that adequate reception facilities are provided in all major ports within the said Special Area, in accordance with the provisions of regulation 5(4)(a) of MARPOL Annex V,

HAVING CONSIDERED the matter to establish the date, on which the discharge requirements of regulation 5(1)(a) of MARPOL Annex V in respect of the Mediterranean Sea area Special Area shall take effect,

1. DECIDES that the discharge requirements for Special Areas in regulation 5 of MARPOL Annex V for the Mediterranean Sea area Special Area shall take effect on 1 May 2009, in accordance with the requirements set out in regulation 5(4)(b) of MARPOL Annex V;
2. ENCOURAGES Member Governments and industry groups to comply immediately on a voluntary basis with the Special Area requirements for the Mediterranean Sea area;
3. REQUESTS the Secretary-General to notify, in conformity with regulation 5(4)(b) of MARPOL Annex V, all Parties to MARPOL of the aforementioned decision by 30 April 2008; and
4. FURTHER REQUESTS the Secretary-General to notify all Members of the Organization of the aforementioned decision.

ANNEX 14

**REVISED WORK PROGRAMME OF THE BLG SUB-COMMITTEE
AND PROVISIONAL AGENDA FOR BLG 13**

PROPOSED REVISED WORK PROGRAMME OF THE BLG SUB-COMMITTEE

| Priority | Title and reference to strategic directions, high-level actions and planned outputs for 2008-2009 | Target completion date/number of sessions needed for completion | Reference |
|-----------------|---|--|---|
| 1 | <p>Evaluation of safety and pollution hazards of chemicals and preparation of consequential amendments</p> <p><i>Strategic Direction: 7.2 and 1.3</i> <i>High-level Action: 7.2.2 and 1.3.3</i> <i>Planned output: 7.2.2.1 and 1.3.3.1</i></p> | | BLG 10/19, section 3 BLG 11/16, section 3 |
| 2 | <p>Casualty analysis (co-ordinated by FSI)</p> <p><i>Strategic Direction: 12</i> <i>High-level Action: 12.1.2</i> <i>Planned output: 12.1.2.1 to .2</i></p> | Continuous | MSC 70/23, paragraphs 9.17 and 20.4; MSC 80/24, paragraph 21.6; BLG 11/16, section 12 |
| 3 | <p>Consideration of IACS unified interpretations</p> <p><i>Strategic Direction: 1</i> <i>High-level Action: 1.1.2</i> <i>Planned output: 1.1.2.1</i></p> | Continuous | MSC 78/26, paragraph 22.12; BLG 11/16, section 11 |
| H.1 | <p>Environmental and safety aspects of alternative tanker designs under MARPOL, Annex I, regulation 19</p> <p><i>Strategic Direction: 7.2</i> <i>High-level Action: 7.2.2</i> <i>Planned output: 7.2.2.1</i></p> | | BLG 3/18, paragraph 15.7 |
| | <p>.1 assessment of alternative tanker designs, if any (as necessary)</p> | Continuous | BLG 1/20, section 16; BLG 4/18, paragraph 15.3 |

Notes: 1 “H” means a high priority item and “L” means a low priority item. However, within the high and low priority groups, items have not been listed in any order of priority.

2 Items printed in bold letters have been selected for the provisional agenda for BLG 13.

| Priority | Title and reference to strategic directions, high-level actions and planned outputs for 2008-2009 | Target completion date/number of sessions needed for completion | Reference |
|----------|---|---|--|
| H.2 | <p>Development of provisions for gas-fuelled ships (in co-operation with FP and DE) <i>Strategic Direction:</i> 5.2 <i>High-level Action:</i> 5.2.1 <i>Planned output:</i> 5.2.1.1</p> | 2009 | MSC 78/26, paragraph 24.11; BLG 11/16, section 6 |
| H.3 | <p>Development of guidelines and other documents for uniform implementation of the 2004 BWM Convention <i>Strategic Direction:</i> 7.1 <i>High-level Action:</i> 7.1.2 <i>Planned output:</i> 7.1.2.2 to .5</p> | 2010 | MEPC 52/24, paragraph 2.21.6; |
| H.4 | <p>Application of the requirements for the carriage of bio-fuels and bio-fuel blends <i>Strategic Direction:</i> 7.2 <i>High-level Action:</i> 7.2.2 <i>Planned output:</i> 7.2.2.1</p> | 2009 | MEPC 55/23, paragraphs 19.4 and 19.5 BLG 12/17, section 4 |
| H.5 | <p>Development of international measures for minimizing the transfer of invasive aquatic species through bio-fouling of ships <i>Strategic Direction:</i> 7.1 <i>High-level Action:</i> 7.1.1 <i>Planned output:</i> -</p> | 2010 | MEPC 56/23, paragraph 19.12 |
| H.6 | <p>Review of the Recommendation for material safety data sheets for MARPOL Annex I cargoes and marine fuels <i>Strategic Direction:</i> 5.2 <i>High-level Action:</i> 5.2.3 <i>Planned output:</i> 5.2.3.1</p> | 2009 | BLG 12/17, section 12 |

| Priority | Title and reference to strategic directions, high-level actions and planned outputs for 2008-2009 | Target completion date/number of sessions needed for completion | Reference |
|----------|--|---|-----------------------------|
| H.7 | <p>Revision of the IGC Code (in co-operation with FP, DE, SLF and STW) <i>Strategic Direction:</i> 5.2 <i>High-level Action:</i> 5.2.1 <i>Planned output:</i> -</p> | 2010 | MSC 83/28, paragraph 25.7 |
| H.8 | <p>Safety requirements for natural gas hydrate pellet carriers <i>Strategic Direction:</i> 5.2 <i>High-level Action:</i> 5.2.1 <i>Planned output:</i> -</p> | 2011 | MSC 83/28, paragraph 25.6 |
| H.9 | <p>Review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NOx Technical Code <i>Strategic Direction:</i> 7.3 <i>High-level Action:</i> 7.3.1 <i>Planned output:</i> 7.3.1.1</p> | 2010 | BLG 12/17, paragraph 6.88.9 |
| H.10 | <p>Amendments to MARPOL Annex I on the use and carriage of heavy grade oil (HGO) on ships in the Antarctic area <i>Strategic Direction:</i> 7.2 <i>High-level Action:</i> 7.2.2 <i>Planned output:</i> None at present</p> | 2010 | BLG 12/17, paragraph 16.12 |

PROVISIONAL AGENDA FOR BLG 13*

- 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 Application of the requirements for the carriage of bio-fuels and bio-fuel blends
 - 5 Development of guidelines and other documents for uniform implementation of the 2004 BWM Convention
 - 6 Development of provisions for gas-fuelled ships
 - 7 Casualty analysis
 - 8 Consideration of IACS unified interpretations
 - 9 Development of international measures for minimizing the transfer of invasive aquatic species through bio-fouling of ships
 - 10 Review of the Recommendations for material safety data sheets for MARPOL Annex I cargoes and marine fuels
 - 11 Revision of the IGC Code
 - 12 Safety requirements for natural gas hydrate pellet carriers
 - 13 Review of relevant non-mandatory instruments as a consequence of the amended MARPOL Annex VI and the NOx Technical Code
 - 14 Amendments to MARPOL Annex I on the use and carriage of heavy grade oil (HGO) on ships in the Antarctic area
 - 15 Work programme and agenda for BLG 13
 - 16 Election of Chairman and Vice-Chairman for 2009
 - 17 Any other business
 - 18 Report to the Committees

* Agenda item numbers do not necessarily indicate priority.

ANNEX 15

**REVISED WORK PROGRAMME OF THE FSI SUB-COMMITTEE AND
PROVISIONAL AGENDA FOR FSI 16**

| | | Target completion date/number of sessions needed for completion | Reference |
|---|--|--|--|
| 1 | Mandatory reports under MARPOL | Continuous | MSC 70/23, paragraph 20.12.1; MEPC 56/23, paragraph 14.4; FSI 15/18, section 4 |
| 2 | Casualty statistics and investigations | Continuous | MSC 68/23, paragraphs 7.16 to 7.24; FSI 15/18, section 6 |
| 3 | Harmonization of port State control activities | Continuous | MSC 71/23, paragraph 20.16; MSC 80/24, paragraph 21.16; FSI 15/18, section 7 |
| 4 | Responsibilities of Governments and measures to encourage flag State compliance | Continuous | MSC 68/23, paragraphs 7.2 to 7.8; FSI 15/18, section 3 |
| 5 | Comprehensive analysis of difficulties encountered in the implementation of IMO instruments | Continuous | MSC 69/22, paragraph 20.28; FSI 8/19, paragraph 4.3; FSI 15/18, section 11 |
| 6 | Review of the Survey Guidelines under the HSSC (resolution A.948(23)) | Continuous | MSC 72/23, paragraph 21.27; FSI 15/18, section 12 |
| 7 | Consideration of IACS unified interpretations | Continuous | MSC 78/26, paragraph 22.12; FSI 15/18, section 13 |
| 8 | Review of the Code for the Implementation of Mandatory IMO Instruments | Continuous | MSC 83/28, paragraph 25.27 |

Notes:

- 1 “H” means a high priority item and “L” means a low-priority item. However, within the high and low priority groups, items have not been listed in any order of priority.
- 2 Items printed in bold letters have been selected for the provisional agenda for FSI 16.

Sub-Committee on Flag State Implementation (FSI) (continued)

| | | Target completion date/number of sessions needed for completion | Reference |
|-----|---|--|--|
| H.1 | PSC guidelines on seafarers' working hours | 2009 | MSC 70/23, paragraph 20.12.3; FSI 15/18, paragraph 10.5 |
| H.2 | Illegal, unregulated and unreported (IUU) fishing and implementation of resolution A.925(22) | 2008 | MSC 72/23, paragraph 21.28; FSI 10/17, section 11; MSC 75/24, paragraphs 13.11 and 22.25.3; FSI 15/18, section 14 |
| H.3 | Development of guidelines on port State control under the 2004 BWM Convention | 2008 | MEPC 52/24, paragraph 2.21.2; FSI 15/18, section 9 |
| H.4 | Port reception facilities-related issues | 2010 | MEPC 53/24, paragraph 9.7; FSI 15/18, section 5 |
| H.5 | Code of conduct during demonstrations/campaigns against ships on high seas (co-ordinated by NAV) | 2 sessions | MSC 82/24, paragraph 21.26 |

PROVISIONAL AGENDA FOR FSI 16*

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Responsibilities of Governments and measures to encourage flag State compliance
 - 4 Mandatory reports under MARPOL
 - 5 Port reception facilities-related issues
 - 6 Casualty statistics and investigations
 - 7 Harmonization of port State control activities
 - 8 Development of guidelines on port State control under the 2004 BWM Convention
 - 9 PSC Guidelines on seafarers' working hours
 - 10 Comprehensive analysis of difficulties encountered in the implementation of IMO instruments
 - 11 Review of the Survey Guidelines under the HSSC (resolution A.948(23))
 - 12 Consideration of IACS Unified Interpretations
 - 13 Illegal, unregulated and unreported (IUU) fishing and implementation of resolution A.925(22)
 - 14 Review of the Code for the Implementation of Mandatory IMO Instruments
 - 15 Work programme and agenda for FSI 17
 - 16 Election of Chairman and Vice-Chairman for 2009
 - 17 Any other business
 - 18 Report to the Committees

* Agenda item numbers do not necessarily indicate priority.

ANNEX 16

**WORK PROGRAMME ITEMS OF THE DSC, NAV AND DE SUB-COMMITTEES
WHICH RELATE TO ENVIRONMENTAL ISSUES**

SUB-COMMITTEE ON DANGEROUS GOODS, SOLID CARGOES AND CONTAINERS (DSC)

| | | Target completion date/number of sessions needed for completion | Reference |
|-----|---|--|--|
| 2 | Reports on incidents involving dangerous goods or marine pollutants in packaged form on board ships or in port areas | Continuous | CDG 45/22, section 11 and paragraph 20.2; DSC 11/19, section 6 |
| H.1 | Amendments (35-10) to the IMDG Code and supplements | 2009 | DSC 3/15, paragraph 12.6; DSC 12/19, section 3 |

SUB-COMMITTEE ON SAFETY OF NAVIGATION (NAV)

| | | Target completion date/number of sessions needed for completion | Reference |
|------|--|--|---|
| 1 | Routeing of ships, ship reporting and related matters | Continuous | MSC 72/23, paragraphs 10.69 to 10.71, 20.41 and 20.42; NAV 53/22, section 3 |
| H.10 | Amendments to the General Provisions on Ships' Routeing | 2008 | MSC 82/24, paragraph 21.34 |

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT (DE)

| | | Target completion date/number of sessions needed for completion | Reference |
|-----|---|--|--|
| H.1 | Amendments to resolution A.744(18) | 2008 | DE 45/27 paragraphs 7.18 and 7.19; DE 50/27, section 3 |
| L.3 | Guidelines on equivalent methods to reduce on-board NOx emission | 2 sessions | MEPC 41/20, paragraph 8.22.1; BLG 10/19, paragraph 12.3; MEPC 55/23, paragraph 19.9 |

ANNEX 17

**ITEMS TO BE INCLUDED IN THE AGENDAS
FOR MEPC 58, MEPC 59 AND MEPC 60**

| No. | Item | MEPC 58 October 2008 | MEPC 59 July 2009 | MEPC 60 March 2010 |
|------------|---|---------------------------------|------------------------------|-------------------------------|
| 1 | Harmful aquatic organisms in ballast water | RG X | [RG] X | X |
| 2 | Recycling of ships | DG X | X | X |
| 3 | Prevention of air pollution from ships | WG X | [WG] X | [WG] X |
| 4 | Consideration and adoption of amendments to mandatory instruments | DG X | [X] | [X] |
| 5 | Interpretations of and amendments to MARPOL and related instruments | X | X | X |
| 6 | Implementation of the OPRC Convention and the OPRC-HNS Protocol and relevant Conference resolutions | X | X | X |
| 7 | Identification and protection of Special Areas and PSSAs | X | X | X |
| 8 | Inadequacy of reception facilities | X | X | X |
| 9 | Reports of sub-committees | X | X | X |
| 10 | Work of other bodies | X | X | X |
| 11 | Status of Conventions | X | X | X |
| 12 | Harmful anti-fouling systems for ships | X | X | X |

| No. | Item | MEPC 58 October 2008 | MEPC 59 July 2009 | MEPC 60 March 2010 |
|-----|---|-------------------------|----------------------|-----------------------|
| 13 | Promotion of implementation and enforcement of MARPOL and related instruments | X | X | X |
| 14 | Technical Co-operation Sub-programme for the Protection of the Marine Environment | X | X | X |
| 15 | Role of the human element | X | [WG] X | X |
| 16 | Formal safety assessment | X | [X] | [X] |
| 17 | Development of a guidance document for minimizing the risk of ship strikes with cetaceans | X | X | X |
| 18 | Work programme of the Committee and subsidiary bodies | X | X | X |
| 19 | Application of the Committees' Guidelines | X | [X] | [X] |
| 20 | Election of the Chairman and Vice-Chairman | X | X | |
| 21 | Any other business | X | X | X |

ANNEX 18

**AMENDMENTS TO THE GUIDELINES ON THE ORGANIZATION AND METHOD
OF WORK OF THE MARITIME SAFETY COMMITTEE AND THE MARINE
ENVIRONMENT PROTECTION COMMITTEE AND THEIR SUBSIDIARY BODIES
(MSC-MEPC.1/CIRC.1)**

The Committees' Guidelines are amended as follows (new and amended text is shaded):

Working groups

1 The existing paragraph 3.29 is replaced by the following:

“3.29 In principle, there should be no splinter group(s) of a working group. However, where the establishment of a splinter group(s) is necessary for the facilitation and efficiency of the work, the working groups should have a unanimous agreement on its establishment and the outcome of the group(s) work should be considered and agreed by members of the working group and incorporated in the report of the working group. Splinter group(s), if established, should meet outside normal working hours, unless the working group decides otherwise in view of the efficiency of the work.”

Intersessional working groups

2 The existing paragraph 3.46 is replaced by the following:

“3.46 Subject to approval by the Council, intersessional meetings of working groups may be convened without interpretation services. Intersessional meetings should only be held if considered to be absolutely essential and after careful consideration of their need by the Committee(s) on a case-by-case basis, taking into account the priority and urgency of the specific matter such meetings will be invited to address. Intersessional meetings of such groups should be held at IMO Headquarters immediately before or after an agreed session of the parent body concerned. Other arrangements may be considered; however, no arrangements should be made with respect to intersessional meetings until such meetings have been approved by the Committee(s). Intersessional working groups and technical groups should not be held at the same time as Committee or sub-committee meetings.”

Preparation of documents

3 The existing subparagraph .1 of paragraph 4.1 is replaced by the following (see Circular letter No.2831):

“.1 all documents should be preceded by a brief summary prepared in the form, and containing the information indicated in the box set out below. Documents – especially proposals for new work programme items – should demonstrate, where feasible, the linkages to the Strategic and High-level Action Plans by including, in the summary, references to the related strategic direction(s), high-level action(s) and planned output(s):

SUMMARY

| | |
|------------------------------------|---|
| <i>Executive summary:</i> | This description should be brief, outlining the proposed objective (an Assembly resolution, a circular, information only, etc.), and include information on whether a proposal will have any financial implications for the shipping industry or for the IMO budget. |
| <i>Strategic direction:</i> | A reference should be made to one or more relevant strategic directions in the Organization's Strategic Plan (see the annex to resolution A.989(25) or the annex to resolution A.990(25)). |
| <i>High-level action:</i> | A reference should be made to one or more corresponding high-level actions in the Organization's High-level Action Plan (see the annex to resolution A.990(25)). |
| <i>Planned output:</i> | A reference should be made to one or more corresponding planned outputs for 2008-2009, in the Organization's High-level Action Plan (see the annex to resolution A.990(25)). If there is no corresponding planned output, an appropriate descriptive text should be included. |
| <i>Action to be taken:</i> | A reference should be made to the paragraph of the document which states the action to be taken by the Committee, Sub-Committee, etc. |
| <i>Related documents:</i> | Other key documents should be listed to the extent they are known to the originator of the document." |

Submission of documents

4 The existing subparagraph .3 of paragraph 4.10 is replaced by the following:

“.3 documents (including information documents) containing more than 6 pages of text (bulky documents) should be received by the Secretariat not later than 13 weeks before the opening of any session of the Committee(s) and their subsidiary bodies. However, bulky information documents, submitted in electronic format, may be accepted by the Secretariat, if they are received not later than 9 weeks before the meeting concerned. They should be made available at IMO Headquarters and the IMO documents website, in the Organization's three working languages, except for information documents which should not be translated, not later than 5 weeks before the opening of the session;”