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EQUIPMENT
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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

1.1 The Sub-Committee on Ship Design and Equipment (DE) held its fifty-sixth session from 13 to 17 February 2012 under the chairmanship of Mrs. A. Jost (Germany). The Vice-Chairman, Dr. S. Ota (Japan), was also present.

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

ANGOLA	LATVIA
ANTIGUA AND BARBUDA	LIBERIA
ARGENTINA	LIBYA
AUSTRALIA	LITHUANIA
AZERBAIJAN	MALAYSIA
BAHAMAS	MALTA
BELGIUM	MARSHALL ISLANDS
BRAZIL	MEXICO
CANADA	MOROCCO
CHILE	NETHERLANDS
CHINA	NEW ZEALAND
COLOMBIA	NIGERIA
COOK ISLANDS	NORWAY
CROATIA	PANAMA
CUBA	PERU
CYPRUS	PHILIPPINES
DENMARK	POLAND
DOMINICA	REPUBLIC OF KOREA
DOMINICAN REPUBLIC	RUSSIAN FEDERATION
EGYPT	SAUDI ARABIA
FINLAND	SINGAPORE
FRANCE	SOUTH AFRICA
GERMANY	SPAIN
GHANA	SWEDEN
GREECE	THAILAND
ICELAND	TURKEY
INDIA	TUVALU
INDONESIA	UKRAINE
IRAN (ISLAMIC REPUBLIC OF)	UNITED KINGDOM
IRELAND	UNITED STATES
ITALY	VANUATU
JAPAN	VENEZUELA
KIRIBATI	(BOLIVARIAN REPUBLIC OF)

and the following Associate Members of IMO:

FAROEES
HONG KONG, CHINA

1.3 The session was also attended by observers from the following intergovernmental organizations:

EUROPEAN COMMISSION (EC)
MARITIME ORGANISATION FOR WEST AND CENTRAL AFRICA (MOWCA)

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

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
BIMCO
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
ICHCA INTERNATIONAL (ICHCA)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL MARITIME PILOTS' ASSOCIATION (IMPA)
FRIENDS OF THE EARTH INTERNATIONAL (FOEI)
INTERNATIONAL ASSOCIATION OF DRILLING CONTRACTORS (IADC)
INTERNATIONAL COUNCIL OF MARINE INDUSTRY ASSOCIATIONS (ICOMIA)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)
INTERNATIONAL LIFESAVING APPLIANCES MANUFACTURERS'
ASSOCIATION (ILAMA)
COMMUNITY OF EUROPEAN SHIPYARDS' ASSOCIATIONS (CESA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS
(INTERTANKO)
SOCIETY OF INTERNATIONAL GAS TANKER AND TERMINAL OPERATORS
LIMITED (SIGTTO)
INTERNATIONAL MARITIME RESCUE FEDERATION (IMRF)
CRUISE LINES INTERNATIONAL ASSOCIATION (CLIA)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS
(INTERCARGO)
WORLD WIDE FUND FOR NATURE (WWF)
THE INSTITUTE OF MARINE ENGINEERING, SCIENCE AND TECHNOLOGY
(IMarEST)
INTERNATIONAL SHIP MANAGERS' ASSOCIATION (InterManager)
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS (RINA)
INTERFERRY
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
INTERNATIONAL PAINT AND PRINTING INK COUNCIL (IPPIC)
NACE INTERNATIONAL
THE NAUTICAL INSTITUTE (NI)
PACIFIC ENVIRONMENT
CLEAN SHIPPING COALITION (CSC)
SUPERYACHT BUILDERS ASSOCIATION (SYBAss)

Opening address of the Secretary-General

1.4 The Secretary-General welcomed participants and informed the Sub-Committee of his vision of the direction of the Organization following his inauguration as the new holder of the office. With regard to the meeting, he mentioned, in particular, the development of a mandatory Code for ships operating in polar waters, the development of performance standards for recovery systems for all types of ships and making the provisions of MSC.1/Circ.1206/Rev.1 on Measures to prevent accidents with lifeboats mandatory and wished the Sub-Committee all success in its deliberations. He also referred to another important item, i.e. the development of a new framework of requirements for life-saving appliances, and its increased importance in the wake of the **Costa Concordia** accident.

1.5 With respect to wider issues, he informed the Sub-Committee that he had recently met with the United Nations Secretary-General, Mr. Ban Ki-moon, at the United Nations Headquarters in New York, and had discussed matters related to IMO's work and enhanced cooperation between the UN and IMO, in particular concerning combating Somalia-based piracy. In this regard, the Secretary-General informed the Sub-Committee of a Conference on Capacity-building to counter piracy off the coast of Somalia, scheduled to be held on 15 May 2012 at IMO Headquarters, as well as his intention to promote a high-level policy debate on arms on board ships, to take place on the first day of the forthcoming Maritime Safety Committee meeting (MSC 90), to be held from 16 to 25 May 2012. He encouraged high-level participation by IMO Member Governments in these events.

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

1.7 He also informed the Sub-Committee that, following consultations with the Chairman of the Maritime Safety Committee, he had decided to include an item on "Passenger ship safety" in the Committee's agenda for MSC 90, in order to provide an opportunity for IMO Members and international organizations to consider any issues arising in regard to the safety of passenger ships.

Chairman's remarks

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

Adoption of the agenda

1.9 The Sub-Committee adopted the agenda (DE 56/1/Rev.1) and agreed, in general, to be guided in its work by the annotations to the provisional agenda contained in document DE 56/1/1. The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document DE 56/INF.16.

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the outcome of MSC 89, NAV 57, MEPC 62, FP 55, DSC 16 and A 27 relevant to the work of the Sub-Committee, as reported in documents DE 56/2, DE 56/2/1 and DE 56/2/2 and took them into account in its deliberations when dealing with relevant agenda items.

2.2 The Sub-Committee noted, in particular, that the twenty-seventh regular session of the Assembly had adopted the Strategic Plan for the Organization (for the six-year period 2012 to 2017) (resolution A.1037(27)) and the High-level Action Plan of the Organization and Priorities for the 2012-2013 Biennium (resolution A.1038(27)) (see also paragraph 20.1).

3 DEVELOPMENT OF PERFORMANCE STANDARDS FOR RECOVERY SYSTEMS FOR ALL TYPES OF SHIPS

General

3.1 The Sub-Committee recalled that DE 55 had decided to further consider the draft Performance standards for recovery capability for all types of ships and the associated draft new SOLAS regulation III/17-1 (Recovery arrangements for rescuing persons) at this session, using documents DE 55/WP.7 and DE 55/4/1 (paragraph 6) as the basis for further consideration.

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

- .1 DE 56/3 (Australia, Iceland, New Zealand, Papua New Guinea, United Kingdom, IMRF), providing draft performance standards for recovery capability for all types of ships with functional requirements and draft revised text for the proposed SOLAS regulation III/17-1 requiring recovery capabilities for all types of ships;
- .2 DE 56/3/1 (OCIMF), expressing concerns over the use of ships' equipment, e.g. lifting appliances and winches, outside their design parameters, with personnel lacking appropriate training and without properly assessing likely risks or potential consequences, and proposing that a full and comprehensive assessment of risk should be conducted by the ship before each man lifting operation is undertaken;
- .3 DE 56/3/2 (Dominica, Liberia, Marshall Islands, ICS, BIMCO, CLIA, INTERCARGO, INTERTANKO, IFSMA, IMCA, IPTA, Nautical Institute, OCIMF), commenting on the draft proposed SOLAS regulation III/17-1 and the draft performance standard (DE 56/3) and proposing various amendments thereon; and
- .4 DE 56/3/3 (Sweden), commenting on vague expressions in the proposed SOLAS regulation III/17-1 (DE 56/3) and proposing to delete paragraph 2.2 of the draft regulation, so that all new and existing ships shall fulfil the proposed functional requirements, in order to avoid inclusion of vague expressions that are open to interpretation in mandatory text.

3.3 While many delegations supported the draft performance standards proposed in annex 2 to document DE 56/3, many other delegations, while supporting the draft standards in principle, expressed concerns with regard to the proposal, citing, in particular, difficulties for large ships to comply with functional requirements regarding 3 m significant wave height and the verification of recovery capabilities by Administrations. Other delegations expressed concern regarding the use of ships' lifting appliances and winches for recovery purposes, as proposed by OCIMF (DE 56/3/1).

3.4 Concerning the associated SOLAS amendments to make the standards mandatory (DE 56/3, annex 1), some delegations supported the deletion of paragraph 2.2 of the draft SOLAS regulation III/17-1, while some other delegations pointed out that this would cause difficulties with the application of the standards to existing equipment.

3.5 After an extensive discussion, the delegation of the Bahamas, in order to remove obstacles in applying the current draft performance standards and the draft SOLAS regulation III/17-1, proposed that the draft regulation should require plans and procedures for recovery of persons, referring to guidelines to be developed, instead of mandatory performance standards. While many delegations supported the proposal as a way forward, others stated that new ships should be required to have recovery capabilities in accordance with performance standards, and that the guidelines should apply to existing ships only.

Establishment of a working group

3.6 Subsequently, the Sub-Committee established a Working Group on Recovery of Persons from the Water and instructed it, on the basis of document DE 56/3 and taking into account documents DE 56/3/1, DE 56/3/2 and DE 56/3/3 and comments and decisions made in plenary, to:

- .1 finalize the provisions for recovery capability for all types of ships (e.g. preparing draft performance standards and/or guidelines), in particular considering mandatory and non-mandatory applicability of such recovery capability to new and existing ships; and
- .2 finalize the associated draft SOLAS regulation III/17-1.

Report of the working group

3.7 Having considered the report of the working group (DE 56/WP.6), the Sub-Committee approved it in general and took action as described in the following paragraphs.

Draft SOLAS regulation on Plans and procedures for recovery of persons from the water

3.8 The Sub-Committee considered the draft SOLAS regulation on Plans and procedures for recovery of persons from the water (DE 56/WP.6, annex 1) and, having discussed whether the aforementioned regulation should be incorporated in SOLAS chapter III or V, agreed to include it in SOLAS chapter III, taking into account that the proposed regulation is a life-saving provision which will require life-saving appliances to be used for recovery operations. Subsequently, the Sub-Committee agreed to draft SOLAS regulation III/17-1, as set out in annex 1, for submission to MSC 90 for approval with a view to subsequent adoption.

3.9 Having decided to incorporate the above draft regulation in SOLAS chapter III, the Sub-Committee, recognizing that ships coming to rescue persons from the water are not limited to those on international voyages, and considering annex 2 to document DE 56/WP.6, agreed to the draft MSC resolution on Application of SOLAS regulation III/17-1 to ships other than those engaged in international voyages, as set out in annex 2, for submission to MSC 90 for approval, in principle, with a view to subsequent adoption in conjunction with the adoption of the associated SOLAS regulation.

Draft guidelines for recovery of persons from the water for all types of ships

3.10 The Sub-Committee noted that the group, having considered the proposals in annex 2 of document DE 56/3, had decided to prepare draft guidelines in lieu of performance standards for recovery capability for all types of ships (DE 56/WP.6, annex 3). Having endorsed the group's decision, the Sub-Committee agreed to a draft MSC circular on Guidelines for development of plans and procedures for recovery of persons from the water, as set out in annex 3, for submission to MSC 90 for approval in principle, with a view to final approval in conjunction with the adoption of the associated SOLAS regulation (see paragraph 3.8).

3.11 Notwithstanding the above decision, the Sub-Committee, noting that the proposed weight of 82.5 kg/person stipulated in the draft Guidelines is used for the purpose of cargo ship survival and rescue craft in dry conditions and, as such, may not be sufficient for recovery systems where persons recovered would be in wet conditions, invited Member States and international organizations to submit any investigation results concerning the capacity of recovery equipment directly to the Committee, for its consideration when approving the draft Guidelines.

3.12 The Sub-Committee, generally supporting a relevant statement by the observer from IACS, invited the Committee to concur that it was not intended that compliance with these provisions would be verified, in terms of updates to the emergency preparedness plan required by paragraph 8 of part A of the ISM Code, until after the relevant application date as provided in paragraph 1 of the draft SOLAS regulation III/17-1. In addition, the Sub-Committee also invited the Committee to concur that the surveys referred to in the draft regulation III/17-1 are those related to the certificates issued in relation to SOLAS chapter III.

Completion of the work on this output

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

4 DEVELOPMENT OF AMENDMENTS TO SOLAS REGULATION II-1/40.2 CONCERNING GENERAL REQUIREMENTS ON ELECTRICAL INSTALLATIONS

4.1 The Sub-Committee noted that MSC 86, having considered document MSC 86/23/14 (Denmark, Faroes (the)), proposing to develop amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations, had agreed to include this output in the post-biennial agenda of the Committee and that MSC 89 had included it in the biennial agenda of the Sub-Committee.

4.2 The Sub-Committee considered document DE 56/4 (Denmark, Faroes (the)), proposing to amend SOLAS regulation II-1/40.2 to ensure that electrical installations on board ships are approved and maintained according to relevant and recognized electrical standards, in order to provide a sufficient safety level and protection against fire on board ships.

4.3 During the discussion, many delegations, acknowledging that the issue arose from a fire on a fishing vessel and thus was not covered by SOLAS requirements, raised various concerns with regard to the proposed SOLAS amendment, including the relationship to SOLAS regulation II-1/3-1, requiring that ships shall be designed, constructed and maintained in compliance with the structural, mechanical and electrical requirements of a classification society and to SOLAS regulations I/6 to 8 regarding surveys; the difficulty for the Administration to ensure that electrical equipment is suitable for use on board ships and

is approved and maintained; and whether there was a compelling need to amend SOLAS regulations based on the investigation into an accident on a non-SOLAS vessel.

4.4 At the same time, the Sub-Committee noted that the proposal to address the issue of electrical installations on ships being fit for purpose was generally supported and recognized the need to further consider the matter, taking into account the concerns raised, in particular, the scope of application of the proposed amendments (new/existing ships), their location in the SOLAS Convention and maintenance issues. The Sub-Committee also noted that consequential amendments to the HSSC Guidelines may be necessary to address the problem, acknowledging the possibility that such amendments might be sufficient, without the need for amendments to SOLAS.

4.5 Consequently, the Sub-Committee invited Member States and international organizations to submit comments and proposals on the issue to DE 57.

5 MAKING THE PROVISIONS OF MSC.1/CIRC.1206/REV.1 MANDATORY

General

5.1 The Sub-Committee recalled that DE 55, while supporting, in principle, making the provisions of MSC.1/Circ.1206/Rev.1 (Measures to prevent accidents with lifeboats) and MSC.1/Circ.1277 (Interim Recommendation on conditions for authorization of service providers for lifeboats, launching appliances and on-load release gear) mandatory, had recognized the need for more information on the global coverage by independent life-saving appliance (LSA) service providers and agreed to further consider the issue at this session, in particular how to make the provisions mandatory and whether the two above circulars should be merged into one instrument.

5.2 The Sub-Committee also recalled that MSC 89, in approving the draft amendments to SOLAS regulation III/20.11.2 concerning the testing of free-fall lifeboat release systems, having noted that the Sub-Committee had agreed on the need for their early implementation, had requested the Secretariat to prepare a draft MSC circular on the early implementation of the amendments to SOLAS regulation III/20.11.2, for consideration at MSC 90, in conjunction with the adoption of the draft amendments.

5.3 The Sub-Committee noted that MSC 89 had adopted amendments to SOLAS regulation III/1.5 and the LSA Code concerning the assessment of lifeboat on-load release mechanisms and had approved the associated Guidelines for evaluation and replacement of lifeboat release and retrieval systems (MSC.1/Circ.1392).

Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory

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

- .1 DE 56/5/2 (Germany), providing information on experience gained in Germany with using MSC.1/Circ.1206/Rev.1 and suggesting that there is a need to make the circular mandatory in a timely manner, since the application of mandatory measures to prevent accidents with LSA is of utmost importance for having harmonized standards for seafarers and all parties involved; and
- .2 DE 56/5/4 (ILAMA), proposing amendments to MSC.1/Circ.1206/Rev.1 since ILAMA members have experienced that some paragraphs in the guidelines are causing practical problems.

5.5 In considering the above documents, the Sub-Committee noted that there was substantive support for making some parts of the provisions of MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277 mandatory, especially taking into account the three months' window for the annual service, as proposed in document DE 56/5/2. At the same time, many delegations expressed concerns since, according to their experience, coverage of LSA service providers is not sufficient in some regions and varies considerably depending on ship types. In this regard, the observer from IACS urged the Sub-Committee, when considering if elements of these circulars should be made mandatory, to take into account that such a decision would necessitate the development of clear, unambiguous and globally implementable criteria for accepting such service providers.

5.6 With regard to the proposals by ILAMA (DE 56/5/4), while many delegations supported the proposal to amend paragraph 12 of MSC.1/Circ.1206/Rev.1, the majority of delegations who spoke did not support the proposal to include a new paragraph 16, because they were of the view that decisions concerning the completion of the work during inspections should be taken by the Administration and not by the company.

Instructions to the LSA Working Group

5.7 Having considered the above documents, the Sub-Committee instructed the LSA Working Group, established under agenda item 6 (see paragraph 6.4), to further consider how to proceed with making MSC.1/Circ.1206/Rev.1 mandatory; how, and if, MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277 should be amalgamated; which parts of the amalgamated text should be mandatory; and which SOLAS regulation should be amended to make the provisions mandatory (see paragraph 5.17).

Early implementation of the amendments to SOLAS regulation III/20.11.2

5.8 The Sub-Committee, having considered document DE 56/5 (Secretariat), providing a draft MSC circular on Early implementation of the amendments to SOLAS regulation III/20.11.2, agreed to the draft MSC circular, as set out in annex 4, for submission to MSC 90 for approval in conjunction with the adoption of amendments to SOLAS regulation III/20.11.2 scheduled for that session.

Accident on *Baltic Champion*

5.9 The Sub-Committee considered documents DE 56/5/1 and DE 56/INF.5 (OCIMF), which provided information on an accident on **Baltic Champion** relating to the loss of a rescue boat, based on a flag State investigation by the Isle of Man Administration, and highlighted the identification of vibration as one of the causes of the accident, requesting that the issue of vibration of life-saving launch, recovery and retrieval systems may require further consideration.

5.10 Many observers from industry associations welcomed the submission, stating that the issue of vibration should be further considered to improve the safety of lifeboat release and retrieval systems; however, other delegations expressed concerns, stating that vibration may not be the primary cause of lifeboat accidents and that a more detailed consideration of the issue was needed.

5.11 Subsequently, the Sub-Committee invited Member States and international organizations to submit concrete proposals on the matter to DE 57.

Guidelines for evaluation and replacement of lifeboat release and retrieval systems (MSC.1/Circ.1392)

Proposed amendments to the Guidelines

5.12 The Sub-Committee considered document DE 56/5/3 (ILAMA), proposing amendments to the Guidelines for evaluation and replacement of lifeboat and retrieval systems (MSC.1/Circ.1392) referred to in SOLAS regulation III/1.5, concerning release test, load test and towing test, since ILAMA members had experienced that the relevant paragraphs in the Guidelines were causing practical problems constituting potential hazards.

5.13 Many delegations supported the proposal to amend paragraph 24.1 (release test) of the Guidelines; however, the majority of the delegations did not support the proposals to amend paragraphs 24.2 (load test) and 24.3 (towing test).

5.14 Consequently, the Sub-Committee, recognizing that the Guidelines had already been implemented and that further amendments at this stage would cause confusion with regard to their implementation, agreed to the following view regarding paragraph 24.1 of the Guidelines for evaluation and replacement of lifeboat and retrieval systems (MSC.1/Circ.1392):

"During the 1.1 x load and simultaneous release test according to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)), part 2, paragraph 5.3.1, or an equivalent method acceptable to the Administration, it should be ensured that not only the hook assembly but also the fixed structural connections of the release mechanism of the lifeboat will be subjected to the test load."

and invited MSC 90 to endorse the above view.

New GISIS module

5.15 The Sub-Committee considered document DE 56/5/5 (Secretariat), providing information on a new GISIS module for recording the results of the evaluation of existing lifeboat release and retrieval systems, and, with regard to the access rights for viewing the results of evaluations, asking the Sub-Committee's opinion, taking into account that the reporting should be restricted to Administrations as stipulated in the Guidelines, on whether viewing the results of evaluations may need to be expanded to recognized organizations or all relevant parties in order to achieve a harmonized implementation.

5.16 Following discussion, the Sub-Committee agreed that viewing the results of evaluations of existing lifeboat release and retrieval systems, as contained in the new GISIS module, should be open to the public; requested the Secretariat to take action, as appropriate; and invited the Committee to endorse this decision.

Report of the LSA Working Group

5.17 Having considered the part of the report of the LSA Working Group (DE 56/WP.3) dealing with the agenda item, the Sub-Committee took action as described in the following paragraphs.

Worldwide network of lifeboat service providers

5.18 In considering matters related to a new mandatory instrument on requirements for the periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear, the Sub-Committee noted the group's discussion on the availability of lifeboat service providers and its view that there was a need for an appropriate worldwide lifeboat service network as a vital prerequisite for such mandatory instrument.

5.19 The Sub-Committee, taking into account the group's deliberations on the worldwide lifeboat service network as outlined in the previous paragraph, endorsed, in principle, the group's recommendation to provide for some flexibility for lifeboat servicing as part of the development of a mandatory instrument deriving from the amalgamation of MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277.

5.20 Having noted the group's discussion on potential difficulties with the setting up a database of independent lifeboat service providers and on inviting Member States to provide the Organization with details of such service providers serving their flag, the Sub-Committee agreed that no further action should be taken in this respect.

Amalgamation of MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277

5.21 The Sub-Committee agreed, in principle, to the development of a new non-mandatory circular containing those issues of MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277 that are of recommendatory nature.

5.22 Having considered the group's discussion on the scope of application of the new mandatory instrument, the Sub-Committee instructed the correspondence group to limit the scope to lifeboats, rescue boats and fast rescue boats, launching appliances and release gears for those boats and for liferafts. The Sub-Committee, noting a concern that this would expand the scope of the current exercise, invited the Committee to endorse this course of action.

5.23 In considering all of the aforementioned matters, the Sub-Committee agreed, in principle, to the first draft of a new mandatory instrument amalgamating MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277 in the form of a draft MSC resolution on Requirements for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear, as set out in annex 1 to document DE 56/WP.3.

Establishment of the LSA Correspondence Group

5.24 The Sub-Committee, taking into account the progress made at this session and the remaining work still pending, established the LSA Correspondence Group, under the coordination of Japan*, and instructed it, taking into account the comments made and

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decisions taken at DE 56 (see also paragraphs 6.17, 8.4 and 15.4 for additional terms of reference for the group), to:

- .1 further develop the draft MSC resolution on Requirements for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (DE 56/WP.3, annex 1), based on MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277, and prepare associated draft amendments to SOLAS chapter III to make the resolution mandatory, taking into account:
 - .1 the possible conflict of mandating requirements that are not mandatory in SOLAS or the LSA Code (e.g. installation testing);
 - .2 the possible overlap in SOLAS chapter III;
 - .3 flexibility for servicing of lifeboats in locations where no suitable service provider is available;
 - .4 decisions made by the Sub-Committee in relation to the scope of application of the new resolution to liferafts, fast rescue boats and rescue boats;
 - .5 the mandatory character of the draft text which should be reflected in the appropriate use of IMO terminology; and
 - .6 those areas that could remain non-mandatory and that are to be included in a revised circular; and
- .2 submit a report to DE 57.

6 DEVELOPMENT OF A NEW FRAMEWORK OF REQUIREMENTS FOR LIFE-SAVING APPLIANCES

6.1 The Sub-Committee recalled that DE 54 had supported the proposals with regard to the development of a new framework of requirements for life-saving appliances contained in documents DE 54/10 and DE 54/10/1 (Japan) and that DE 55, having acknowledged that further in-depth consideration of the matter was necessary, had agreed to establish a working group at this session to further develop the draft framework.

6.2 In this connection, the Sub-Committee noted that MSC 89, when adopting amendments to SOLAS regulation III/1.5 and the LSA Code and approving the associated Guidelines for evaluation and replacement of lifeboat release and retrieval systems (MSC.1/Circ.1392), instructed the Sub-Committee to consider remaining issues related to the safety of lifeboat release and retrieval systems under this agenda item (see paragraph 6.7.1).

6.3 The Sub-Committee also noted that MSC 89 had instructed it to consider IACS Unified Interpretation SC 233 regarding the implementation of paragraph 1.2.2.6 of the LSA Code concerning the exterior colour of lifeboats under this agenda item (see paragraphs 6.10 and 6.11).

New framework of requirements for life-saving appliances

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

- .1 DE 56/6/1 (Denmark, Finland, Japan, Netherlands, Norway, Sweden, United Kingdom), providing draft goal-based guidelines on a framework of requirements for ships' LSA (Tiers I, II and III) and requesting the Sub-Committee to invite the Committee to consider the matter under its item on goal-based standards, for further instruction on how to proceed with the matter;
- .2 DE 56/6/3 (Germany), commenting on the new framework for requirements of LSA (DE 56/6/1) and suggesting a continuation of the work under this agenda item, by reviewing and restructuring the LSA Code and SOLAS chapter III (Tier IV), according to the Tier I and Tier II specifications;
- .3 DE 56/6/4 (INTERCARGO), informing that they had commissioned a human factors study into the evacuation of bulk carriers, identifying familiarization and equipment as the most pertinent matters, with the intention to conduct further work to understand in more detail the nature and breadth of these issues; and
- .4 DE 56/6/5 (RINA) informing of the intention of RINA to submit an information document to DE 57 on the review of the LSA accident data for incidents in United Kingdom waters between 2001 and 2011.

6.5 With regard to the development of a new framework of requirements for LSA, the Sub-Committee agreed to instruct the LSA Working Group to further consider the matter, including the finalization of the draft goal-based guidelines on a framework of requirements for ships' LSA. In this context, some delegations suggested that the Committee should consider whether to continue the restructuring of the LSA Code and SOLAS chapter III under the current agenda item.

6.6 With respect to the human element, the majority of the delegations supported that familiarization and standardization of LSAs should be included in any future functional requirements for LSA.

Safety of lifeboat release and retrieval systems

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

- .1 DE 56/6 (Secretariat), informing that MSC 89, noting concerns that further work was needed on matters related to the safety of lifeboat release and retrieval systems, in particular regarding the need for a permanent secondary safety system (e.g. locking pin, etc.) for the design of new systems, an appropriate vibration test and standardization of life-saving appliances and training issues, had agreed that the Sub-Committee should further consider these issues under this agenda item, taking into account the proposals made by the Industry Lifeboat Group (ILG) (document ISWG LRH/2/3); and

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- .2 DE 56/6/2 (ICS, BIMCO, IFSMA, IMCA, INTERCARGO, INTERTANKO, ITF, Nautical Institute and OCIMF), providing the shipping industry guideline for selecting new or replacement of existing on-load lifeboat release hooks, developed by the ILG, particularly related to the need for a permanent secondary safety system, and proposing to consider the remaining issues, e.g. the need for a permanent secondary safety system for the design of new systems, an appropriate vibration test, standardization of life-saving appliances and training issues, as listed in paragraph 7 of document DE 51/8/7.

6.8 While the majority of delegations supported the shipping industry guideline for selecting new or replacing existing on-load lifeboat release hooks, differing views were expressed regarding the need for a permanent secondary safety system for the design of new systems, since some delegations considered that future hooks should be designed to be inherently safe without the need for secondary safety systems.

6.9 Subsequently, the Sub-Committee agreed to instruct the LSA Working Group to further consider the issue of improving safety of lifeboat release and retrieval systems, in conjunction with the development of a new framework of requirements for life-saving appliances (see paragraph 6.5).

IACS UI concerning the exterior colour of lifeboats

6.10 The Sub-Committee noted document DE 56/6 (Secretariat), informing it that, with regard to the draft amendments to the LSA Code clarifying the phrase "highly visible colour" in relation to the lifeboat exterior colour (LSA Code, paragraph 1.2.2.6) prepared by DE 53, COMSAR 15, taking into account the information provided by the observer from IACS on its unified interpretation for the expression "or a comparably highly visible colour", had concluded that the proposed amendment to the LSA Code was not justified and had invited the Committee to take appropriate action. The Sub-Committee also noted that MSC 89 had consequently decided not to approve the proposed amendment to paragraph 1.2.2.6 of the LSA Code and had instructed the Sub-Committee to reconsider the IACS unified interpretation, which had been brought to the attention of DE 53 by document DE 53/17 (IACS), and develop an MSC circular, as appropriate.

6.11 While some delegations supported the unified interpretation proposed by IACS, others raised concerns, being of the view that further clarification was necessary regarding the proposed words "colours of strong chromatic content" and the application of the UI, i.e. to lifeboats only or to LSA in general. After discussion, the Sub-Committee agreed to instruct the LSA Working Group to further consider the matter, with a view to developing a draft MSC circular clarifying the phrase "highly visible colour" in relation to the lifeboat exterior colour, taking into account document DE 53/17.

Establishment of the LSA Working Group

6.12 Recalling its decision at DE 55, the Sub-Committee established the LSA Working Group and instructed it, taking into account documents DE 56/6/1, DE 56/6/3, DE 56/6/4, DE 56/6/5, DE 56/6 and DE 56/6/2, and comments made and decisions taken in plenary, to:

- .1 prepare a road map for the development of a new framework of requirements for life-saving appliances, including the issue of improving the safety of lifeboat release and retrieval systems;

- .2 develop a draft MSC circular clarifying the phrase "highly visible colour" in relation to the lifeboat exterior colour, taking into account document DE 53/17; and
- .3 advise the Sub-Committee on whether a correspondence group should be established and, if so, develop terms of reference for the group.

Report of the LSA Working Group

6.13 Having considered the report of the working group (DE 56/WP.3), the Sub-Committee approved it in general and took action as described in the following paragraphs.

New framework of requirements for ships' life-saving appliances

6.14 The Sub-Committee considered and agreed to the road map for the development of a new framework of requirements for ships' life-saving appliances, as set out in annex 2 to document DE 56/WP.3.

6.15 In this connection, the Sub-Committee forwarded the draft goal-based guidelines on framework of requirements for ships' life-saving appliances prepared by the group, as set out in annex 3 of document DE 56/WP.3, to the LSA Correspondence Group for further consideration (see paragraph 6.17).

Lifeboat exterior colour

6.16 The Sub-Committee considered the draft unified interpretation concerning lifeboat exterior colour prepared by the group (DE 56/WP.3, annex 4) and agreed to a draft MSC circular on Unified interpretation of paragraph 1.2.2.6 of the LSA Code concerning lifeboat exterior colour, as set out in annex 5, for submission to MSC 90 for approval.

Instructions to the LSA Correspondence Group

6.17 Taking into account the progress made at this session and the remaining work still pending, the Sub-Committee instructed the LSA Correspondence Group, established under agenda item 5 (see paragraph 5.24), to:

- .1 further develop the draft Goal-based guidelines on framework of requirements for ships' life-saving appliances (DE 56/WP.3, annex 3), taking into account the human element in accordance with MSC-MEPC.7/Circs.1, 2, and 4 and the road map contained in annex 2 to document DE 56/WP.3; and
- .2 identify matters in the draft Goal-based guidelines that relate to the work of other IMO bodies and advise the Sub-Committee accordingly.

Extension of target completion year

6.18 In light of the above decisions, the Sub-Committee invited the Committee to extend the target completion year for this output to 2013.

7 DEVELOPMENT OF SAFETY OBJECTIVES AND FUNCTIONAL REQUIREMENTS OF THE GUIDELINES ON ALTERNATIVE DESIGN AND ARRANGEMENTS FOR SOLAS CHAPTERS II-1 AND III

7.1 The Sub-Committee noted that MSC 82, having considered document MSC 82/3/19 (United Kingdom), proposing that relevant performance criteria be developed to support the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III (MSC.1/Circ.1212), had included the item in the post-biennial agenda of the Committee, and that MSC 89 had included the output in the biennial agenda of the Sub-Committee.

Instructions to the LSA Working Group

7.2 Having noted that no documents had been submitted to this session under this agenda item, the Sub-Committee instructed the LSA Working Group, established under item 6 (see paragraph 6.12), to further consider how to progress the matter, in conjunction with the development of a new framework of requirements for life-saving appliances.

Report of the LSA Working Group

7.3 Having considered the part of the report of the LSA Working Group (DE 56/WP.3) dealing with the agenda item, the Sub-Committee took action as described in the following paragraphs.

7.4 The Sub-Committee, having noted the group's recommendation on how to proceed with the development of safety objectives and functional requirements of the Guidelines on alternative designs and arrangements for SOLAS chapter II-1 and III, agreed to the proposed way forward whereby the new framework of regulations for life-saving appliances should form the basis for the development of specific safety objectives and functional requirements for SOLAS chapter III, similar to regulation 2 of SOLAS chapter II-2. The framework could then also be used as a basis for the guidelines for evaluation of novel LSAs to be developed by the Organization, as referred to in the footnote to SOLAS regulation III/4.3.

7.5 The Sub-Committee also noted the group's view regarding their lack of expertise on matters related to the development of specific safety objectives and fundamental requirements for SOLAS chapter II-1 due to the fact that relevant experts had not been present in the group.

7.6 Taking into account the further work needed on this output, the Sub-Committee encouraged Member States and international organizations to submit comments and proposals to DE 57.

8 DEVELOPMENT OF AMENDMENTS TO THE LSA CODE FOR THERMAL PERFORMANCE OF IMMERSION SUITS

8.1 The Sub-Committee recalled that DE 54, while concurring that the reference test device (RTD) concept could be useful in the evaluation of the thermal performance of immersion suits, was of the view that more data and analyses of the RTD devices as well as better defined thermal manikins were necessary. Consequently, DE 54 had agreed to consider the matter further at this session and had invited Member States and international organizations to submit relevant comments and proposals.

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

- .1 DE 56/8 (Japan), proposing to amend the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)) to specify minimum thermal resistance values for thermal protective tests using a thermal manikin, so that a reduction in the variation of test results can be achieved without the introduction of the RTD concept;
- .2 DE 56/8/1 (Canada), providing information on the importance of considering the effect of environmental conditions and other factors on the insulation provided by immersion suits when developing approval testing methodology and criteria using the RTD concept to address human subject testing and inter-manikin differences;
- .3 DE 56/8/2 (Denmark, Dominica), in supporting the use of thermal manikins for the thermal performance testing of immersion suits and recognizing the need for an immersion suit RTD, informed about such immersion suit RTD specifications and proposed to consider the matter further through a correspondence group; and
- .4 DE 56/8/3 (Canada), while supporting the acceptance of thermal manikins, suggested that the test methodology is not yet sufficiently detailed to ensure consistent results from various manikins throughout the world and proposed to consider the matter further through a correspondence group.

8.3 Having noted general support for further consideration of the matter, taking into account the documents submitted, the Sub-Committee invited interested parties to prepare terms of reference regarding the thermal performance of immersion suits for a correspondence group.

Instructions to the LSA Correspondence Group

8.4 Consequently, the Sub-Committee instructed the LSA Correspondence Group established under agenda item 5 (see paragraph 5.24), taking into account documents DE 53/11, DE 53/INF.3; DE 54/12, DE 54/12/1, DE 54/12/2, DE 56/8, DE 56/8/1, DE 56/8/2 and DE 56/8/3, to:

- .1 consider the methodology for ensuring consistent outcomes of thermal testing using manikins instead of human test subjects and, if necessary, the appropriate application and specification of immersion suit RTDs; and
- .2 prepare relevant draft amendments to the LSA Code and the Revised recommendation on testing of life-saving appliances (MSC.81(70)).

Extension of target completion year

8.5 In light of the above decisions, the Sub-Committee invited the Committee to extend the target completion year for this output to 2013.

9 DEVELOPMENT OF AMENDMENTS TO THE LSA CODE FOR FREE-FALL LIFEBOATS WITH FLOAT-FREE CAPABILITIES

9.1 The Sub-Committee recalled that DE 47, having considered proposed amendments to SOLAS chapter III and the LSA Code prepared by a drafting group (DE 47/WP.9, paragraphs 4 to 8), had agreed to keep the amendments in abeyance until such time as the relevant technology for float-free lifeboats had become available, noting the view of the group that there may be a need for the development of detailed performance standards for the float-free capability of free-fall lifeboats.

9.2 Having noted that no documents had been submitted to the session under this agenda item, and having received no other information regarding technological developments concerning the float-free capabilities of free-fall lifeboats, the Sub-Committee briefly discussed whether the output should be kept on the biennial agenda. However, having noted the intention of ILAMA to submit relevant information to the next session, the Sub-Committee invited Member States and international organizations to submit concrete proposals to DE 57.

Extension of target completion year

9.3 Consequently, the Sub-Committee invited the Committee to extend the target completion year for this output to 2013.

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

General

10.1 The Sub-Committee recalled that DE 55 had decided not to further consider several documents submitted to that session, relating to environmental aspects, loss of containers and voyage planning, and requested the Secretariat to forward those documents to the MEPC and the NAV Sub-Committee, for further consideration and instruction, as appropriate.

10.2 The Sub-Committee also recalled that DE 55 had re-established the correspondence group to further develop the draft International Code of safety for ships operating in polar waters (Polar Code), taking into account relevant documents.

Outcome of NAV 57 and MEPC 62

10.3 The Sub-Committee noted document DE 56/2/1 (Secretariat) on the outcome of NAV 57 and MEPC 62 relating to polar vessel traffic monitoring and information systems from the safety perspective, vessel voyage planning and operation and environmental aspects of the draft Polar Code, respectively, as follows:

- .1 NAV 57, having reviewed document DE 55/12/9 (FOEI, IFAW, WWF, Pacific Environment), proposing the establishment of polar vessel traffic monitoring and information systems, had endorsed the Ships' Routeing Working Group's views (NAV 57/WP.4, paragraphs 8.1 to 8.5) that the implementation of a vessel traffic monitoring and information system at present would be premature;

- .2 concerning vessel voyage planning and operations in order to avoid interactions, NAV 57, having reviewed document DE 55/12/21 (FOEI, IFAW, WWF, Pacific Environment) together with the supplementary information provided in documents NAV 57/INF.10 and NAV 57/INF.11 (FOEI, IFAW, WWF, Pacific Environment), had endorsed the working group's view (NAV 57/WP.4, paragraphs 8.6 to 8.11) that the current guidance, in particular the Guidance document for minimizing the risk of ship strikes with cetaceans (MEPC.1/Circ.674) was sufficient, and agreed that it was premature to develop guidance on voyage planning and operations in polar waters in order to avoid collisions with cetaceans and other mammals; and
- .3 with regard to various environmental aspects of the Code, MEPC 62, having noted the Sub-Committee's decision to develop an environmental protection chapter for the draft Polar Code and, having briefly considered documents MEPC 62/11/4/Add.1 (Secretariat), containing a legal opinion on making the Polar Code mandatory, and MEPC 62/11/6 (WWF, FOEI, IFAW), concerning Arctic shipping and cetaceans, decided to defer, due to time constraints, a discussion of the issues to MEPC 63.

Report (part 2) of the working group established at DE 55

10.4 The Sub-Committee considered part 2 of the report of the Polar Code Working Group established at DE 55 (DE 56/10) and, having approved it in general, noted that the group's report had been considered in detail by the correspondence group established at DE 55 (DE 56/10/1).

Report of the correspondence group

10.5 The Sub-Committee considered the report of the correspondence group (DE 56/10/1) established at DE 55 and the attached draft text of the Polar Code; various proposals for discussion on categories of ships; and a statement regarding environmental protection, together with the group's comments on the outcome of MEPC 62, NAV 57 and DSC 16.

10.6 In this connection, the Sub-Committee noted statements by the delegations of New Zealand and the United States, as set out in annexes 19 and 20, respectively, and by the delegation of France, regarding important technological evolutions in double hull optimization, details of which are contained in annex 3 of the correspondence group report (DE 56/10/1).

10.7 In considering the above-mentioned documents and the associated statements, the Sub-Committee recalled that DE 55 had agreed in principle that, with regard to the development of the draft Polar Code, a two-step approach should be taken, i.e. the Code should initially apply to SOLAS passenger and cargo ships, taking into account the urgent need for relevant mandatory requirements; and later requirements for non-SOLAS ships, such as fishing vessels, should be developed after consideration by the Organization. Although some delegations supported expanding the scope of the Code, the Sub-Committee, in order to expedite the finalization of the draft Code, confirmed its previous decision that the Code should be initially developed to apply to SOLAS passenger and cargo ships and noted that a plan for future work to expand the scope of the Code may be developed.

10.8 Bearing in mind that it would discuss later the documents commenting on the correspondence group's report, the Sub-Committee agreed to address first the general action requested by the group (DE 56/10/1, paragraph 14) and, in particular:

- .1 agreed to urge the MEPC and the MSC to prioritize the discussion on how to make the Polar Code mandatory at their forthcoming meetings;
- .2 endorsed the group's proposals regarding the eventual referral of certain chapters of the draft Polar Code to other sub-committees as set out in paragraph 7 of the report;
- .3 noted that the correspondence group in its work took note of the relevant outcome of NAV 57 (see also paragraphs 10.3.1 and 10.3.2); and
- .4 noted the request of the group that a working group be established to further progress the work on the draft Polar Code.

Application and structure of the Polar Code

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

- .1 DE 56/10/2 and Corr.1 (Argentina, Chile), including an analysis aimed at achieving a common understanding with regard to the formulation of goals (Tier I) and functional requirements (Tier II), pointing out some problems in the draft Code, in particular relating to the verification process (Tier III) on rules and standards (Tier IV and V), proposing that the Code should be drafted in a structured manner and appropriate mechanisms examined for effective implementation;
- .2 DE 56/10/8 (IACS), proposing that, with regard to the format of the Code, each individual functional requirement should be aligned with at least one prescriptive requirement and each paragraph should identify separate hazards; and
- .3 DE 56/10/4 (Iceland), stating that requirements for fishing vessels must be developed as add-on requirements to the Torremolinos Protocol; suggesting that, since fishing vessel operations are distinctly different from the operation of most other types of ships, the Sub-Committee should finalize a draft of a Polar Code that would be mandatory for SOLAS passenger and cargo ships only as a first approach; and proposing that, when developing additional mandatory requirements for fishing vessels operating in polar waters, this task should be assigned to the SLF Sub-Committee.

10.10 Regarding documents DE 56/10/2 and DE 56/10/8, the Sub-Committee noted a view that supported the linkage between functional and prescriptive requirements but stated that goal-based requirements should also be possible. The Sub-Committee also noted that the delegation of China had suggested excluding government and public service ships from the application of the Code. With respect to document DE 56/10/4, the Sub-Committee reaffirmed its previous decision that non-SOLAS ships such as fishing vessels would be considered at a later point in time (see paragraphs 10.7 and 10.22).

Hull, ice-strengthening and equipment

10.11 The Sub-Committee noted document DE 56/10/6 (Germany), containing comments on chapter 8 (Life-saving appliances) of the draft Polar Code, pointing out particular hazards such as low temperature, ice on water, remoteness and high latitude.

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

- .1 DE 56/10/7 (United Kingdom), stating that, since the primary mechanism by which lives are lost at sea is foundering, the prevention of water ingress and thus the maintenance of hull integrity should be the primary safety of life consideration in the Polar Code; and that, given the degree of remoteness and the difference in extent of opportunity for control and enforcement between the Arctic and Antarctic, minimum hull integrity requirements should be put in place for the Antarctic region; and proposing some concrete measures to be reflected in the Code; and
- .2 DE 56/10/14 (Russian Federation), recommending that the principle of taking into account the age of ice in which the ship is intended to navigate should be fundamental in the category determining; that category A may only be assigned to ships the ice category of which allows their operation in multi-year arctic ice; and that category B may be assigned to ships intended for operation in first-year ice only. It also stated that specific limitations for navigation in ice conditions are imposed by the vessel's ice class and national rules adopted by the coastal State and suggested allowing ships without ice strengthening to enter polar areas only in summer and on condition that the ship is provided with appropriate terminals for the reception of satellite ice charts in order to ensure timely averting of collision with ice, and proposed including in the Polar Code a table of the division of ships into categories.

10.13 In the following discussion, the Sub-Committee noted concerns that the functional requirements of the Code should be flexible and that navigation in ice should not be limited by coastal States (see also paragraph 10.22).

Polar Water Operational Manual (PWOM) and navigational matters

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

- .1 DE 56/10/3 (Finland), providing information about the content of the PWOM concerning issues related to safe navigation in ice, in particular safe operations against ice conditions and safe distance between an escorting icebreaker and ships to be escorted;
- .2 DE 56/10/9 (CSC), suggesting that limiting ship speed through the Polar Code, as traffic volumes increase, may be the only near-term measure available to provide region-wide increased protection on safety and environmental grounds and to minimise the adverse impacts of increased polar shipping activity on human-induced climate change;
- .3 DE 56/10/15 (Canada), providing examples based on Canada's current domestic systems of control in coastal waters regarding access limits, based on the zone/date system and the Arctic Ice Regime Shipping System, to facilitate discussion on potential approaches to certification and

its integration with the PWOM, and proposing the setting of general access limits, which could be modified based on actual environmental conditions, intended operations and safe speed, to be part of the PWOM;

- .4 DE 56/10/16 (Canada), proposing that ships' PWOMs should address escort procedures in the context of the service(s) it is intended or expected to operate, and that the procedures should reflect the requirements of port and coastal State Administrations. It also proposed that escorted operation was an essential part of the curriculum for any certification processes for Ice Navigators and other deck officers, which should be reflected in personnel requirements under the Polar Code;
- .5 DE 56/10/17 (Canada), stating that access to sea ice data must be supplemented by decisions based on experienced, knowledgeable observations from the bridge, and proposing that safe operation in ice is an essential part of the curriculum for any certification processes for Ice Navigators and other deck officers, which should be reflected in personnel requirements under the Polar Code;
- .6 DE 56/10/18 (United States), proposing to include certain aspects of search and rescue (SAR) in the content of the PWOM, i.e. distress alert notification to the relevant rescue coordination centre (RCC) and nearby ships; actions upon abandon ship and evacuation into life-saving appliances; and actions as a ship assisting someone in distress; and
- .7 DE 56/10/19 (United States), proposing to include ship voyage planning guidance to avoid and minimize interaction with cetaceans and other marine mammals in the PWOM, taking into account the Guidance document for minimizing the risk of ship strikes with cetaceans (MEPC.1/Circ.674) as well as existing international law and instruments.

10.15 Regarding document DE 56/10/9, the Sub-Committee noted concerns over the limiting of ship speed, bearing in mind that different engines work at different speeds, that not running engines at the proper speed would increase emissions, and that existing IMO requirements, e.g. the EEDI requirements of MARPOL Annex VI, should be taken into account. Regarding the proposals in documents DE 56/10/15 to DE 56/10/17, the Sub-Committee, noting concerns regarding the jurisdiction of coastal States, agreed that the working group should consider only technical matters at this time, while legal issues could be considered at a later point in time. With regard to document DE 56/10/19, there was support for voyage planning to avoid ship strikes with cetaceans (see also paragraph 10.22).

10.16 In this connection, the Sub-Committee noted a statement by the delegation of the Russian Federation, as set out in annex 21.

Environmental issues

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

- .1 DE 56/10/10 (FOEI, CSC, IFAW, WWF, Pacific Environment), proposing to include a provision in the Polar Code prohibiting the use of heavy fuel oil by ships in Arctic waters, equivalent to the environmental protection presently afforded in Antarctic waters;

- .2 DE 56/10/11 (FOEI, CSC, IFAW, WWF, Pacific Environment), recommending inclusion of a provision in the Polar Code restricting shipboard incineration in polar waters, and requesting that hazardous substances not be incinerated aboard ships in polar waters; that shipboard incinerators on ships operating in polar waters be equipped with effective air pollution control devices; and that a ban be considered for shipboard incineration in waters within a certain distance of land and ice;
- .3 DE 56/10/12 (FOEI, IFAW, WWF, Pacific Environment), proposing specific requirements for chapter 15 of the draft Code, on environmental protection concerning prohibitions of discharges of noxious liquid chemicals and oils or oily mixtures, the need to avoid discharges of untreated sewage and grey water, garbage including food wastes, air emissions (black carbon, SO_x and NO_x), underwater noise, ballast water discharges and anti-fouling systems (AFS);
- .4 DE 56/10/13 (WWF, FOEI, Pacific Environment), recommending that the Polar Code should include a provision to ensure that hard and inert AFS coatings, suitable for ice operations and certified to be resistant to ice, should be used when there is any risk of hull contact with ice, since these coatings are generally non-toxic, more suitable for such operations, more economically viable and environmentally less impactful;
- .5 DE 56/INF.14 (FOEI, CSC, WWF, Pacific Environment), providing contextual information on Arctic shipping, including trends, calling for stringent ice-strengthening requirements for ships operating in polar waters and urging a ban on the use of heavy fuel oil by ships in the Arctic; and
- .6 DE 56/INF.3 (Secretariat), providing the outcome of the Workshop on Environmental Aspects of the Polar Code, held in September 2011 at the Scott Polar Research Institute of Cambridge University in Cambridge, containing a number of environmental risk factors for the polar regions, a risk matrix and an analysis of the hazard consequences in order to develop qualitative causality relationships between hazards and their causes and to identify relevant safeguards.

10.18 With regard to the various environmental issues raised in the aforementioned documents, many delegations supported the inclusion of both safety and environmental aspects in the Code as originally tasked by the committees. Other delegations stated that many environmental issues concerning the polar areas were not regulated by MARPOL and would still need to be discussed in relevant Sub-Committees and in the MEPC.

10.19 Following a lengthy discussion, the Sub-Committee instructed the working group to prepare a list of environmental issues and allocate them to the bodies that should consider them, instead of considering the issues in detail in the group (see paragraph 10.22).

10.20 Regarding document DE 56/13, the observer from IPPIC raised concerns regarding the use of hard, non-biocidal, inert, abrasive resistant coatings, since ships coated with these products would, when entering polar regions, present a significant risk of importing invasive species into these regions, if not properly cleaned.

Other relevant information

10.21 The Sub-Committee noted the following documents and referred them to the working group for further consideration:

- .1 DE 56/10/5 (Iceland), providing information on the annual changes in the shrink and swell rhythm of the ice coverage of Arctic polar waters and suggesting that, when addressing hazards to ship operation in polar waters, due consideration should be given to their degree, magnitude and characteristics, since these parameters may vary seasonally or geographically;
- .2 DE 56/10/8 (IACS), providing information on the definition of the design air temperature, referring to the relevant IACS Unified Requirement;
- .3 DE 56/INF.2 (Denmark, Norway), providing information gathered by the PAME (Protection of the Arctic Marine Environment) working group, under the Arctic Council concerning best practices and standards that may help improve the safety, sound navigation and environmental protection of Arctic cruise ship operations from Arctic Council countries;
- .4 DE 56/INF.4 (Finland), providing a research report summarizing the theory of a ship in a compressive ice field, giving a short overview of the previous full scale observations as well as model tests; discussing the definition of ice compression; presenting the driving forces of sea ice compression; and describing the Russian system for observing ice compression; and
- .5 DE 56/INF.9 (CLIA), providing an overview of shipping activities undertaken concerning the size of the passenger ship population in both the Arctic and Antarctica, and indicating trends implicit in the historical casualty data for both regions.

Establishment of the working group

10.22 Having considered the documents submitted to the session and the related discussions, the Sub-Committee established the Working Group on Development of a Mandatory Polar Code and instructed it, taking into account comments and decisions made in plenary, to:

- .1 further develop the draft International Code of safety for ships operating in polar waters (Polar Code), on the basis of the report of the correspondence group (DE 56/10/1), taking into account the documents submitted to this session;
- .2 specify chapters in the draft Polar Code which, together with specific questions if any, should be forwarded to relevant IMO bodies for their input;
- .3 identify items in chapter 15 of the draft Code requiring advice or input from the MEPC and other IMO bodies;
- .4 advise the Sub-Committee on whether the correspondence group should be re-established and, if so, develop terms of reference for the group; and

- .5 submit a report (part 1) to plenary, continue working through the week and submit part 2 of the report to DE 57, as soon as possible after this session, so that it can be taken into account by the correspondence group, if established.

Report of the working group

10.23 Having received the report of the working group (part 1) (DE 56/WP.4), the Sub-Committee approved it in general and took action as described in the following paragraphs.

Revised text of the draft Code

10.24 The Sub-Committee noted the group's decision to retain the three ship categories approach (see regulation 1 (Definitions) of the draft Code) for the time being for the purposes of the Code, pending agreement to be reached within the group. The Sub-Committee noted also the revised text of the draft Code (DE 56/WP.4, annex 1), which was revised only with regard to the goals and functional requirements, with special attention given to those sections to be referred to other IMO bodies.

Consideration of the Code by other expert sub-committees

10.25 The Sub-Committee referred the corresponding chapters of the draft Code to COMSAR 16, FP 56, NAV 58, SLF 55 and STW 43, together with relevant explanatory comments (DE 56/WP.4, annex 2) and additional comments which will be included in part 2 of the report of the working group, requesting them to consider the parts of the Code under their respective remits and advise DE 57 of the outcome of their consideration, while noting some concerns that the comments included in annex 2 were too detailed and may exceed the remit of the Sub-Committee.

10.26 The delegation of Argentina, in addressing measures the adoption of which may be requested, commented that once chapter 13 of the draft Code had been discussed by the STW Sub-Committee, it would probably be necessary to amend IMO instruments other than the ones foreseen to date, for example, those concerned with training and watchkeeping. To that end, the delegation considered that it would be appropriate for the STW Sub-Committee, at the same time as considering the above-mentioned chapter, to evaluate suitable measures for implementing those requirements and provide advice on the matter.

10.27 The observer from ICS, recalling additional work carried out on clarification of the ship categories within the draft Code, stated that further work was carried out subsequent to the submission of the report (part 1) which would be reported in part 2 of the report, highlighting the need to provide an allowance for the operation in polar waters to standard SOLAS ships operating in ice-free waters.

10.28 In this connection, the Sub-Committee invited Member States and international organizations to ensure attendance at their respective sessions by specialists having the necessary expertise in order to expedite the development of the Code. The delegations of Cyprus and Panama reserved their position on this issue.

Environmental issues

10.29 The Sub-Committee considered the group's view on how to deal with environmental protection aspects of the Code, taking into account annexes 3 and 4 of their report, and, after a lengthy discussion, decided to keep any decision on environmental requirements to be included in the Code in abeyance, pending further consideration at DE 57.

10.30 In this connection, the Sub-Committee noted a statement by the delegation of the Russian Federation, as set out in annex 22.

Procedural considerations

10.31 The Sub-Committee endorsed the view of the group that it should not take decisions on matters under the purview of established conventions and the group's recommendation to request the MSC and MEPC to prioritize their discussions on how to make the Polar Code mandatory in the most expeditious way possible.

Re-establishment of the correspondence group

10.32 Recognizing the need to progress the development of the draft Polar Code, the Sub-Committee re-established the Polar Code Correspondence Group under the coordination of Norway* and instructed it to:

- .1 further develop the parts of the draft International Code of safety for ships operating in polar waters (Polar Code) not referred to other bodies, based on the report of the working group (DE 56/WP.4 and DE 57/11), taking into consideration:
 - .1 the documents listed in paragraph 3.1 of document DE 56/WP.4, except those concerning environmental issues;
 - .2 the outcome of MEPC 63 related to documents MEPC 62/11/4/Add.1 and MEPC 62/11/6; and
 - .3 the outcome of COMSAR 17, STW 43, NAV 58, FP 56 and SLF 55 on matters within their competence;
- .2 further develop the risk matrix (DE 55/12/1), taking into account relevant documents submitted on the matter; and
- .3 submit a report to DE 57.

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Work plan for the further development of the Polar Code

10.33 The Sub-Committee approved the work plan for the further development of the Polar Code (DE 56/WP.4, annex 3), excluding work on chapter 15 (Environmental protection) for the time being and including arrangements for Step 2 (non-SOLAS ships), and agreed to extend the target completion year for the finalization of Step 1 (SOLAS passenger and cargo ships) to 2014, subject to approval by the Committee.

11 PROTECTION AGAINST NOISE ON BOARD SHIPS

11.1 The Sub-Committee recalled that DE 55 had re-established the correspondence group to finalize the draft amendments to the Code on noise levels on board ships and to consider restructuring the Code into a mandatory and a non-mandatory part.

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

- .1 DE 56/11 (Denmark), providing the report of the correspondence group on protection against noise on board ships, containing the draft revised Code on Noise Levels on Board (annex 1) and proposals for draft SOLAS amendments to make the Code mandatory (annex 2) with two options, and suggesting that some issues, in particular the structuring of the Code into mandatory and recommendatory parts should be further considered;
- .2 DE 56/11/1 (Vanuatu), providing comments on the correspondence group's report concerning vessels with dynamical positioning (DP), noise cancelling technologies and the procedure for determining noise exposure; and
- .3 DE 56/INF.6 (Republic of Korea), providing statistically analysed noise level data for existing ships, which could be used for developing mandatory noise levels by ship size, ship type, etc.

11.3 The delegation of Panama, in appreciating the work carried out by the correspondence group, questioned the opening of discussions on decisions already taken by the Sub-Committee, such as paragraph 13 of document DE 56/11 on the structure of the code and scope of application, which seemed to be contradictory to the agreement of DE 55 on the issue, referring to paragraph 14.3.1 of document DE 55/22. They also stated that any further work on the subject should be done with precise terms of reference and without reopening discussions on issues already agreed by the Sub-Committee.

11.4 Having considered general comments on the above-mentioned documents, the Sub-Committee noted the view of the observer from ICS that it was essential for practical reasons that an allowance for short-term exceedance of the noise limits stipulated was incorporated in the mandatory Code.

11.5 With regard to the actions requested by the correspondence group (DE 56/11, paragraph 21), the Sub-Committee took decisions as follows:

- .1 concerning outstanding issues (DE 56/11, paragraph 6) (paragraph and section numbers indicated below are those in annex 1 to document DE 56/11), the Sub-Committee:

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- .1 in paragraph 3.3.2, on whether the minimum acceptable engine load, notwithstanding the normal service speed, should be set at 80 per cent MCR (maximum continuous rating) or 75 per cent MCR, agreed on 80 per cent MCR. Some delegations stated that there should be harmonization with the value of 75 per cent MCR stipulated in the EEDI under MARPOL Annex VI;
 - .2 for ships equipped with DP systems (paragraph 3.3.8), agreed, in principle, with the proposed text included in document DE 56/11/1;
 - .3 concerning methods of determining noise exposure (section 3.7 and appendix 4), agreed to keep the text as proposed by the group;
 - .4 regarding footnote 6 to the table in section 4.2, agreed to keep the text as proposed by the group;
 - .5 in paragraph 5.1.1 on noise exposure of seafarers, agreed to use the words "designed so that" instead of "ensure" or "enable" as proposed by the group;
 - .6 on warning notices in section 7.4, agreed to include symbols developed by ISO. In this regard, the observer from ISO expressed his support for providing the ISO symbols; and
 - .7 on use of noise cancelling technologies (section 12, appendix 3), agreed to the insertion of proposed section 12 in appendix 3 of the Code;
- .2 regarding mandatory and non-mandatory parts of the draft Code (DE 56/11, paragraph 13), the Sub-Committee,
 - .1 concerning chapter 1, section 1.3.3 (Application to ships less than 1,600 GT), confirmed its previous decision that the Code should apply to new ships of 1,600 GT and upwards;
 - .2 concerning chapter 5 (section 5.2 to section 5.5), while noting that many delegations supported a mandatory status of these sections, agreed to keep them non-mandatory, taking into account the majority view that they were of an operational nature and difficult to implement as mandatory requirements;
 - .3 concerning chapter 6, section 3 (Onboard verification of sound insulation indices), agreed to make it mandatory, noting that some delegations did not concur with the decision due to its perceived impracticality as a mandatory requirement;
 - .4 concerning chapter 7, section 7.1 (Hearing protection and warning information, general), agreed to make it mandatory;
 - .5 concerning chapter 7, section 7.2 (Requirements for hearing protectors), agreed to make it mandatory, with some modifications to clarify the contents; and

- .6 concerning appendix 4 (Simplified procedure for determining noise exposure), instructed the drafting group to consider further modifications to the text for clarification;
- .3 on whether the structure of the draft Code should be maintained as proposed in the group's report or whether it should be restructured as a two-part Code with a mandatory and a recommendatory part, while noting that many delegations supported the restructuring for clarity and usability, agreed to keep the current structure, recalling the agreement at DE 55 to keep the structure and the completion year, i.e. 2012;
- .4 on an editorial review of the draft Code after its finalization, agreed to request the Secretariat to effect any editorial corrections that may be identified; and
- .5 on the two options to make the Code mandatory as set out in annex 2 of the report, agreed to option 1, i.e. inclusion of a draft new regulation 3-12 on Protection against noise in SOLAS chapter II-1.

11.6 Pertaining to the exemption of high-speed craft from the application of the Code, as set out in paragraph 1.3.4 thereof, and with regard to a possible consequential revision of the 2000 HSC Code, the Sub-Committee agreed to the exemption and instructed the drafting group to consider the draft SOLAS amendments with a view to clarifying the exemption of high-speed craft from the application of the Code.

Establishment of a drafting group

11.7 Having considered the above issues, the Sub-Committee established a Drafting Group on Revised Code on Noise Levels on Board Ships and instructed it, taking into account comments and decisions made in plenary, to:

- .1 finalize the draft revised Code on noise levels on board ships, based on document DE 56/11 (annex 1), taking into account documents DE 56/11/1 and DE 56/INF.6; and
- .2 prepare draft amendments to SOLAS chapter II-1 to make the Code mandatory, taking into account document DE 56/11 (annex 2).

Report of the drafting group

11.8 Having received the report of the drafting group (DE 56/WP.7), the Sub-Committee approved it in general and took action as described in the following paragraphs.

Draft Code on noise levels on board ships

11.9 Following discussion, the Sub-Committee, having reinstated section 6.3 as a recommendatory section in paragraph 1.1.3 of the Code (DE 56/WP.7, annex 1), agreed to the draft Code on noise levels on board ships, as set out in annex 6, for submission to MSC 90 for approval, in principle, with a view to adoption in conjunction with the adoption of the associated SOLAS amendments (see paragraph 11.13). In this connection, the Sub-Committee requested the Secretariat to prepare, in due course, an associated draft MSC resolution for consideration at MSC 91.

11.10 The delegation of the Bahamas drew attention to the earlier discussions in plenary when there had been considerable support for the proposal to split the Code into two sections, one mandatory and the other recommendatory. They maintained that a split into two sections would make the implementation of the Code much easier and that, in its present form, it was difficult to determine which items were mandatory.

11.11 The Sub-Committee noted a statement by the delegation of France, as set out in annex 23, and that their delegation reserved its position on section 6.3 of the draft Code.

11.12 The observer from ICS commented that they had no opinion on whether 75 per cent or 80 per cent MCR was the more appropriate main engine power output to measure sound levels during sea trials, but that it was possibly relevant that the recently adopted MARPOL Annex VI EEDI regulation required extended sea trials at 75 per cent MCR for EEDI verification purposes. They were of the view that to require further sea trials at a level of 80 per cent MCR would add yet another trial level requirement and felt that it would be beneficial for the various regulations developed by the Organization to recognize and harmonize with other regulations adopted, rather than simply adding to the list of demands on ships in isolation.

Draft amendments to SOLAS chapter II-1

11.13 The Sub-Committee agreed to the draft amendments to SOLAS chapter II-1, including a new SOLAS regulation II-1/3-12, to make the Code on noise levels on board ships mandatory, as set out in annex 7, for submission to MSC 90 for approval with a view to subsequent adoption.

11.14 In this context, the Sub-Committee, noting suggestions by the delegation of Cyprus on the draft new SOLAS regulation, in particular concerning the amendments procedure for non-mandatory parts of the Code and the renumbering of existing regulations emanating from the deletion of existing regulation II-1/36, requested the Secretariat to consider them and take action as appropriate.

11.15 The observer from IACS cautioned the Sub-Committee regarding the ship types identified in paragraph 2 of the draft regulation II-1/3-12 which are not defined in SOLAS.

Completion of the output

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

12 CLASSIFICATION OF OFFSHORE INDUSTRY VESSELS AND CONSIDERATION OF THE NEED FOR A CODE FOR OFFSHORE CONSTRUCTION SUPPORT VESSELS

12.1 The Sub-Committee recalled that DE 55, having considered draft unified interpretations of the 2008 SPS Code proposed by IACS (DE 55/15), had agreed to a draft MSC circular on Unified interpretations of the Code of Safety for Special Purpose Ships, 2008 (2008 SPS Code), for submission to MSC 90 for approval.

12.2 The Sub-Committee also recalled that, concerning the amendments to chapters 1 and 8 of the SPS Code proposed by IACS (DE 55/15), DE 55, having considered that further instruction from the Committee was needed, had invited MSC 89 to authorize it to proceed with the development of amendments to the 2008 SPS Code under this output. The Sub-Committee

noted that MSC 89 had approved this course of action but that no documents on the issue had been submitted to this session.

12.3 With regard to the original objectives of the item, the Sub-Committee further recalled that MSC 85, having considered document MSC 85/23/4 (Germany and IMCA) proposing to investigate the need for clarification of classification of vessels in the offshore industry with regard to guidance provided in relevant IMO codes and guidelines, had agreed to include the item in the biennial agenda of the Sub-Committee. However, the Sub-Committee noted that, even after the development of the aforementioned unified interpretations and, possibly, of amendments to the 2008 SPS Code, the matter of how the transport of industrial personnel should be regulated remains an issue that should be resolved under this item.

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

- .1 DE 56/12 (Germany, CESA and ICS) proposing to develop a suitable classification of offshore wind farm vessels (i.e. offshore wind farm construction vessels (OWFCV) and offshore wind farm service crafts (OWFSC)) and non-mandatory guidelines clarifying the application of existing IMO instruments to these types of vessels, as well as clarifying the status of the specialized personnel carried on board; and
- .2 DE 56/12/1 (Vanuatu), commenting on document DE 56/12, expressed concern over the development of new additional guidelines for wind farm vessels, since the existing codes and guidelines, excepting the SPS Code, are relevant for regulating such vessels unless and until some radically different foundation is developed that would require an entirely new hull form to deploy.

12.5 In the ensuing discussion, the majority of the delegations, while acknowledging the fast growth of the wind farm industry as one of the sources of renewable energy, were of the view that there was no need for the development of a separate Code for wind farm vessels and supported further clarification of the application of existing IMO instruments (e.g. the 2009 MODU Code and the 2008 SPS Code) to OWFCV and OWFSC, in order to avoid the development of a multitude of different codes for different ship types with duplicating requirements. In this regard, the Sub-Committee also agreed that the classification of wind farm vessels employed in the offshore industry was of special importance.

12.6 With respect to the transport of industrial personnel by sea, which is not specifically covered in any IMO instrument, many delegations supported the need to further clarify relevant categories of personnel, e.g. passengers, seafarers, special personnel or other categories, in terms of applying relevant requirements, as well as competencies and training requirements. In this context, some delegations pointed out that the categorization used in the ILO Maritime Labour Convention may be referred to when considering this issue.

12.7 Following an extensive discussion, the Sub-Committee agreed that there is an urgent need to further consider the application of existing IMO instruments to OWFCV and OWFSC, including a gap analysis, and to further clarify the application of relevant requirements concerning industrial personnel transported by sea.

12.8 The Sub-Committee invited MSC 90 to note the results of the discussion under this agenda item and Member States and international organizations to submit concrete proposals on the aforementioned issues to DE 57. In this regard, the delegation of the United Kingdom invited other interested parties to contact them* for the possible preparation of a relevant joint submission.

12.9 The Sub-Committee was informed by the delegation of Germany that they would be hosting a Workshop on offshore industry vessels supporting erection and operation of wind farms on 15 May 2012, directly prior to MSC 90, at IMO Headquarters and that they were inviting participation from Member States and international organizations.

13 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS AND AMENDMENTS TO THE ESP CODE

General

13.1 The Sub-Committee recalled that this was a continuous item on its biennial agenda, established by MSC 78, so that IACS could submit any newly developed or updated unified interpretations for the consideration of the Sub-Committee with a view to developing appropriate IMO interpretations, if deemed necessary.

13.2 The Sub-Committee noted that MSC 89 had agreed to rename the output "Consideration of IACS unified interpretations and amendments to the ESP Code", as requested by the Sub-Committee, and also noted that the 2011 ESP Code had been adopted by A 27 by resolution A.1049(27).

13.3 The Sub-Committee further noted that, with respect to consequential amendments to other mandatory instruments emanating from the adoption of the ESP Code, MSC 89 had endorsed the decision of DE 55 to consider draft consequential amendments to relevant instruments at this session.

IACS unified interpretations

Load testing of hooks intended for the primary release of lifeboats

13.4 The Sub-Committee considered document DE 56/13/1 (IACS), providing an IACS Unified Interpretation (UI SC 244) relating to chapter 5.3.4 of part 2 of the Revised Recommendation on testing of LSA (resolution MSC.81(70)) on load testing of hooks intended for the primary release of lifeboats.

13.5 Since questions were raised about the UI, namely, why it referred only to the primary release mechanism and did not mention rescue boats, the Sub-Committee agreed to note it and did not take any further action.

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Dedicated seawater ballast tanks

13.6 The Sub-Committee considered document DE 56/13/2 (IACS), providing revision 1 of IACS Unified Interpretation SC 227 relating to SOLAS regulation II-1/3-2 on dedicated seawater ballast tanks, recalling that the original UI 227 had been considered at DE 52, without any further action being taken.

13.7 The Sub-Committee, having added the condition "if coatings applied in these tanks, such as Phenolic Epoxy, have a better performance than those applied in accordance with the PSPC for dedicated ballast tanks" at the end of the main body of the interpretation, agreed to a draft MSC circular on Unified interpretation of SOLAS regulation II-1/3-2, as set out in annex 8, for submission to MSC 90 for approval.

13.8 The delegation of Greece expressed the view that the IACS UI provided a narrow interpretation of SOLAS regulation II-1/3-2 and was based on the expression "dedicated" seawater tanks as meaning tanks dedicated solely to the carriage of seawater ballast and, therefore, that any seawater ballast tanks that could also serve a second use would be "exempted from the application and requirement of the IMO PSPC" by IACS members, which are free to accept any kind of coating applied, without fulfilling a particular standard pertaining to surface preparation, application, inspection etc., whereby seemingly even no coating application could be accepted. They stated that IACS, in its document, admitted that the tanks under consideration "have contents often more "onerous" in terms of corrosion than seawater" and that this implied that such a seawater ballast tank must be coated in order to be protected from corrosion caused by seawater. The delegation was also of the view that this coating protection was required by SOLAS regulation II-1/3-2 and must fulfil the PSPC as a minimum, and therefore urged the Sub-Committee not to accept such an interpretation.

Testing of infant lifejackets

13.9 The Sub-Committee considered document DE 56/13/3 (IACS), identifying perceived gaps in the LSA Code, as amended, concerning requirements for testing of infant lifejackets, and proposing several interpretations to fill those gaps so that certification could be provided in a consistent and uniform manner.

13.10 Bearing in mind that the interpretation had not yet been finalized by IACS and noting some concerns raised (e.g. vague expression, existing jackets may not satisfy the requirements, etc.), the Sub-Committee forwarded the document to the LSA Working Group for advice, in particular on how to deal with the unified interpretations. Having considered the part of the report of the LSA Working Group (DE 56/WP.3) dealing with the matter, and noting the group's view that the level of detail in the interpretation was beyond the original intention of the LSA Code to allow for new innovative designs for this type of equipment, the Sub-Committee agreed not to take any further action at this time on the matters raised by IACS.

Means of access for inspections

13.11 The Sub-Committee considered document DE 56/13/4 (IACS), providing the latest updates to IACS UI SC 191 for the application of amended SOLAS regulation II-1/3-6 (resolution MSC.151(78)) and the revised Technical provisions for means of access for inspections (resolution MSC.158(78)) and inviting the Sub-Committee to consider these in light of MSC.1/Circ.1176 (Unified interpretations to SOLAS chapters II-1 and XII and to the technical provisions for means of access for inspections) and MSC.1/Circ.1197 (Amendments to the unified interpretations to SOLAS chapters II-1 and XII approved by MSC/Circ.1176).

13.12 The Sub-Committee, while noting concerns that changes to the UI may permit smaller access openings, agreed, in principle, to the contents and requested the Secretariat to prepare a draft MSC circular on Unified interpretation of SOLAS chapters II-1 and XII and of the Technical provisions for means of access for inspections (resolution MSC.158(78)), amalgamating and consolidating MSC.1/Circ.1176 and MSC.1/Circ.1197 as a single document, including illustrations, for consideration at DE 57 (see also paragraph 13.18), whereby the consolidated text should clearly show all changes proposed.

Performance standard for protective coatings

13.13 The Sub-Committee considered document DE 56/13/5 (IACS), providing the latest changes to IACS Unified Interpretation UI SC 223, relating to the application of SOLAS regulation II-1/3-2 and the Performance standard for protective coatings (PSPC) for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)) in relation to MSC.1/Circ.1378 on Unified interpretations of the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers.

13.14 The observer from INTERTANKO, while agreeing with the suggested amendments to the UI, stated that that some alternatives proposed by IACS needed to be conditioned by stricter definitions and monitoring and pointed out that INTERTANKO was a proponent of high quality solvent free epoxy systems; however, that such an alternative had to be linked to a proper monitoring of the solvent free coatings.

13.15 The delegation of Greece, noting that the two amendments of paragraph 10 incorporated the content of circulars MSC.1/Circ.1378 and MSC.1/Circ.1381 and were therefore accepted, could not accept the rest of either revision 2 or revision 1 in the absence of technical evidence, test procedures of both coating formulation and surface preparation supporting the revised interpretation. They raised a number of technical points on which IACS should provide technical evidence and called for a response to their concerns and for further discussions in a working group of coating experts, since making changes to safety critical areas, such as ballast tanks, for only economic reasons in the absence of any statistically significant cause- and effect-correlations of coating performance, could downgrade existing SOLAS coating standards.

13.16 The Sub-Committee, noting some concerns, in particular, that any revision to the original interpretation as set out in MSC.1/Circ.1378 would need careful consideration, requested the Secretariat to prepare a draft MSC circular on Unified interpretation of the PSPC, amending and replacing MSC.1/Circ.1378, for consideration at DE 57.

Dewatering of forward spaces of bulk carriers

13.17 The Sub-Committee considered document DE 56/13/6 (IACS), providing the latest version of IACS UI SC 179, relating to the dewatering of forward spaces of bulk carriers, as required by SOLAS regulation XII/13.1, taking account of the provisions of SOLAS regulation II-1/12.5.1 in relation thereto.

13.18 Following consideration, the Sub-Committee agreed, in principle, to the contents of the interpretation and, realizing that it was referring to MSC/Circ.1176, the consolidation and amalgamation of which with MSC.1/Circ.1197 had been discussed earlier (see paragraph 13.12), requested the Secretariat to include the matter in the draft consolidated MSC circular to be prepared for consideration at DE 57.

Greatest launching height for a free-fall lifeboat

13.19 The Sub-Committee considered document DE 56/13/7 (IACS), providing IACS UI SC 248 on the greatest launching height for a free-fall lifeboat (LSA Code, section 1.1.4, as amended by resolution MSC.218(82)), relating to SOLAS regulation III/3.13.

13.20 While some delegations supported the UI, the Sub-Committee, noting concerns raised in statements by the delegations of the Netherlands and the United States, as set out in annex 24, invited Member States and international organizations to submit comments and proposals on how to proceed with the matter to DE 57.

Controls of emergency bilge suction valve in periodically unattended machinery spaces

13.21 The Sub-Committee considered document DE 56/13/8 (IACS), providing IACS UI SC 251 on controls of emergency bilge suction valve in periodically unattended machinery spaces (SOLAS regulation II-1/48.3).

13.22 The delegation of Australia, in supporting the proposed IACS Unified Interpretation, stated that there was a need to cover the operability of the emergency bilge injection valve in case of its inaccessibility due to flooding of the engine room and that this could be achieved by amending the SOLAS regulation II-1/48.3 or adding a new paragraph to the regulation.

13.23 Following consideration, the Sub-Committee supported the proposed interpretation and agreed to the draft MSC circular on Unified interpretation of SOLAS regulation II-1/48.3, as set out in annex 9, for submission to MSC 90 for approval.

Steering gear test

13.24 The Sub-Committee considered document DE 56/13/9 (IACS), providing IACS Unified Interpretation SC 246 regarding the steering gear test as required by SOLAS regulations II-1/29.3 and 29.4, but with the ship not at the deepest seagoing draught.

13.25 The Sub-Committee, noting that document DE 56/22/5 was of relevance in this connection (see paragraph 22.12) and that Germany had submitted a document to MSC 90 to request a new output to amend SOLAS regulation II-1/29, agreed, as an interim solution, to the draft MSC circular on Unified interpretation of SOLAS regulations II-1/29.3 and 29.4, as set out in annex 10, for submission to MSC 90 for approval.

New installation of materials which contain asbestos

13.26 The Sub-Committee considered document DE 56/13/10 (IACS), providing IACS UI SC 249 on Implementation of SOLAS regulation II-1/3-5 and MSC.1/Circ.1379, relating to new installation of materials which contain asbestos. In introducing the document, the observer from IACS stated that IACS Members acting as individual ROs had been verifying compliance with this regulation since it entered into force and that the UI in no way represented any sort of period of grace regarding the implementation of the prohibition, and that:

- .1 paragraph 1 of the UI explained a system of reviewing asbestos-free declarations and supporting documentation. This was a new initiative that IACS Members had collectively agreed in support of and to strengthen the implementation of the SOLAS prohibition of the new installation of materials containing asbestos;

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- .2 paragraph 2 of the UI explained a further new initiative to document those materials that needed to have asbestos free declarations and ongoing monitoring of this important documentation throughout the operational life of the ship;
 - .3 measures, similar in effect to these new collectively agreed provisions, had already been taken by IACS Members individually, acting as ROs, since SOLAS regulation II-1/3-5 had entered into force;
 - .4 IACS Members acting as individual ROs had been verifying, and continued to verify, compliance with this regulation since it entered into force and the date of implementation of this UI was the latest date by which IACS Members would use this harmonized approach to verification. The UI presented harmonized, new and effective measures that supplemented the existing ways in which all stakeholders were implementing these mandatory SOLAS provisions; and
 - .5 paragraph 4 of the document explained that the objective of the UI was to provide a practical approach to verification by recognizing the responsibility, and therefore accountability, for providing attestations from the supply side. This was entirely consistent with the principle that the Organization had already embraced in the 2011 Guidelines for the development of the inventory of hazardous materials (resolution MEPC.197(62)), which recognized that "the checking of materials should be based on the "Material Declaration" furnished by the suppliers in the shipbuilding supply chain – for example equipment suppliers, part suppliers, material suppliers."

13.27 The delegation of the Netherlands, regarding the UI's implementation date (1 July 2012), stated that, although the document of IACS mentioned that it would be next to impossible to retroactively require submissions of declarations and documentation for ships constructed between 1 January 2011 and the implementation date, it considered exactly such retroactive application to be of utmost importance, in line with SOLAS regulation II-1/3-5, in force since 1 January 2011, and to simply ban the use of asbestos. For that reason, they strongly recommended that IACS:

- .1 firstly, should not wait until 1 July 2012, but should apply the UI at once which would mean that any reference to implementation dates other than 1 January 2011 should be deleted from any MSC circular that might be issued on the basis of this UI; and
- .2 secondly, should develop for the same SOLAS regulation an additional UI dealing with issues like selective sampling, testing and removal, cleaning, decontamination, etc., which would facilitate retroactive work so that the implementation of regulation II-1/3-5 would be strengthened.

The delegation of the Netherlands indicated their willingness to cooperate with IACS and possibly other interested Member States or parties in the drafting of such an additional UI.

13.28 The delegation of Japan, referring to the outcome and discussion at the MEPC regarding the prohibition of asbestos under the Ship Recycling Convention, pointed out that six kinds of materials containing asbestos were listed as prohibited hazardous materials under the Convention. In addition, noting that threshold values of those contents were currently under consideration at the MEPC, the delegation expressed the view that consistency between

SOLAS and the Ship Recycling Convention was necessary and that, once the work at the MEPC had completed, a unified interpretation of the SOLAS requirement would be necessary.

13.29 Following lengthy consideration, the Sub-Committee, acknowledging the need for a unified interpretation, instructed the Secretariat, with the assistance of interested delegations, to finalize the unified interpretation as well as the associated draft MSC circular (DE 56/WP.1, annex) and agreed to a draft MSC circular on Unified interpretation of SOLAS regulation II-1/3-5, as set out in annex 11, for submission to MSC 90 for approval, bearing in mind that Member States and international organizations would have sufficient time to submit any comments on the draft circular to MSC 90.

Application of interpretations agreed by the Sub-Committee

13.30 With regard to the unified interpretations just agreed (see paragraphs 13.7, 13.23, 13.25 and 13.29), the Sub-Committee clarified that it was not the intention to apply these interpretations retrospectively and, therefore, agreed to insert a place holder for a date of application in paragraph 2 of each agreed draft circular, whereby the date of application should be the date of approval of the interpretation by the Committee.

Amendments to the ESP Code

13.31 The Sub-Committee considered document DE 56/13/10 (IACS), providing a link to the latest updates to IACS UR Z10 series and inviting the Sub-Committee to consider these for amending/updating the 2011 ESP Code.

13.32 Having discussed how to deal with updates to the IACS UR Z10 series regarding future amendments to the ESP Code, in order to avoid the build up of any backlog of such amendments, the Sub-Committee invited IACS to submit proposals on how to regularly amend the ESP Code based on the updated IACS UR Z10 series to the Committee, and agreed to inform the Committee of this course of action.

Amendments to mandatory instruments emanating from the adoption of the ESP Code

13.33 The Sub-Committee considered document DE 56/13 (Secretariat), containing draft consequential amendments, following the adoption of the ESP Code (resolution A.1049(27)), to the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)), the Performance standard for protective coatings for cargo oil tanks of crude oil tankers (resolution MSC.288(87)) and the Condition Assessment Scheme (CAS) (resolution MEPC.94(46), as amended), prepared by the Secretariat.

13.34 Following discussion, the Sub-Committee agreed to the draft amendments to the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)) and the Performance standard for protective coatings for cargo oil tanks of crude oil tankers (resolution MSC.288(87)), as set out in annexes 12 and 13, respectively, for submission to MSC 90 for approval in conjunction with the adoption of the proposed amendments to SOLAS regulation XI-1/2 scheduled for that session, which would make the ESP Code mandatory. The Sub-Committee also invited MEPC 64 to approve the draft amendments to the Condition Assessment Scheme (CAS) (resolution MEPC.94(46)), as set out in annex 14, with a view to adoption.

14 DEVELOPMENT OF GUIDELINES FOR USE OF FIBRE REINFORCED PLASTIC (FRP) WITHIN SHIP STRUCTURES

14.1 The Sub-Committee noted that MSC 87, having considered document MSC 87/24/9 (United Kingdom), proposing to develop guidelines for use of fibre reinforced plastic (FRP) within ship structures, had agreed to include the output in the biennial agendas of the FP and DE Sub-Committees, with a target completion year of 2013, assigning the Sub-Committee as the coordinating organ. The Sub-Committee also noted that MSC 88 had agreed to include the output in the provisional agendas for FP 55 and DE 56.

14.2 The Sub-Committee considered document DE 56/14 (Secretariat), reporting on the outcome of FP 55 related to this output and, in particular that, highlighting the prevalence of fire protection issues in the scope of the matter, FP 55 had invited the Committee to assign the FP Sub-Committee as the coordinating body for this work.

14.3 Having considered whether the coordination for the output should be transferred to the FP Sub-Committee, the Sub-Committee, noting various views on the issue, agreed that the FP Sub-Committee should coordinate the output. Consequently, the Sub-Committee also agreed to consider the output again at DE 58, when the outcome of the FP Sub-Committee in the matter was expected to be available. In the light of the above, the Sub-Committee agreed to delete the output from its biennial agenda and move it to the post-biennial agenda of the Committee.

15 REVISION OF TESTING REQUIREMENTS FOR LIFEJACKET RTDS IN RESOLUTION MSC.81(70)

15.1 The Sub-Committee recalled that DE 55, noting the general support for the relevant proposals submitted to that session, had acknowledged the urgent need to resolve the matter with high priority and invited Member States and international organizations to submit concrete proposals on the revision of testing requirements for lifejacket RTDs to this session.

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

- .1 DE 56/15 (United States), supporting the implementation of the RTD testing methodology for lifejackets, proposing amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70), as amended by resolution MSC.200(80)), and suggesting further amendment of the relevant instruments through a correspondence group to promote achievement of the RTD methodology's goal of improving repeatability of lifejacket testing;
- .2 DE 56/INF.8 (United States), providing an illustrative example of guidelines for validating the assembly of an adult RTD, to ensure that production RTDs are equivalent to the original prototype;
- .3 DE 56/INF.10 (United States), providing a sample of an updated standardized lifejacket test form reflecting the RTD test methodology set out in resolution MSC.200(80);
- .4 DE 56/15/1 (ISO), clarifying that ISO would explore revising its relevant standards to align with IMO requirements, and also possibly to look at alternative compliant designs;

- .5 DE 56/15/2 (France), proposing amendments to the LSA Code and resolution MSC.81(70) regarding testing requirements for lifejacket RTDs, based on the result of exchanges between interested parties;
- .6 DE 56/15/3 (ILAMA), stating that the lifejacket RTD is unsuitable based on the industry experience, proposed amendments to resolution MSC.81(70), as amended by resolution MSC.200(80);
- .7 DE 56/INF.15 (ILAMA), containing information on lifejacket RTD test results compiled from data submitted by the members of ILAMA; and
- .8 DE 56/15/4 (Canada), supporting the changes to the Revised recommendation on testing, proposed in document DE 56/15, and also supporting the need for a correspondence group to agree on additional refinements to annexes 1 to 3 of resolution MSC.200(80).

15.3 Having noted general support for further consideration of the matter, taking into account the documents submitted, the Sub-Committee invited interested parties to prepare terms of reference for a correspondence group regarding the revision of testing requirements for lifejacket RTDs, including a possible amendment to the LSA Code.

Instructions to the LSA Correspondence Group

15.4 The Sub-Committee instructed the LSA Correspondence Group, established under agenda item 5 (see paragraph 5.24), taking into account documents DE 54/15, DE 54/15/1 and Corr.1, DE 54/15/2, DE 54/15/3, DE 55/18, DE 55/18/1, DE 55/18/2, DE 56/15, DE 56/15/1, DE 56/15/2, DE 56/15/3, DE 56/15/4, DE 56/15/5, DE 56/INF.8, DE 56/INF.10 and DE 56/INF.15, to:

- .1 consider the improvement of testing procedures for the in-water performance of lifejackets using the RTD concept, in particular whether or not fixed minimum performance criteria would enhance the repeatability of tests; and
- .2 prepare draft amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)) and, if necessary, draft amendments to the LSA Code.

Extension of target completion year

15.5 In light of the above decisions, the Sub-Committee invited the Committee to extend the target completion year for the output to 2013.

16 AMENDMENTS TO SOLAS REGULATION II-1/11 AND DEVELOPMENT OF ASSOCIATED GUIDELINES TO ENSURE THE ADEQUACY OF TESTING ARRANGEMENTS FOR WATERTIGHT COMPARTMENTS

16.1 The Sub-Committee noted that MSC 86, having considered document MSC 86/23/13 (Cook Islands, Marshall Islands, IACS), proposing to develop amendments to SOLAS and associated Guidelines to ensure the adequacy of testing arrangements for watertight bulkheads to maintain the intended level of safety, had agreed to include the item in the post-biennial agenda of the Committee. MSC 89 decided to include the output in the biennial agenda of the Sub-Committee.

16.2 The Sub-Committee noted that paragraph 12 of document MSC 86/23/13 included concrete text for proposed amendments to SOLAS regulation II-1/11, i.e. addition of a new paragraph 5 which refers to Guidelines for procedures for testing tanks and tight boundaries, a first draft of which is attached in the annex to the document.

16.3 In this connection, the Sub-Committee also noted that SOLAS regulation II-1/11 requires the structural strength of watertight compartments to be confirmed by hydrostatic testing simulating the static pressure working on the compartment.

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

- .1 DE 56/16 and DE 56/INF.11 (IACS), providing a revised version of the draft Guidelines for procedures of testing tanks and tight boundaries (revision to the annex to document MSC 86/23/13), based on the boundary testing requirements in the current edition of IACS UR S14, to improve the clarity and user-friendliness of the Guidelines;
- .2 DE 56/16/1 (Japan), proposing to add a provision to paragraph 4.2.2 of the draft Guidelines, which requires shipyards to implement appropriate quality management systems, acceptable to the Administration;
- .3 DE 56/16/2 (Republic of Korea), proposing that a new paragraph be added to section 1 (General) of the draft Guidelines, to ensure that all shipyards have a quality system in place for implementation, which is at least equivalent to and not inferior to the latest edition of the ISO 9001 standards and acceptable to the Administration; and
- .4 DE 56/16/3 (China), proposing that the shipyard should establish and implement a quality management system in accordance with the ISO 9000 standard or equivalent, which is verified by the Administration of shipbuilding countries.

16.5 Having considered the above documents and having noted the general comments made on how best to proceed with the item, the Sub-Committee generally agreed to take the matter forward and require shipyards to implement appropriate quality management systems, such as at least ISO 9001 or equivalent, in order to ensure, as the overriding principle, an appropriate safety level.

16.6 With respect to the proposed draft Guidelines for procedures of testing tanks and watertight boundaries and the associated draft amendments to SOLAS regulation II-1/11, the Sub-Committee agreed that they needed further consideration.

16.7 Consequently, the Sub-Committee invited Member States and international organizations to submit comments and proposals to DE 57.

16.8 In this regard, the observer from EC highlighted the need to also address verification of quality management systems of shipyards; and the observer from IACS invited other interested parties to contact him*, with the details of the comments they made at this session and any further comments they may have on the draft Guidelines, for the possible preparation of a joint submission for DE 57.

17 REVISION OF THE RECOMMENDATION ON CONDITIONS FOR THE APPROVAL OF SERVICING STATIONS FOR INFLATABLE LIFERAFTS (RESOLUTION A.761(18))

17.1 The Sub-Committee noted that MSC 87, having considered document MSC 87/24/2 (Australia, Dominica, United Kingdom and ILAMA), proposing amendments to the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18)) to overcome an anomaly with regard to date-expired items in the contents of packed inflatable liferafts, following the promulgation of MSC.1/Circ.1328 (Guidelines for the approval of inflatable liferafts subject to extended service intervals not exceeding 30 months), had agreed to include the output in the biennial agenda of the DE Sub-Committee. MSC 89 subsequently decided to include the output in the provisional agenda for DE 56.

17.2 The Sub-Committee considered document DE 56/17 (ILAMA), proposing to amend paragraph 5.11 of the aforementioned Recommendation with regard to date-expired items in the contents of packed inflatable liferafts, in line with the provisions of MSC.1/Circ.1328, and also proposing to amend paragraphs 6.1.5 and 6.2.3.3 of MSC.1/Circ.1328, to ensure that the use of date-expired items does not prejudice the safety and survival of liferaft users.

17.3 Having noted further clarifications by the observer from ILAMA, the Sub-Committee, while noting that some delegations did not see any inconsistency between the Recommendation and the Guidelines, supported the need to amend them with regard to date expired items.

17.4 Consequently, the Sub-Committee invited Member States and international organizations to submit concrete proposals for amendments to the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18)) and the Guidelines for the approval of inflatable liferafts subject to extended service intervals not exceeding 30 months (MSC.1/Circ.1328) to DE 57.

18 DEVELOPMENT OF GUIDELINES FOR WING-IN-GROUND CRAFT

18.1 The Sub-Committee noted that MSC 88, having considered document MSC 88/23/11 (Republic of Korea), proposing to replace the Interim Guidelines for wing-in-ground (WIG) craft (MSC.1/Circ.1054) with updated final guidelines to promote the safe navigation of WIG craft worldwide through the application of agreed international standards, had agreed to include the output in the biennial agenda of the Sub-Committee, assigning the Sub-Committee as the coordinating organ, in cooperation with the FP,

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COMSAR, NAV, SLF and STW Sub-Committees. MSC 89 decided to include the output in the provisional agenda of this session.

18.2 The Sub-Committee considered document DE 56/18 (Republic of Korea), providing information and proposals on the development of final guidelines for WIG craft, and noted the views of several delegations that, while they supported the above proposals in principle and agreed that the Interim Guidelines required updating, further detailed consideration of the proposals contained in the document was necessary. In this connection, it was also noted that ICAO should be consulted with regard to proposed changes to the definition of WIG craft types.

18.3 The delegation of the Russian Federation, supporting the initiative by the Republic of Korea, stated that they could support some parts of the proposals in document DE 56/18, but that they had a large number of concrete proposals for amendments and requested that these proposals be attached to the report, as set out in annex 25. In this connection, the Secretariat, taking into account the Council's decisions regarding the need to reduce the burden of work, encouraged Member States and international organizations, in the future, to submit lengthy detailed proposals in writing to the session, in lieu of having such proposals attached to the Sub-Committee's report.

18.4 Having considered the above matters, the Sub-Committee invited Member States and international organizations to submit comments and proposals to DE 57 to progress the matter. In this regard, the delegation of the Republic of Korea invited other interested parties to contact them*, for possible preparation of a joint submission for DE 57.

19 REVISION OF THE REVISED GUIDELINES ON IMPLEMENTATION OF EFFLUENT STANDARDS AND PERFORMANCE TESTS FOR SEWAGE TREATMENT PLANTS (RESOLUTION MEPC.159(55))

General

19.1 The Sub-Committee recalled that DE 55 had established a correspondence group to finalize amendments to the Revised guidelines on implementation of effluent standards and performance tests for sewage treatment plants (resolution MEPC.159(55)) with the terms of reference set out in paragraph 17.9 of document DE 55/22.

Report of the correspondence group and related submissions

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

- .1 DE 56/19 (Germany), providing the report of the correspondence group on revision of resolution MEPC.159(55), annexing draft 2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants and also containing different views regarding nitrogen and phosphorous removal standards and other issues; and

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- .2 DE 56/19/1 (CLIA), commenting on document DE 56/19 with regard to the nitrogen and phosphorus removal standards in the draft Guidelines (paragraph 4.2), suggesting that the target limits for shore-based communities of 300 to 2,000 persons be applied by analogy and recommending that these guidelines prescribe Total Nitrogen Standards of 35 mg/l or at least 30 per cent reduction and Total Phosphorus Standards of 2.0 mg/l or at least 70 per cent reduction.

19.3 Concerning the two options on target limits for nitrogen and phosphorous removal standards, in particular whether those for shore-based communities of 300 to 2,000 persons or 2,000 to 10,000 persons should be applied, the Sub-Committee, having noted that views on the issue were evenly split, decided to keep the two options in the square brackets, for further consideration. The Sub-Committee also noted that incorporation of a dilution compensation factor Q_i/Q_e was not favoured.

Establishment of a working group

19.4 Recalling its relevant decision at DE 55, the Sub-Committee established the Working Group on Revision of resolution MEPC.159(55) and instructed it, taking into account comments made in plenary, to finalize the draft 2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants, based on the report of the correspondence group (DE 56/19) and taking into account document DE 56/19/1.

Report of the working group

19.5 Having considered the report of the working group (DE 56/WP.5), the Sub-Committee approved it in general and took action as described in the following paragraphs.

Draft MEPC resolution on 2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants

19.6 Following discussion, the Sub-Committee concurred with the incorporation of a dilution compensation factor Q_i/Q_e and agreed to a draft MEPC resolution on 2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants, as set out in annex 15, for submission to MEPC 64 for adoption, following consideration and decision on the square brackets in paragraph 4.2.1 of the draft Guidelines concerning the nitrogen and phosphorus removal standard; and noting that the Sub-Committee had agreed that the draft 2012 Guidelines should be applied from 1 January 2016. The Sub-Committee requested the Secretariat to effect any necessary editorial modifications when preparing the final text of the draft MEPC resolution as annexed to this report.

19.7 The delegation of Sweden reiterated its position regarding the dilution compensation factor and emphasized the importance of controlling dilution, if allowed.

Completion of the output

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

20 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR DE 57

General

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

20.2 The Sub-Committee also noted that MSC 89 and MEPC 62 had approved the revised Guidelines on the organization and method of work of the MSC and the MEPC and their subsidiary bodies (MSC-MEPC.1/Circ.4) and urged all those concerned to strictly follow the revised Guidelines.

Biennial agenda, post-biennial agenda and provisional agenda for DE 57

20.3 Taking into account the progress made during this session, the Sub-Committee prepared its draft revised biennial agenda for the 2012-2013 biennium, including items on the Committee's post-biennial agenda under the purview of the Sub-Committee, and the provisional agenda for DE 57 (DE 56/WP.2), based on the biennial agenda approved by MSC 89 and MEPC 62, which was further modified by the High-level Action Plan of the Organization and Priorities for the 2012-2013 Biennium (resolution A.1038(27)) (DE 56/2/2, annex), as set out in annexes 16 and 17, respectively, for approval by MSC 90.

20.4 Concerning the heavy workload of the Sub-Committee (e.g. number of agenda items at DE 57) pointed out by the delegation of Cyprus, the Sub-Committee noted the Chairman's comments that, though the Sub-Committee has managed to cope with many items successfully through efficient work and cooperation, measures for the prioritization of items were needed for Chairmen to achieve their objectives.

Arrangements for the next session

20.5 The Sub-Committee agreed to establish at DE 57 working/drafting groups on subjects to be selected from the following:

- .1 development of a new framework of requirements for life-saving appliances; making the provisions of MSC.1/Circ.1206/Rev.1 mandatory; and development of safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III;
- .2 development of a mandatory Code for ships operating in polar waters;
- .3 provisions for the reduction of noise from commercial shipping and its adverse impacts on marine life;
- .4 revision of the Standard specification for shipboard incinerators (resolution MEPC.76(40));
- .5 development of amendments to the LSA Code for thermal performance of immersion suits; revision of testing requirements for lifejacket RTDs; and revision of the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18));
- .6 development of guidelines for wing-in-ground craft;

- .7 amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments; and
- .8 development of amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations,

whereby the Chairman, taking into account the submissions received on the respective subjects, would advise the Sub-Committee well in time before DE 57 on the final selection of such groups.

20.6 The Sub-Committee established correspondence groups on the following subjects, due to report to DE 57:

- .1 LSA related matters (i.e. development of a new framework of requirements for life-saving appliances; making the provisions of MSC.1/Circ.1206/Rev.1 mandatory; development of amendments to the LSA Code for thermal performance of immersion suits; and revision of testing requirements for lifejacket RTDs);
- .2 development of a mandatory Code for ships operating in polar waters; and
- .3 provisions for the reduction of noise from commercial shipping and its adverse impacts on marine life.

Status of planned outputs

20.7 The Sub-Committee prepared the report on the status of planned outputs of the High-level Action Plan of the Organization and priorities for the 2012-2013 biennium relevant to the Sub-Committee, as set out in annex 18, and invited the Committees to note the status.

Date of the next session

20.8 The Sub-Committee noted that the fifty-seventh session of the Sub-Committee has been tentatively scheduled to take place from 18 to 22 March 2013.

Urgent matters to be considered by MSC 92

20.9 The Sub-Committee, having noted the close proximity between DE 57 and MSC 92, invited the Committee to agree that MSC 92 would consider only the following urgent matters emanating from DE 57, with the remainder being considered by MSC 93:

- .1 development of amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations;
- .2 making the provisions of MSC.1/Circ.1206/Rev.1 mandatory;
- .3 development of a new framework of requirements for life-saving appliances;
- .4 development of a mandatory Code for ships operating in polar waters;
- .5 classification of offshore industry vessels and consideration of the need for a non-mandatory Code for offshore construction support vessels; and

- .6 amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments.

21 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2013

21.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mrs. A. Jost (Germany) as Chairman and Mr. S. Ota (Japan) as Vice-Chairman, both for 2013.

22 ANY OTHER BUSINESS

Performance standards for protective coatings regarding dust size classes

22.1 The Sub-Committee considered document DE 56/22 (Russian Federation), containing proposals for amendment to resolutions MSC.215(82), MSC.244(83) and MSC.288(87) concerning performance standards for protective coatings (PSPCs), regarding dust size classes.

22.2 Having recalled that the issues raised in the above document had been discussed in detail when the PSPCs had been developed and noting that there was no support for the proposals, the Sub-Committee did not take any action in the matter other than inviting any interested parties to submit a proposal for a relevant new output to the Committee, as appropriate, in accordance with the Committees' Guidelines (MSC-MEPC.1/Circ.4).

Unified interpretations on the application of SOLAS, MARPOL and Load Lines requirements

22.3 The Sub-Committee considered document DE 56/22/1 (Secretariat), providing the outcome of MEPC 62's consideration of the Unified Interpretations on the application of SOLAS, MARPOL and LL requirements to conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers (MSC-MEPC.2/Circ.10), and noted that MEPC 62, when approving the UI developed by the Sub-Committee and approved by MSC 89, having considered a proposal by IACS that MSC.1/Circ.1284 (Unified interpretations of SOLAS regulations II-1/1.3 and II-1/3-6) should be revoked, since the circular contains interpretations of SOLAS regulations II-1/1.3 and II-1/3-6, which are included in the new circular, had agreed, in principle, with the proposal to revoke MSC.1/Circ.1284 but noted that this matter needed to be referred back to the MSC for consideration.

22.4 The Sub-Committee, in considering the matter, noted that there were slight differences between MSC-MEPC.2/Circ.10 and MSC.1/Circ.1284; that MSC.1/Circ.1284 may already have been applied; and that paragraph 2 of MSC-MEPC.2/Circ.10 clarifies the application of the unified interpretations.

22.5 Having also noted that the view of the observer from IACS that it was not necessary to revoke MSC.1/Circ.1284, the Sub-Committee invited MSC 90 to endorse the view that there was no need to revoke MSC.1/Circ.1284, however, that the unified interpretations of SOLAS regulations II-1/1.3 and II-1/3-6 contained in the circular should not be applied after the approval date of MSC-MEPC.2/Circ.10, i.e. 1 December 2011.

Measures to improve safe transport of solid bulk cargoes by ships

22.6 The Sub-Committee noted document DE 56/22/2 (Secretariat) regarding measures to improve the safe transport of solid bulk cargoes by ships, informing that DSC 16, noting that the immediate cause of the sinking of ships following liquefaction was loss of positive stability, had invited SLF 54 to consider the matter under its agenda item on intact stability and also invited the DE Sub-Committee to note the ongoing work on this issue, taking into account that mitigation measures, if any, would fall under the Sub-Committee's purview. In this regard, the Sub-Committee further noted that SLF 54, having noted views that there was insufficient information to proceed with the matter and that it would be premature to start considering the issue, had agreed to wait for the outcome of DE 56, IMSBC E&T 17 and DSC 17 and not to proceed with the work at this time.

22.7 The observer from INTERCARGO informed the Sub-Committee that, since DSC 16, there had been another casualty, the **Vinalines Queen**, on 25 December 2011, carrying nickel ore from Indonesia to China, with the loss of 22 lives; that developing new requirements would not solve the current problem; and that any distraction from addressing the root cause of these casualties should not be allowed. In their view, it was vital that dry bulk cargoes were loaded on to ships in an appropriate, safe condition in accordance with SOLAS chapter VI and the IMSBC Code; that stakeholders, particularly shippers, had a responsibility in achieving this, as highlighted in the Intercargo Guide for the Safe Loading of Nickel Ore (<http://www.intercargo.org/cargoes/127-nickel-ore.html>); and that, to stop the loss of life, they urged all stakeholders in the dry bulk trades to implement and enforce the extant regulations.

Development of measures to prevent loss of containers

22.8 The Sub-Committee noted document DE 56/22/2 (Secretariat) regarding the development of measures to prevent loss of containers, informing that, concerning strengthening of the requirements for lashing gear, DSC 16 had invited the Sub-Committee to consider the proposal to strengthen the requirements for lashing gear (MSC 89/22/11).

Development of requirements for onboard lifting appliances and winches

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

- .1 DE 56/2 (Secretariat) informed that MSC 89, with regard to the development of requirements for onboard lifting appliances and winches, having considered document MSC 89/22/12, proposing to develop SOLAS requirements and associated guidelines for the construction and installation of onboard lifting appliances and winches, agreed to include an output on "Development of requirements for onboard lifting appliances and winches" in the post-biennial agenda of the Committee, assigning the DE Sub-Committee as the coordinator;
- .2 DE 56/22/2 (Secretariat) reported that DSC 16 had considered document DSC 16/5/5 (ICHCA), providing information on the outcome of an investigation undertaken by ICHCA International regarding accidents involving ships' cranes, and that DSC 16 had agreed to forward the document to the Sub-Committee for consideration, taking into account the maintenance and design issues raised in the above document;

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- .3 DE 56/22/3 (ICHCA), concluding that the situation detailed in the aforementioned document DSC 16/5/5 had indicated a need for flag State involvement and that this can best be achieved by bringing ships' lifting appliances under the regime of SOLAS, proposed that SOLAS be amended to enable the provision, installation, care and maintenance of shipboard lifting appliances to be made subject to SOLAS and that such provision would need to take account of measures adopted by ILO in regard to the safety of dockworkers;
 - .4 DE 56/22/3 (Norway) contained proposals for deliverables on the development of requirements for onboard lifting appliances and winches, by providing deliverables on towing, anchor handling and stern lifting winches, also referring to the proposed amendments to part B of the Intact Stability Code for vessels engaged in towing and anchor handling operations, which had been considered by SLF 54;
 - .5 DE 56/22/6 (ISO), supporting the future work on the item and advising that ISO would examine all relevant standards to ensure alignment with IMO requirements;
 - .6 DE 56/INF.12 (Japan) provided information to be used in future discussions on the development of requirements for onboard lifting appliances and winches; and
 - .7 DE 56/INF.13 (Japan) contained a summary of the investigation report on a fatal accident due to a crane failure on board **Rickmers Jakarta**.

22.10 Having heard that many delegations supported the need to proceed with the matter and include the output in the agenda for DE 57, the Sub-Committee agreed to inform MSC 90 of the views expressed and to consider the matter further under agenda item 20.

Clarification of SOLAS application for steering gear trials

22.11 With regard to a clarification of the practical difficulties in the implementation of SOLAS regulations II-1/29.3.2 and II-1/29.4.2 (steering gear trials) for certain ship types, which was raised by Germany at DE 55, the Sub-Committee noted document DE 56/22/5 (Germany), proposing five options for further consideration to resolve these problems. It was noted that, although the matter may be clarified by an interpretation as an interim solution, Germany regarded an amendment to the SOLAS Convention as a necessary further development and intended to submit relevant information to MSC 90.

22.12 The Sub-Committee, having recognized that the issue had already been considered under agenda item 13 and a unified interpretation had been agreed upon (see paragraph 13.25), noted that some delegations supported options 1 to 4 as an interim solution and option 5, i.e. amendments to SOLAS regulation II-1/29, as a long-term solution.

New work items in ISO TC8/SC1

22.13 The Sub-Committee noted documents DE 56/INF.7 and Corr.1 (ISO), updating the Sub-Committee on the progress ISO was making on various standards, especially regarding marine evacuation systems (MES) and the ability of the new standards to include the latest advances in MES technology; and requesting the Sub-Committee to note that the new proposed standard for servicing of inflatable life-saving appliances would clarify various matters regarding time-expired contents of all items requiring regular servicing.

Outcome of BLG 16

Code of safety for ships using gas or other low-flash point fuels with properties similar to liquefied natural gas

22.14 The Sub-Committee noted information by the Secretariat with regard to the development of the draft International Code for Ships using Gas as Fuel (IGF Code), in particular that BLG 16, having considered the report of a working group (BLG 16/WP.5), had noted that there were no additional requirements in the draft text of the IGF Code for life-saving appliances over and above those in existing conventions, and invited the Sub-Committee to consider the need for additional or alternative requirements for life-saving appliances in ships covered by the IGF Code with a view to advising the BLG Sub-Committee accordingly (BLG 16/16, paragraphs 6.20 and 6.21).

Development of the revised IGC Code

22.15 The Sub-Committee also noted information by the Secretariat that, with regard to the development of the revised IGC Code, BLG 16 had endorsed a list of sections of the draft IGC Code to be forwarded to other IMO bodies for their input, as set out in annex 2 to document BLG 16/7 (BLG 16/16, paragraphs 7.10 and 7.11).

Incident off Kerala, India

22.16 With regard to an incident involving an Italian ship and an Indian fishing boat which occurred off Kerala, India, on 15 February 2012, the Sub-Committee noted statements by the delegations of Italy and India, as set out in annex 26.

Expression of condolence

22.17 The Chairman informed the Sub-Committee of the sudden and unexpected death of a valued colleague who regularly and actively participated in all IMO meetings for many years, Mr. Norman Lemley, pointing out that he had been well-known by all at IMO, first as a representative of the United States and later, following his retirement, supporting the Administration of Dominica with his vast knowledge and experience, and that his professionalism and technical knowledge, combined with a great sense of humour and integrity, had been widely recognized and acknowledged by his fellow delegates and the Secretariat alike. The Chairman asked the delegations of the United States and of Dominica to convey deep sympathy and heartfelt condolences to Norman's family, friends and colleagues on behalf of the IMO membership, the Secretariat and on her own behalf.

23 REVISION OF THE STANDARD SPECIFICATION FOR SHIPBOARD INCINERATORS (RESOLUTION MEPC.76(40))

23.1 The Sub-Committee noted that MEPC 62, having considered document MEPC 62/20 (Denmark), proposing to revise the Standard specification for shipboard incinerators (resolution MEPC.76(40)), as amended by resolution MEPC.93(45)), had approved the inclusion of a relevant output in the biennial agenda of the Sub-Committee, with a target completion year of 2012, and in the provisional agenda of DE 56.

23.2 Having noted that no relevant documents had been submitted to this session, the Sub-Committee considered the proposals in document MEPC 62/20, in particular whether an upper limit of the incinerator capacity is needed or whether the scope of the resolution should be extended so that it applies to incinerator plants with capacities of up to 3,000-5,000 kW rather than the current 1,500 kW.

Instructions to the Working Group on Revision of Resolution MEPC.159(55)

23.3 Having noted that the proposals in document MEPC 62/20 were generally supported, the Sub-Committee instructed the Working Group on Revision of Resolution MEPC.159(55), established under item 19 (see paragraph 19.4), to attempt to resolve the issues regarding the Standard specification for shipboard incinerators in relation to extending the scope of the resolution (i.e. from the current 1,500 kW to 3,000-5,000 kW), based on document MEPC 62/20, and, if this is not possible, to prepare a road map for preparing such draft amendments.

Report of the working group

23.4 Having considered the part of the report of the working group (DE 56/WP.5) dealing with the agenda item, the Sub-Committee endorsed the view of the group that the capacity limit for shipboard incinerators should be increased from 1,500 kW to 4,000 kW, and invited MEPC 64 to recommend to Member States that incinerators with a capacity greater than 1,500 kW and up to 4,000 kW can be type-approved under the existing Standard Specification for Shipboard Incinerators (resolution MEPC.76(40), as amended by resolution MEPC.93(45)).

23.5 Concerning the further work on the revision of the Standard specification, the Sub-Committee invited Member States and international organizations to submit comments and proposals to DE 57 to progress the matter.

23.6 Consequently, the Sub-Committee invited the MEPC to extend the target completion year for the output to 2013.

24 PROVISIONS FOR THE REDUCTION OF NOISE FROM COMMERCIAL SHIPPING AND ITS ADVERSE IMPACTS ON MARINE LIFE

24.1 The Sub-Committee recalled that, with regard to the instruction by MEPC 61 to consider the issue of noise from commercial shipping and its adverse impacts on marine life, DE 55, having noted that the majority of the delegations supported the development of separate technical guidelines to reduce noise from ships, had invited MEPC 62 to provide guidance on how to proceed with the matter and to establish a relevant new output on the Sub-Committee's biennial agenda.

24.2 The Sub-Committee noted that MEPC 62, having noted that it already had a planned output on "Provisions for the reduction of noise from commercial shipping and its adverse impacts on marine life" and also noting the support for this output as presented in document MEPC 62/11/10 (United States), had instructed the DE Sub-Committee to address the issue under this output, which would remain active as a distinct item on the MEPC's agenda. The Sub-Committee also noted that MEPC 62, due to time constraints, had agreed to postpone consideration of all documents submitted under that item to MEPC 63.

24.3 The Sub-Committee considered document DE 56/24 (United States), providing information on the issue of noise from commercial shipping and its adverse impact on marine life and offering recommendations and a framework concerning the development of non-mandatory, technical guidelines to minimize underwater noise, in particular identifying four specific high-focus areas that should be assessed for potential underwater noise reduction, i.e. propulsion, hull design, onboard machinery and operational modifications.

24.4 In considering the proposed framework, the Sub-Committee noted that many delegations supported the development of guidelines to minimize underwater noise and the establishment of a correspondence group to progress the matter intersessionally.

24.5 The observer from ISO advised the Sub-Committee of the ongoing effort at ISO, through Sub-Committee 2 (Marine Environmental Protection) of ISO Technical Committee 8 (Ships and Marine Technology) to develop a standard relating to the measurement of underwater sound radiated from the operation of marine platforms; that the work had progressed to the Draft International Standard (DIS) stage; that it had been given the designator ISO 16554 and that the publication of the final version of ISO 16554 was scheduled for the second half of 2012.

Establishment of a correspondence group

24.6 The Sub-Committee established a Correspondence Group on Minimizing Underwater Noise, under the coordination of the United States,* and instructed it to:

- .1 taking into account document DE 56/24 and the information contained in documents MEPC 59/19 and MEPC 60/18, giving special consideration to the priority focus areas identified in the two latter documents, continue to examine the available options for ship-quieting technologies and operational practices;
- .2 develop non-mandatory draft guidelines for reducing underwater noise from commercial ships; and
- .3 submit a report to DE 57.

25 REPORT TO THE MARITIME SAFETY COMMITTEE

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

- .1 approve the draft new SOLAS regulation III/17-1 on recovery of persons from the water with a view to adoption at MSC 91 (paragraph 3.8 and annex 1);
- .2 approve, in principle, the draft MSC resolution on Implementation of SOLAS regulation III/17-1 to ships other than those engaged in international voyages, with a view to adoption at MSC 91, in conjunction with the adoption of the draft new SOLAS regulation III/17-1 (paragraph 3.9 and annex 2);

*

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- .3 approve, in principle, the draft Guidelines for the development of plans and procedures for recovery of persons from the water, with a view to final approval at MSC 91, in conjunction with the adoption of the draft new SOLAS regulation III/17-1 (paragraph 3.10 and annex 3);
 - .4 with regard to the proposed weight of 82.5 kg/person stipulated in the aforementioned draft Guidelines, note that the Sub-Committee invited Member States and international organizations to submit any investigation results on the capacity of recovery equipment directly to the Committee, for its consideration when approving the draft Guidelines (paragraph 3.11);
 - .5 with regard to the draft new SOLAS regulation III/17-1, concur with the view of the Sub-Committee that it is not intended that compliance with these provisions would be verified, in terms of updates to the emergency preparedness plan required by paragraph 8 of part A of the ISM Code, until after the relevant application date as provided in paragraph 1 of the draft regulation; and also concur that the surveys referred to in the draft regulation are those related to the certificates issued in relation to SOLAS chapter III (paragraph 3.12);
 - .6 approve the draft MSC circular on Early implementation of the amendments to SOLAS regulation III/20.11.2, in conjunction with the adoption of amendments to SOLAS regulation III/20.11.2 (paragraph 5.8 and annex 4);
 - .7 with regard to the Guidelines for evaluation and replacement of lifeboat and retrieval systems (MSC.1/Circ.1392), endorse the Sub-Committee's view regarding paragraph 24.1 of the Guidelines (paragraph 5.14);
 - .8 endorse the Sub-Committee's agreement that viewing the results of evaluations of existing lifeboat release and retrieval systems contained in the new GISIS module should be open to the public (paragraph 5.16);
 - .9 with regard to amalgamation of MSC.1/Circ.1206/Rev.1 and MSC.1/Circ.1277 in a new mandatory instrument, endorse the Sub-Committee's agreement to limit the scope of the new instrument to lifeboat, rescue boats, fast rescue boats, launching appliances and release gears for those boats and liferafts (paragraph 5.22);
 - .10 approve the draft MSC circular on Unified Interpretation to paragraph 1.2.2.6 of the LSA Code concerning lifeboat exterior colour (paragraph 6.16 and annex 5);
 - .11 concur with the Sub-Committee's referral of the corresponding chapters of the draft Polar Code to COMSAR 16, FP 56, NAV 58, SLF 55 and STW 43 together with relevant explanatory comments (DE 56/WP.4, annex 2) for consideration and advice to DE 57, as appropriate (paragraph 10.25);
 - .12 note the Sub-Committee's invitation to Member States and international organizations to ensure attendance at the respective sessions of the aforementioned sub-committees, by specialists having the necessary expertise, in order to expedite the development of the draft Polar Code (paragraph 10.28);

- .13 note the Sub-Committee's view that the MSC and the MEPC should prioritize their discussion on how to make the Polar Code mandatory in a most expeditious way possible (paragraphs 10.31 and 25.2.2);
- .14 approve the draft Code on noise levels on board ships, together with the associated draft new SOLAS regulation II-1/3-12 to make the Code mandatory, with a view to adoption at MSC 91 (paragraphs 11.9 and 11.13, and annexes 6 and 7);
- .15 approve the draft MSC circular on Unified interpretation of SOLAS regulation II-1/3-2 (paragraph 13.7 and annex 8);
- .16 approve the draft MSC circular on Unified interpretation of SOLAS regulation II-1/48.3 (paragraph 13.23 and annex 9);
- .17 approve the draft MSC circular on Unified interpretation of SOLAS regulations II-1/29.3 and 29.4 (paragraph 13.25 and annex 10);
- .18 approve the draft MSC circular on Unified interpretation of SOLAS regulation II-1/3-5 (paragraph 13.29 and annex 11);
- .19 note the Sub-Committee's course of action to invite IACS to submit proposals to the Committee on how to regularly amend the 2011 ESP Code based on the updated IACS UR Z10 series (paragraph 13.32);
- .20 approve the draft amendments to the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)) and the Performance standard for protective coatings for cargo oil tanks of crude oil tankers (resolution MSC.288(87)), in conjunction with the adoption of the proposed amendments to SOLAS regulation XI-1/2 under agenda item 3 (paragraph 13.34 and annexes 12 and 13);
- .21 note that the Sub-Committee concurred with the request of FP 55 to assign the FP Sub-Committee as the coordinating body for the output on "Development of guidelines for use of fibre reinforced plastic (FRP) within ship structures" (paragraph 14.3);
- .22 approve the draft revised biennial agenda for the 2012-2013 biennium, including items on the Committee's post-biennial agenda under the purview of the Sub-Committee, and the proposed provisional agenda for DE 57 (paragraph 20.3 and annexes 16 and 17);
- .23 concerning the heavy workload of the Sub-Committee, note the Chairman's comments that measures for the prioritization of outputs are needed for the Chairmen to achieve their objectives (paragraph 20.4);
- .24 note the report on the status of planned outputs of the High-level Action Plan of the Organization and priorities for the 2012-2013 biennium relevant to the Sub-Committee (paragraph 20.7 and annex 18);
- .25 agree on the urgent matters emanating from DE 57 to be reported to MSC 92 (paragraph 20.9);

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- .26 endorse the Sub-Committee's view that there is no need to revoke MSC.1/Circ.1284 following the approval of MSC-MEPC.2/Circ.10 and that the unified interpretations of SOLAS regulations II-1/1.3 and II-1/3-6 contained in MSC.1/Circ.1284 should not be applied after the approval date of MSC-MEPC.2/Circ.10, i.e. 1 December 2011 (paragraph 22.5); and
- .27 approve the report in general.
- 25.2 The Marine Environment Protection Committee, at its sixty-fourth session, is invited to:
- .1 note the Sub-Committee's decision to keep any decision on environmental requirements to be included in the draft Polar Code in abeyance, pending further consideration at its next session (paragraph 10.29);
- .2 note with the Sub-Committee's view that the MSC and the MEPC should prioritize their discussion on how to make the Polar Code mandatory in the most expeditious way possible (paragraphs 10.31 and 25.1.13);
- .3 approve the draft amendments to the Condition Assessment Scheme (CAS) (resolution MEPC.94(46)), emanating from the adoption of the ESP Code (resolution A.1049(27)), with a view to adoption at MEPC 65 (paragraph 13.34 and annex 14);
- .4 adopt the draft MEPC resolution on 2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants, deciding on the square brackets in paragraph 4.2.1 and the application date (paragraph 19.6 and annex 15); and
- .5 endorse the recommendation of the Sub-Committee that incinerators with a capacity greater than 1,500 kW and up to 4,000 kW can be type-approved under the existing Standard Specification for Shipboard Incinerators (resolution MEPC.76(40), as amended by resolution MEPC.93(45)) (paragraph 23.4).

ANNEX 1

DRAFT NEW SOLAS REGULATION III/17-1

- 1 After existing regulation 17, the following new regulation 17-1 is inserted:

**"Regulation 17-1
Recovery of persons from the water**

1 All ships shall have ship-specific plans and procedures for recovery of persons from the water, taking into account the guidelines developed by the Organization.* The plans and procedures shall identify the equipment intended to be used for recovery purposes and measures to be taken to minimize the risk to shipboard personnel involved in recovery operations. Ships constructed before [1 July 2014] shall comply with this requirement by the first intermediate or first renewal survey of the ship to be carried out after [1 July 2014], whichever comes first.

2 Ro-ro passenger ships which comply with regulation 26.4 shall be deemed to comply with this regulation.

* Refer to the Guidelines for the development of plans and procedures for recovery of persons from the water (MSC.1/Circ...)."

ANNEX 2

DRAFT MSC RESOLUTION

**APPLICATION OF SOLAS REGULATION III/17-1 TO SHIPS OTHER
THAN THOSE ENGAGED IN INTERNATIONAL VOYAGES**

THE MARITIME SAFETY COMMITTEE,

NOTING that, at its ninety-first session, it adopted, by resolution MSC...(91), amendments to chapter III of the International Convention for the Safety of Life at Sea (SOLAS), 1974, in regard to the requirement for ships engaged on international voyages to have plans and procedures for the recovery of persons from the water,

NOTING ALSO that, in emergency situations of distress, ships responding to a distress call involving recovery of persons from the water may not necessarily be engaged on international voyages and may be those to which SOLAS chapter III does not apply,

1. AGREES that it is beneficial in an emergency situation where the operation for the recovery of persons from water is required, that ships to which SOLAS chapter III does not apply have plans and procedures for recovery of persons from the water;

2 INVITES the Contracting Governments to SOLAS to determine to what extent the provisions of SOLAS regulation III/17-1 should apply to the following categories of ships:

- .1 cargo ships below 500 gross tonnage engaged on any voyage;
- .2 cargo ships of 500 gross tonnage and above not engaged on international voyages;
- .3 passenger ships not engaged on international voyages;
- .4 fishing vessels;
- .5 high-speed craft under the 1994 and 2000 HSC Codes;
- .6 dynamically supported craft under the DSC Code;
- .7 special purpose ships under the 2008 SPS Code; and
- .8 mobile offshore drilling units under the 2009 MODU Code.

ANNEX 3

DRAFT MSC CIRCULAR

**GUIDELINES FOR THE DEVELOPMENT OF PLANS AND PROCEDURES
FOR RECOVERY OF PERSONS FROM THE WATER**

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], approved the Guidelines for the development of plans and procedures for recovery of persons from the water, set out in the annex, aiming at providing additional guidance on the application of the requirements in SOLAS regulation III/17-1.

2 Member Governments are invited to bring the annexed Guidelines to the attention of all interested parties.

ANNEX

GUIDELINES FOR THE DEVELOPMENT OF PLANS AND PROCEDURES FOR RECOVERY OF PERSONS FROM THE WATER

1 General

1.1 Life-saving and other equipment carried on board may be used to recover persons from the water, even though this may require using such equipment in unconventional ways.

1.2 These Guidelines should be read in conjunction with the Guide to recovery techniques (MSC.1/Circ.1182) and the Guide for cold water survival (MSC.1/Circ.1185)*.

1.3 In particular the Guide to recovery techniques (MSC.1/Circ.1182) provides a number of examples of how certain types of equipment can be used to provide this functionality, and can be used for the development of plans and procedures for recovery of persons from the water.

1.4 The initiation or continuation of recovery operations should be at the discretion of the Master of the recovering ship, in accordance with the provisions of SOLAS regulation III/17-1.

1.5 The plans and procedures should be considered as a part of the emergency preparedness plan required by paragraph 8 of part A of the International Safety Management (ISM) Code.

2 Matters to be considered when developing the plans and procedures

2.1 A risk assessment should be conducted and documented when developing plans and procedures for recovery of persons from the water, including equipment intended to be used, taking into account the anticipated conditions and ship-specific characteristics.

2.2 The recovery plans and procedures should facilitate the transfer of persons from the water to the ship, while minimizing the risk of injury from impact with the ship's side or other structures, including the recovery appliance itself.

2.3 To the extent practicable, the recovery procedures should provide for recovery of persons in a horizontal or near-horizontal ("deck-chair") position. Recovery in a vertical position should be avoided whenever possible as it risks cardiac arrest in hypothermic casualties (refer to MSC.1/Circ.[1185]*).

2.4 If carried, dedicated recovery equipment should be clearly marked with the maximum number of persons it can accommodate, based on a weight of 82.5 kg per person.

2.5 Recovery operations should be conducted at a position clear of the ship's propellers and, as far as practicable, within the ship's parallel mid-body section.

2.6 A source of illumination and, where required, a source of power should be available for the area where the recovery operation is conducted.

* Or the new Guide expected to be finalized at COMSAR 16, for submission to MSC 91 for approval.

2.7 Ship-specific procedures for the recovery of persons from the water should specify the anticipated conditions under which a recovery operation may be conducted without causing undue hazard to the ship and the ship's crew, taking into account, but not limited to:

- .1 manoeuvrability of the ship;
- .2 freeboard of the ship;
- .3 points on the ship to which casualties may be recovered;
- .4 characteristics and limitations of equipment intended to be used for recovery operations;
- .5 available crew and personal protective equipment (PPE);
- .6 wind force, direction and spray;
- .7 significant wave height (H_s);
- .8 period of waves;
- .9 swell; and
- .10 safety of navigation.

3 Competence and familiarization

Drills should ensure that crew are familiar with the plans, procedures and equipment for recovery of persons from the water. Such drills may be conducted in conjunction with routine man-overboard drills.

ANNEX 4

DRAFT MSC CIRCULAR

EARLY IMPLEMENTATION OF THE AMENDMENTS TO SOLAS REGULATION III/20.11.2

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], adopted, by resolution MSC.[...(90)], amendments to SOLAS regulation III/20.11.2, concerning the operational testing of free-fall lifeboat release systems.

2 In adopting the aforementioned amendments, the Committee agreed to the recommendation by the Sub-Committee on Ship Design and Equipment, at its fifty-sixth session (13 to 17 February 2012), that parties concerned should be encouraged to implement the amendments to SOLAS regulation III/20.11.2 at the earliest possible opportunity.

3 Member Governments and shipowners are invited to take account of this circular and bring it to the attention of all parties concerned.

ANNEX 5

DRAFT MSC CIRCULAR

**UNIFIED INTERPRETATION OF PARAGRAPH 1.2.2.6 OF THE LSA CODE
CONCERNING LIFEBOAT EXTERIOR COLOUR**

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], with a view to ensuring a uniform approach towards the application of the provisions of paragraph 1.2.2.6 of the LSA Code, and following a recommendation made by the Sub-Committee on Ship Design and Equipment, at its fifty-sixth session, approved the following unified interpretations concerning the lifeboat exterior colour, taking into account sections 4.5.2 and 4.6.2 of the LSA Code:

"Highly visible colour" only includes colours of strong chromatic content, i.e. pure achromatic colours such as white and all shades of grey should not be accepted as "comparable" colours.

The above is applicable to the exterior of the rigid watertight enclosure of totally enclosed lifeboats and the exterior of the canopy of partially enclosed lifeboats.

2 Member Governments are invited to use the interpretations from [date of approval] when applying the relevant provisions of paragraph 1.2.2.6 of the LSA Code and to bring them to the attention of all parties concerned.

ANNEX 6

DRAFT CODE ON NOISE LEVELS ON BOARD SHIPS

PREAMBLE

CHAPTER 1 – GENERAL

- 1.1 Scope
- 1.2 Purpose
- 1.3 Application
- 1.4 Definitions

CHAPTER 2 – MEASURING EQUIPMENT

- 2.1 Equipment specifications
- 2.2 Use of equipment

CHAPTER 3 – MEASUREMENT

- 3.1 General
- 3.2 Personnel requirements
- 3.3 Operating conditions at sea trials
- 3.4 Operating conditions in port
- 3.5 Environmental conditions
- 3.6 Measurement procedures
- 3.7 Determination of noise exposure
- 3.8 Calibration
- 3.9 Measurement uncertainties
- 3.10 Points of measurement
- 3.11 Measurements in machinery spaces
- 3.12 Measurements in navigation spaces
- 3.13 Measurements in accommodation spaces
- 3.14 Measurements in normally unoccupied spaces

CHAPTER 4 – MAXIMUM ACCEPTABLE SOUND PRESSURE LEVELS

- 4.1 General
- 4.2 Noise level limits
- 4.3 Survey report

CHAPTER 5 – NOISE EXPOSURE LIMITS

- 5.1 General
- 5.2 Conservation of hearing and use of hearing protectors
- 5.3 Limits of exposure of seafarers to high noise levels
- 5.4 24-hour equivalent continuous sound level limit
- 5.5 Hearing conservation programme

CHAPTER 6 – ACOUSTIC INSULATION BETWEEN ACCOMMODATION SPACES

- 6.1 General
- 6.2 Sound insulation index
- 6.3 Erection of materials

CHAPTER 7 – HEARING PROTECTION AND WARNING INFORMATION

- 7.1 General
- 7.2 Requirements for hearing protectors
- 7.3 Selection and use of hearing protectors
- 7.4 Warning notices

APPENDIX 1 FORMAT FOR NOISE SURVEY REPORT

APPENDIX 2 GUIDANCE ON THE INCLUSION OF NOISE ISSUES IN SAFETY
MANAGEMENT SYSTEMS

APPENDIX 3 SUGGESTED METHODS OF ATTENUATING NOISE

APPENDIX 4 SIMPLIFIED PROCEDURE FOR DETERMINING NOISE EXPOSURE

PREAMBLE

1 The Code on noise levels on board ships (hereinafter referred to as the Code) has been developed to provide international standards for protection against noise regulated by regulation [II-1/3-12] of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended. Although the Code is legally treated as a mandatory instrument under the SOLAS Convention, certain provisions of the Code remain recommendatory or informative (see paragraph 1.1.3).

2 These regulations, recommendations and advice are intended to provide Administrations with the tools to promote "hearing saving" environments on board ships. This is, however, a dynamic topic, dealing with the human and technical environments in which they interface. Rules and recommendations will necessarily evolve, on a case-by-case basis, as a result of various technological as well as safety management practice developments. For this reason Administrations are encouraged to pass on experience and information received from recognized organizations, ship operators and equipment designers to improve this Code.

3 The Code has been developed having regard to conventional passenger and cargo ships. While certain types and sizes of ships have been excluded from its application, it should be recognized that full application to ships which differ appreciably from the conventional types of ships regarding design or operations might need specific consideration.

4 The Organization adopted a Recommendation on methods of measuring noise levels at listening posts (resolution A.343(IX)), which this Code is not intended to supersede. That Recommendation relates to interference by shipborne noise with the proper reception of external audible navigation signals and although the methods of measuring noise levels in accordance with the Recommendation and with the Code differ, these documents are to be considered compatible inasmuch as this Code is concerned primarily with the effect of noise on health and comfort. Care will be needed to ensure that there is compatibility between the general requirements and the requirements for audibility of navigation signals.

CHAPTER 1 – GENERAL

1.1 Scope

1.1.1 The Code is intended to provide standards to prevent the occurrence of potentially hazardous noise levels on board ships and to provide standards for an acceptable environment for seafarers. These standards were developed to address passenger and cargo ships. Since some sizes and certain service types of ships have been exempted from these requirements; it should be recognized that full application of the Code to ships that differ appreciably from conventional ships will require special considerations. The Code is intended to provide the basis for a design standard, with compliance based on the satisfactory conclusion of sea trials that result in issuance of a Noise Survey Report. Ongoing operational compliance is predicated on the crew being trained in the principles of personal protection and maintenance of mitigation measures. These would be enforced under the dynamic processes and practices put in place under SOLAS chapter IX.

1.1.2 Requirements and recommendations are made for:

- .1 measurement of noise levels and exposure;
- .2 protecting the seafarer from the risk of noise-induced hearing loss under conditions where at present it is not feasible to limit the noise to a level which is not potentially harmful;
- .3 limits on acceptable maximum noise levels for all spaces to which seafarers normally have access; and
- .4 verification of acoustic insulation between accommodation spaces.

1.1.3 Although this Code is legally treated as a mandatory instrument under the SOLAS Convention, the following provisions of this Code remain recommendatory, options for compliance, or informative in nature:

Section 1.3.2 and 1.3.3
Section 3.4.3
Chapter 5
Section 6.3
Section 7.3
Appendix 2
Appendix 3
Appendix 4

1.2 Purpose

The purpose of the Code is to limit noise levels and to reduce seafarers' exposure to noise, in order to:

- .1 provide for safe working conditions by giving consideration to the need for speech communication and for hearing audible alarms, and to an environment where clear-headed decisions can be made in control stations, navigation and radio spaces and manned machinery spaces;
- .2 protect the seafarer from excessive noise levels which may give rise to a noise-induced hearing loss; and

- .3 provide the seafarer with an acceptable degree of comfort in rest, recreation and other spaces and also provide conditions for recuperation from the effects of exposure to high noise levels.

1.3 Application

1.3.1 The Code applies to new ships of 1,600 gross tonnage and above.

1.3.2 The specific provisions relating to potentially hazardous noise levels, mitigation and personal protective gear contained in the Code may be applied to existing ships of 1,600 gross tonnage and above, as far as reasonable and practical, to the satisfaction of the Administration.

1.3.3 The Code may be applied to new ships of less than 1,600 gross tonnage, as far as reasonable and practical, to the satisfaction of the Administration.

1.3.4 The Code does not apply to:

- .1 dynamically supported craft;
- .2 high-speed craft;
- .3 fishing vessels;
- .4 pipe-laying barges;
- .5 crane barges;
- .6 mobile offshore drilling units;
- .7 pleasure yachts not engaged in trade;
- .8 ships of war and troopships;
- .9 ships not propelled by mechanical means;
- .10 pile driving barge; and
- .11 dredgers.

1.3.5 The Code applies to ships in service, i.e. in port or at sea with seafarers on board.

1.3.6 Dispensations from certain requirements may in special circumstances be granted by the Administration, if it is documented that compliance will not be possible despite relevant and reasonable technical noise reduction measures. Such dispensation shall not include cabins, unless exceptional circumstances prevail. If dispensation is granted, it shall be ensured that the goal of this Code is achieved, and the noise exposure limits shall be considered in conjunction with chapter 5.

1.3.7 For ships designed for and employed on voyages of short duration, or on other services involving short periods of operation of the ship, to the satisfaction of the Administration, sections 4.2.3 and 4.2.4 may be applied only with the ship in the port condition, provided that the periods under such conditions are adequate for seafarers' rest and recreation.

1.3.8 The Code is not intended to apply to passenger cabins and other passenger spaces, except in so far as they are work spaces and are covered by the provisions of the Code.

1.3.9 In case of repairs, alterations and modifications of a major character and outfitting related thereto of existing ships, it shall be ensured that areas, in which changes have been made, meet the requirements of this Code for new ships, insofar as the Administration deems reasonable and practicable.

1.3.10 The Code covers only noise sources related to the ship such as machinery and propulsion but does not include wind/wave/ice noise, alarms, public address systems, etc.

1.4 Definitions

For the purpose of the Code the following definitions apply. Additional definitions are given elsewhere in the Code.

1.4.1 *Accommodation spaces*: Cabins, offices (for carrying out ship's business), hospitals, messrooms, recreation rooms (such as lounges, smoke rooms, cinemas, gymnasiums, libraries and hobbies and games rooms) and open recreation areas to be used by seafarers.

1.4.2 *Apparent weighted sound reduction index R'_w* : A single number value expressed in decibels (dB) which describes the overall sound insulation performance in situ of walls, doors or floors provides (see ISO 717-1:1996 as amended by 1:2006).

1.4.3 *A-weighted equivalent continuous sound level $L_{Aeq}(T)$* : A-weighted sound pressure level of a continuous steady sound that, within a measurement time interval, T, has the same mean square sound pressure as a sound under consideration which varies with time. It is expressed in decibels A (dB(A)) and is given by the following equation:

$$L_{Aeq,T} = 10 \log \frac{1}{T} \int_0^T \frac{p_a(t)^2}{p_0^2} \cdot dt$$

where: T = measurement time
 $p_a(t)$ = A-weighted instantaneous sound pressure
 p_0 = 20 μ Pa (the reference level).

1.4.4 *A-weighted sound pressure level or noise level*: The quantity measured by a sound level meter in which the frequency response is weighted according to the A-weighting curve (see IEC 61672-1).

1.4.5 *C-weighted equivalent continuous sound level $L_{Ceq}(T)$* : C-weighted sound pressure level of a continuous steady sound that within a measurement time interval, T, has the same mean square sound pressure as a sound under consideration which varies with time. It is expressed in decibels C (dB(C)) and is given by the following equation:

$$L_{Ceq,T} = 10 \log \frac{1}{T} \int_0^T \frac{p_c(t)^2}{p_0^2} \cdot dt$$

where: T = measurement time
 $p_c(t)$ = C-weighted instantaneous sound pressure
 p_0 = 20 μ Pa (the reference level).

1.4.6 *C-weighted peak sound level* L_{Cpeak} : C-weighted maximum instantaneous sound pressure level. It is expressed in decibels C (dB(C)) and is given by the following equation:

$$L_{Cpeak} = 10 \log \frac{p_{peak}^2}{p_0^2}$$

where: p_{peak} = C-weighted maximum instantaneous sound pressure
 p_0 = 20 μ Pa (the reference level).

1.4.7 *C-weighted sound pressure level or noise level*: The quantity measured by a sound level meter in which the frequency response is weighted according to the C-weighting curve (see IEC 61672-1 (2002-05)).

1.4.8 *Continuously manned spaces*: Spaces in which the continuous or prolonged presence of seafarers is necessary for normal operational periods.

1.4.9 *Crane barge*: A vessel with permanently installed cranes designed principally for lifting operations.

1.4.10 *Daily noise exposure level* ($L_{ex,24h}$) represents the equivalent noise exposure level for a period of 24 hours.

$$L_{ex,24h} = L_{Aeq,T} + 10 \log(T/T_0)$$

where: T is the effective duration on board
 T_0 is the reference duration 24 h.

The total equivalent continuous A-weighted sound pressure level ($L_{Aeq,T}$), shall be calculated by using the different noise levels (L_{Aeq,T_i}) and associated time periods with the following equation:

$$L_{Aeq,T} = 10 \lg \left[\frac{1}{T} \sum_{i=1}^n (T_i \times 10^{0,1L_{Aeq,T_i}}) \right]$$

where

L_{Aeq,T_i} is the equivalent continuous A-weighted sound pressure level, in decibels, averaged over time interval T_i ;

$$T = \sum_{i=1}^n T_i$$

$L_{ex,24h} = L_{Aeq,24h}$ when seafarers are on board over a period of 24 hours.

1.4.11 *Duty stations*: Those spaces in which the main navigating equipment, the ship's radio or the emergency source of power are located or where the fire recording or fire control equipment is centralized and also those spaces used for galleys, main pantries, stores (except isolated pantries and lockers), mail and specie rooms, workshops other than those forming part of the machinery spaces and similar such spaces.

1.4.12 *Dynamically supported craft*: A craft which is operable on or above water and which has characteristics different from those of conventional displacement ships. Within the aforementioned generality, a craft which complies with either of the following characteristics:

- .1 the weight, or a significant part thereof, is balanced in one mode of operation by other than hydrostatic forces;
- .2 the craft is able to operate at speeds such that the function $\frac{v^3}{Lg}$ is equal to or greater than 0.9, where "v" is the maximum speed, "L" is the water-line length and "g" is the acceleration due to gravity, all in consistent units.

1.4.13 *Existing ship*: A ship which is not a new ship.

1.4.14 *Fishing vessel*: A vessel used commercially for catching fish, whales, seals, walrus or other living resources of the sea.

1.4.15 *Hearing loss*: Hearing loss is evaluated in relation to a reference auditory threshold defined conventionally in ISO Standard 389-1 (1998). The hearing loss corresponds to the difference between the auditory threshold of the subject being examined and the reference auditory threshold.

1.4.16 *Hearing protector*: A device worn to reduce the level of noise reaching the ears. Passive noise-cancelling headsets block noise from reaching the ear. Active noise-cancelling headphones generate a signal that cancels out the ambient noise within the headphone.

1.4.17 *Integrating sound level meter*: A sound level meter designed or adapted to measure the level of the mean squared time averaged A-weighted and C-weighted sound pressure.

1.4.18 *Machinery spaces*: Any space which contains steam or internal-combustion machinery, pumps, air compressors, boilers, oil fuel units, major electrical machinery, oil filling stations, thrusters, refrigerating, stabilizing, steering gear, ventilation and air conditioning machinery, etc., and trunks to such spaces.

1.4.19 *Mobile offshore drilling unit*: A vessel capable of engaging in drilling operations for the exploration for, or exploitation of, resources beneath the seabed, such as liquid or gaseous hydrocarbons, sulphur or salt.

1.4.20 *Navigating bridge wings*: Those parts of the ship's navigating bridge extending towards the ship's sides.

1.4.21 *New ship*: means a ship the keel of which is laid, or which is at a similar stage of construction, on or after the [date of coming into force of this Code].

1.4.22 *Noise*: For the purpose of the Code all sound which can result in hearing impairment, or which can be harmful to health or be otherwise dangerous or disruptive.

1.4.23 *Noise induced hearing loss*: A hearing loss, originating in the nerve cells within the cochlea, attributable to the effects of sound.

1.4.24 *Noise level*: See A-weighted sound pressure level (1.4.4).

1.4.25 *Occasional exposures*: Those exposures typically occurring once per week, or less frequently.

1.4.26 *Pipe-laying barge*: A vessel specifically constructed for, or used in conjunction with, operations associated with the laying of submarine pipelines.

1.4.27 *Port condition*: The condition in which all machinery solely required for propulsion is stopped.

1.4.28 *Potentially hazardous noise levels*: Those levels at and above which persons exposed to them without protection are at risk of sustaining a noise induced hearing loss.

1.4.29 *Repairs, alterations and modifications of a major character*: means a conversion of a ship which substantially alters the dimensions, carrying capacity or engine power of the ship, which change type of the ship, which otherwise so alters the ship that, if it were a new ship, it would become subject to the relevant provisions.

1.4.30 *Sound*: Energy that is transmitted by pressure waves in air or other materials and is the objective cause of the sensation of hearing.

1.4.31 *Sound pressure level L_p or SPL*: Sound pressure level expressed in decibel (dB), of a sound or noise given by the following equation:

$$L_p = 10 \log \frac{p^2}{p_0^2}$$

where: p = sound pressure, in Pascal
 p_0 = 20 μ Pa (the reference level).

1.4.32 *Voyages of short duration*: Voyages where the ship is not generally underway for periods long enough for seafarers to require sleep, or long off-duty periods, during the voyages.

1.4.33 *Weighted sound reduction index, R_w* : A single number value expressed in decibels (dB) which describes the overall sound insulation performance (in laboratory) of walls, doors or floors provides (see ISO 717-1:1997 as amended by 1:2006).

CHAPTER 2 – MEASURING EQUIPMENT

2.1 Equipment specifications

2.1.1 Sound level meters

Measurement of sound pressure levels shall be carried out using precision integrating sound level meters subject to the requirements of this chapter. Such meters shall be manufactured to IEC 61672-1(2002-05)¹ type/class 1 standard as applicable, or to an equivalent standard acceptable to the Administration².

¹ Recommendation for sound level meters.

² Sound level meters class/type 1 manufactured according to IEC Publication IEC 651/IEC 804 may be used until [End date of 2-year transition period from date of Code coming into force].

2.1.2 Octave filter set

When used alone, or in conjunction with a sound level meter, as appropriate, an octave filter set shall conform to IEC 61260 (1995)³ or an equivalent standard acceptable to the Administration.

2.2 Use of equipment

2.2.1 Calibration

Sound calibrators shall comply with the standard IEC 60942 (2003-01) and shall be approved by the manufacturer of the sound level meter used.

2.2.2 Check of measuring instrument and calibrator

Calibrator and sound level meter shall be verified at least every two years by a national standard laboratory or a competent laboratory accredited according to ISO 17025 (2005) as corrected by (Cor 1:2006).

2.2.3 Microphone wind screen

A microphone wind screen shall be used when taking readings outside, e.g. on navigating bridge wings or on deck, and below deck where there is any substantial air movement. The wind screen should not affect the measurement level of similar sounds by more than 0.5 dB(A) in "no wind" conditions.

CHAPTER 3 – MEASUREMENT

3.1 General

3.1.1 On completion of the construction of the ship, or as soon as practicable thereafter, measurement of noise levels in all spaces specified in chapter 4 shall take place under the operating conditions specified in 3.3 and 3.4 and shall be suitably recorded as required by 4.3.

3.1.2 Measurements of the A-weighted equivalent continuous sound level, $L_{Aeq}(T)$ shall be made for the purpose of ensuring compliance with chapter 4.

3.1.3 Measurements of the C-weighted equivalent continuous sound level $L_{Ceq}(T)$ and the C-weighted peak sound level L_{Cpeak} shall be made in spaces where $L_{Aeq}(T)$ exceeds 85 dB(A) for the purpose of determining appropriate hearing protection according to the HML-method, see chapter 7 and appendix 2.

3.2 Personnel requirements

3.2.1 In order to ensure an acceptable and comparable quality of the measurement results and the reports the measuring institutes or experts shall prove their competence with view to noise measurements.

³ Octave-band and fractional-octave-band filters.

3.2.2 This person conducting measurements shall have⁴:

- .1 knowledge in the field of noise, sound measurements and handling of used equipment;
- .2 training concerning the procedures specified in this Code.

3.3 Operating conditions at sea trials

3.3.1 Measurements should be taken with the ship in the loaded or ballast condition. The course of the vessel shall be as straight as possible. The actual conditions during the measurements shall be recorded on the survey report.

3.3.2 Noise measurements shall be taken at normal service speed and no less than 80 per cent of the maximum continuous rating (MCR). Controllable pitch and Voith-Schneider propellers, if any, shall be in the normal seagoing position. For special ship types and for ships with special propulsion and power configurations, such as diesel-electric systems, the Administration may, in cooperation with the shipyard and shipowners, give due consideration to actual vessel design or operating parameters when applying the requirements of sections 3.3.1 and 3.3.2.

3.3.3 All machinery, navigation instruments, radio and radar sets, etc., normally in use at normal seagoing condition and levels, including squelch shall operate throughout the measurement period. However, neither energized fog signals nor helicopter operations shall take place during the taking of these measurements.

3.3.4 Measurements in spaces containing emergency diesel engine driven generators, fire pumps or other emergency equipment that would normally be run only in emergency, or for test purposes, shall be taken with the equipment operating. Measurements are not intended for determining compliance with maximum noise level limits, but as a reference for personal protection of seafarers carrying out maintenance, repair and test activities in such spaces.

3.3.5 Mechanical ventilation, heating and air-conditioning equipment shall be in normal operation, taking into account that the capacity shall be in accordance with the design conditions.

3.3.6 Doors and windows should in general be closed.

3.3.7 Spaces should be furnished with all necessary equipment. Measurements without soft furnishings may be taken but no allowance should be made for their absence. Rechecks or follow-up readings may be taken with soft furnishings included.

3.3.8 Ships fitted with bow thrusters, stabilizers, etc., may be subject to high noise levels when in operation. For thrusters, measurements shall be made at 40 per cent thruster power. Measurements shall be taken at positions around such machinery when in operation and in adjacent accommodation spaces and duty stations. If such equipment is intended for continuous operation for longer periods, which should be considered the case for stabilizers, measurements shall be made for ensuring compliance with chapter 4. If such systems are intended for short temporary use only, for instance during port manoeuvres, measurements are only relevant for ensuring compliance with chapter 5 on noise exposure.

⁴ Testing institutions which support a quality management system according to ISO 17020/25 are considered to fulfil these requirements (IACS-Members can proceed according to UR Z 17 – requirements for service suppliers).

3.3.9 In case of vessels with Dynamical Positioning (DP), which is intended for use in normal working condition, additional noise measurements at DP mode shall be made at control stations, duty stations, and accommodation areas to ensure that the maximum noise level limits in these spaces are not exceeded. The Administration, classification societies, shipyard and DP designers shall agree on a process to simulate the operation of the DP thruster system under conditions which would approximate station-holding at or above 40 per cent of maximum thruster power for design environmental conditions that the vessel operates in.

3.4 Operating conditions in port

3.4.1 Measurements as specified in 3.4.2, 3.4.3 and 3.4.4 shall be taken with the ship in port condition.

3.4.2 When the noise from the ship's cargo handling equipment may lead to noise above maximum levels in duty stations and accommodation spaces affected by its operation, measurements shall be taken. Noise originating from sources external to the ship should be discounted as indicated in 3.5.3.

3.4.3 Where the ship is a vehicle carrier and noise during loading and discharging originates from vehicles, the noise level in the cargo spaces and the duration of the exposure should be considered in conjunction with chapter 5. Such noise levels originating from vehicles may be estimated theoretically by the shipyard and shipowners in cooperation with the Administration.

3.4.4 Measurements shall be taken in machinery spaces with the machinery operating in the port condition if the provisions of 5.3.5 in respect of hearing protection shall be met in lieu of the provisions of 4.2.1 during maintenance, overhaul or similar port conditions.

3.5 Environmental conditions

3.5.1 The readings obtained may be affected if the water depth is less than five times the draught or if there are large reflecting surfaces in the ship's vicinity. Such conditions shall therefore be noted in the noise survey report.

3.5.2 The meteorological conditions such as wind and rain, as well as sea state, should be such that they do not influence the measurements. Wind force 4 and 1 m wave height should not be exceeded. If this cannot be achieved, the actual conditions shall be reported.

3.5.3 Care shall be taken to see that noise from extraneous sound sources, such as people, entertainment, construction and repair work, does not influence the noise level on board the ship at the positions of measurement. If necessary, measured values may be corrected for steady state background noise according to the energy summation principle.

3.6 Measurement procedures

3.6.1 During noise level measurement, only seafarers necessary for the operation of the ship and persons taking the measurements shall be present in the space concerned.

3.6.2 Sound pressure level readings shall be taken in decibels using an A-weighting (dB(A)) and C-weighting (dB(C)) filter and if necessary also in octave bands between 31.5 and 8,000 Hz.

3.6.3 The noise level measurements shall be taken with the integrating sound level meter using spatial averaging (as described in section 3.13.1) and over a time period until stable readings are found or at least 15 s in order to represent the average value from variations due to irregular operation or variations in the sound field. Readings shall be made only to the nearest decibel. If first decimal of the dB reading is 5 or higher, the reading shall be made to nearest higher integer.

3.7 Determination of noise exposure

In addition to the continuous sound level measurements the noise exposure level of seafarers (see chapter 5) shall be determined based upon ISO 9612:2009. A simplified procedure based on ISO 9612 and a work place related noise exposure is given in appendix 4.

3.8 Calibration

The sound level meter shall be calibrated with the calibrator referred to in 2.2.1 before and after measurements are taken.

3.9 Measurement uncertainties

The uncertainty of measurements on board vessels depends on several factors, for example, measurement techniques and environmental conditions. Measurements made in conformity with this Code with few exceptions results in reproducibility standard deviation of the equivalent continuous A-weighted sound pressure level equal to or less than 1.5 dB.

3.10 Points of measurement

3.10.1 *Measurement positions*

If not otherwise stated, measurements shall be taken with the microphone at a height of between 1.2 m (seated person) and 1.6 m (standing person) from the deck. The distance between two measurement points should be at least 2 m, and in large spaces not containing machinery, measurements should be taken at intervals not greater than 10 m throughout the space including positions of maximum noise level. In no case shall measurements be taken closer than 0.5 m from the boundaries of a space. The microphone positions shall be as specified in 3.10.3 and 3.11 to 3.14. Measurements shall be taken at positions where the personnel work, including at communication stations.

3.10.2 *Duty stations*

The noise level shall be measured at all points where the work is carried out. Additional measurements shall be performed in spaces containing duty stations if variations in noise level are thought to occur in the vicinity of the duty stations.

3.10.3 *Intake and exhaust openings*

When measuring noise levels at the intake and exhaust of engines and near ventilation, air-conditioning and cooler systems, the microphone should, where possible, be placed outside the gas stream at a distance of 1 m from the edge of the intake or exhaust opening and at a 30° angle away from the direction of the gas stream and as far as possible from reflecting surfaces.

3.11 Measurements in machinery spaces

3.11.1 Measurements shall be taken at the principal working and control stations of the seafarers in the machinery spaces and in the adjacent control rooms, if any, special attention being paid to telephone locations and to positions where voice communication and audible signals are important.

3.11.2 Measurements should not normally be taken closer than 1 m from operating machinery, or from decks, bulkheads or other large surfaces, or from air inlets. Where this is not possible, measurement shall be taken at a position midway between the machinery and adjacent reflecting surface.

3.11.3 Measurements from machinery which constitutes a sound source should be taken at 1 m from the machinery. Measurement should be made at a height of between 1.2 m to 1.6 m above the deck, platform or walkway as follows:

- .1 at a distance of 1 m from, and at intervals not greater than 3 m around, all sources such as:
 - main turbines or engines at each level
 - main gearing
 - turbo-blowers
 - purifiers
 - electrical alternators and generators
 - boiler firing platform
 - forced and/or induced draught fans
 - compressors
 - cargo pumps (including their driving motors or turbines)

(In order to avoid an unnecessarily large and impractical number of measurements and recordings in the case of large engines and of machinery spaces where the measured sound pressure level in dB(A) at the intervals above does not vary significantly, it will not be necessary to record each position. Full measurement at representative positions and at the positions of maximum sound pressure level shall, however, be made and recorded, subject to at least four measurements being recorded at each level.);
- .2 at local control stations, e.g. the main manoeuvring or emergency manoeuvring stand on the main engine and the machinery control rooms;
- .3 at all other locations not specified in .1 and .2 which would normally be visited during routine inspection, adjustment and maintenance;
- .4 at points on all normally used access routes, unless covered by positions already specified above, at intervals not greater than 10 m; and
- .5 in rooms within the machinery space, e.g. workshops. (In order to restrict the number of measurements and recordings, the number of recordings can be reduced as in .1, subject to a total of at least four measurements (including those specified in this paragraph) being recorded at each machinery space level up to upper deck.)

3.12 Measurements in navigation spaces

Measurements shall be taken on both navigating bridge wings but should only be taken when the navigating bridge wing to be measured is on the lee side of the ship.

3.13 Measurements in accommodation spaces

3.13.1 One measurement shall be taken in the middle of the space. The microphone shall be moved slowly horizontally and/or vertically over a distance of 1 m (+/- 0.5m, taking into account the measurement criteria in 3.10.1). Additional measurements should be performed at other points if appreciable differences, i.e. greater than 10 dB(A), in the level of sound inside the room occur, especially near the head positions of a sitting or lying person.

3.13.2 The number of measurement cabins shall be not less than 40 per cent of total number of cabins. Cabins which are obviously affected by noise, i.e. cabins adjacent to machinery or casings, must be considered in any case.

3.13.3 For ships with a large number of crew cabins, such as passenger/cruise ships, it will be acceptable to reduce the number of measurement positions. The selection of cabins to be tested shall be representative for the group of cabins being tested by selecting those cabins in closer proximity to noise sources, to the satisfaction of the Administration.

3.13.4 On open deck, measurements shall be taken in any areas provided for the purpose of recreation and additionally where a preliminary investigation indicates that the limits specified in 5.3.5 may be exceeded.

3.14 Measurements in normally unoccupied spaces

3.14.1 In addition to the spaces referred to in 3.10 to 3.13, measurements shall be taken in all locations with unusually high noise levels where seafarers may be exposed, even for relatively short periods, and at intermittently used machinery locations, for example cargo discharge pumps.

3.14.2 In order to restrict the number of measurements and recordings, noise levels need not be measured for normally unoccupied spaces, holds, deck areas and other spaces which are remote from sources of noise and where a preliminary investigation shows that the noise levels are well below the limit specified in chapter 4.

3.14.3 Where a preliminary investigation shows that the noise levels in large cargo holds are not well below the limit specified in chapter 4, at least three microphone positions in parts of holds where personnel are likely to carry out work shall be used.

CHAPTER 4 – MAXIMUM ACCEPTABLE SOUND PRESSURE LEVELS

4.1 General

4.1.1 The limits specified in this section shall be regarded as maximum levels and not as desirable levels. Where reasonably practicable, it is desirable for the noise level to be lower than the maximum levels specified.

4.1.2 Before the ship is put in service, the limits specified in section 4.2 shall be assessed by the equivalent continuous sound level measurement for that space. In large rooms with many measurement positions the individual positions shall be compared to the limits.

4.1.3 Personnel entering spaces with nominal noise levels greater than 85 dB(A) should be required to wear hearing protectors while in those spaces (see chapter 5). The limit of 110 dB(A) given in 4.2.1 assumes that hearing protectors giving protection meeting the requirements for hearing protectors in chapter 7 are worn.

4.1.4 Limits are specified in terms of A-weighted sound pressure levels (see 1.4.4 and 1.4.24).

4.2 Noise level limits

Limits for noise levels (dB(A)) are specified for various spaces as follows:

Designation of rooms and spaces	Ship size	
	1,600 up to 10,000 GT	≥10,000 GT
4.2.1 Work spaces (see 5.1)		
Machinery spaces ⁵	110	110
Machinery control rooms	75	75
Workshops	85	85
Non-specified work spaces ⁶ (other work areas)	85	85
4.2.2 Navigation spaces		
Navigating bridge and chartrooms	65	65
Listening posts, incl. navigating bridge wings ⁷ and windows	70	70
Radio rooms (with radio equipment operating but not producing audio signals)	60	60
Radar rooms	65	65
4.2.3 Accommodation spaces		
Cabin and hospitals ⁸	60	55
Messrooms	65	60
Recreation rooms	65	60
Open recreation areas (external recreation areas)	75	75
Offices	65	60

⁵ If the maximum noise levels are exceeded when machinery is operating (only permitted if dispensation is granted in accordance with 1.3.6), stay should be limited to very short periods or not allowed at all. The area should be marked according to article 7.4.

⁶ Examples are open deck work spaces that are not machinery spaces, and open deck work spaces where communication is relevant.

⁷ Reference is made to resolution A.343(IX) which also applies.

⁸ Hospitals: treatment rooms with beds.

Designation of rooms and spaces	Ship size	
	1,600 up to 10,000 GT	≥10,000 GT
4.2.4 Service spaces		
Galleys, without food processing equipment operating	75	75
Serveries and pantries	75	75
4.2.5 Normally unoccupied spaces		
Spaces not specified	90	90

4.3 Survey report

4.3.1 A noise survey report shall be made for each ship. The report shall comprise information on the noise levels in the various spaces on board. The report shall show the reading at each specified measuring point. The points shall be marked on a general arrangement plan, or on accommodation drawings attached to the report, or shall otherwise be identified.

4.3.2 The format for noise survey reports is set out in appendix 1.

4.3.3 The noise survey report shall always be carried on board and be accessible for the crew.

CHAPTER 5 – NOISE EXPOSURE LIMITS

5.1 General

5.1.1 The noise level limits as set out in chapter 4 are designed so that, if they are complied with, seafarers will not be exposed to an $L_{ex}(24)$ exceeding 80 dB(A), i.e. within each day or 24-hour period the equivalent continuous noise exposure would not exceed 80 dB(A). For a new ship, compliance with these criteria should be verified on basis of sea trial measurements of noise levels by calculation of the expected noise exposure of each category of crew members in accordance with the method prescribed in section 3.7.

5.1.2 In spaces with sound pressure levels exceeding 85 dB(A), suitable hearing protection should be used, or to apply time limits for exposure, as set out in this section, to ensure that an equivalent level of protection is maintained.

5.1.3 Each ship to which these regulations apply should include a section in their Safety Management System on the company's policy regarding hearing protection, exposure limits and conduct training on those matters, which will be logged in their training records.

5.1.4 Consideration should be given to the instruction of seafarers on these aspects, as recorded in appendix 2. No crew member should be exposed unprotected to peak values exceeding 135 dB(C).

5.2 Conservation of hearing and use of hearing protectors

In order to comply with the exposure criteria of this section, the use of hearing protectors complying with chapter 7 is permitted. Even when hearing protectors are required for compliance with the Code, risk assessments, a hearing conservation programme and other measures may be implemented by the Administration.

5.3 Limits of exposure of seafarers to high noise levels

Seafarers should not be exposed to noise in excess of the levels and durations shown in figure 5.1 and described in 5.3.1 to 5.3.5.

5.3.1 *Maximum exposure with protection (zone A, Figure 1)*

No seafarer even wearing hearing protectors should be exposed to levels exceeding 120 dB(A) or to an $L_{eq}(24)$ exceeding 105 dB(A).

5.3.2 *Occasional exposure (zone B, Figure 1)*

Only occasional exposures should be allowed in zone B and hearing protectors with an attenuation between 25 and 35 dB(A) should be used.

5.3.3 *Occasional exposure (zone C, Figure 1)*

In zone C only occasional exposures should be allowed and hearing protectors with an attenuation of at least 25 dB(A) should be used.

5.3.4 *Daily exposure (zone D, Figure 1)*

If seafarers routinely work (daily exposure) in spaces with noise levels within zone D hearing protectors with an attenuation up to at least 25 dB(A) should be used and risk assessment and a hearing conservation programme may be considered.

5.3.5 *Maximum exposure without protection (zone E, Figure 1)*

For exposures of less than eight hours, seafarers without hearing protection should not be exposed to noise levels exceeding 85 dB(A). When seafarers remain for more than eight hours in spaces with a high noise level, an $L_{eq}(24)$ of 80 dB(A) should not be exceeded. Consequently, for at least a third of each 24 hours each seafarer should be subject to an environment with a noise level below 75 dB (A).

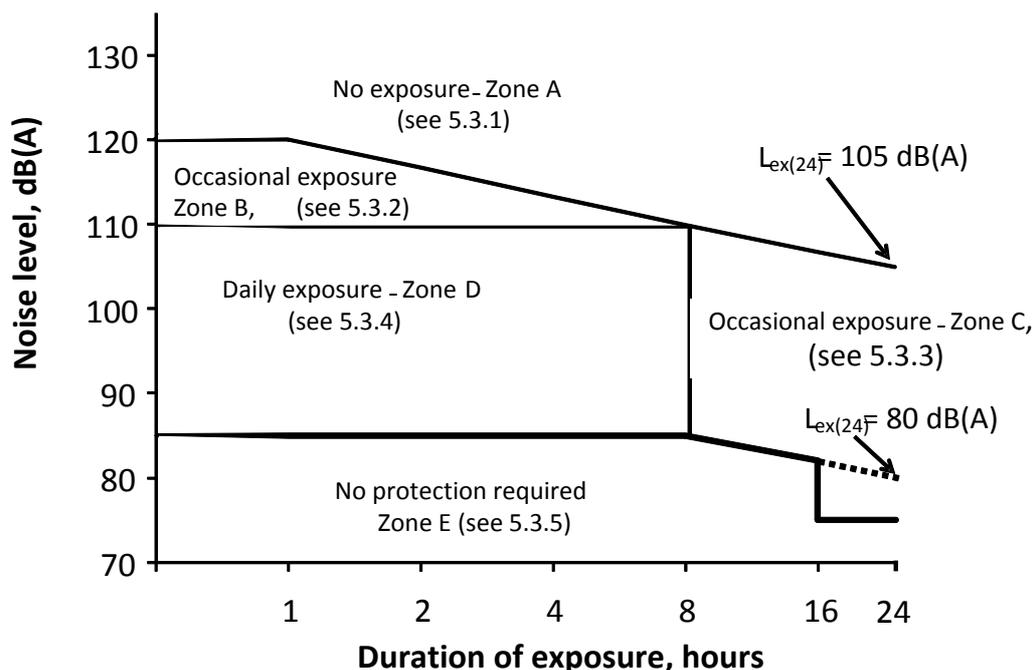


Figure 1: Allowable daily and occasionally occupational zones

To work in Zone A – D hearing protectors attenuating the sound to the ear down to below 85 dB(A) are required. To work in Zone E hearing protectors are not required but should be accessible if the sound level is over 80 dB(A) for more than 8 hours.

5.4 A 24-hour equivalent continuous sound level limit

As an alternative to compliance with the provisions of 5.3 (Figure 1), no unprotected seafarer should be exposed to a 24-hour equivalent continuous sound level greater than 80 dB(A). Each individual's daily exposure duration in spaces requiring the use of hearing protectors should not exceed four hours continuously or eight hours in total.

5.5 Hearing conservation programme

5.5.1 A hearing conservation programme may be provided for seafarers working in spaces with $L_{Aeq} > 85 \text{ dB(A)}$ in order to train them in the hazards of noise and use of hearing protection, and to monitor hearing acuity. Some elements of a hearing conservation programme are as follows:

- .1 Initial and periodic audiometric tests administered by a trained and appropriately qualified person, to the satisfaction of the Administration.
- .2 Instruction of exposed persons on the hazards of high and long duration noise exposures and on the proper use of ear protectors (see appendix 2).
- .3 Maintenance of audiometric test records.
- .4 Periodic analysis of records and hearing acuity of individuals with high hearing loss.

5.5.2 An optional element of a hearing conservation programme is to control the 24-hour equivalent continuous sound level to which individuals working in high noise level spaces are exposed. Such control requires calculation of the 24-hour equivalent continuous sound level. If this 24-hour level does not meet the limits, the duration of exposure should be controlled or hearing protectors used at appropriate times to bring the individual's exposure within the limit.

CHAPTER 6 – ACOUSTIC INSULATION BETWEEN ACCOMMODATION SPACES

6.1 General

Consideration shall be given to the acoustic insulation between accommodation spaces in order to make rest and recreation possible even if activities are going on in adjacent spaces, e.g. music, talking, cargo-handling, etc.

6.2 Sound insulation index

6.2.1 The airborne sound insulation properties for bulkheads and decks within the accommodation shall comply at least with the following weighted sound reduction index (R_w) according to ISO Standard 717-1:1996 as amended (1:2006), part 1⁹:

Cabin to cabin	$R_w = 35$
Messrooms, recreation rooms, public spaces and entertainment areas to cabins and hospitals	$R_w = 45$
Corridor to cabin	$R_w = 30$
Cabin to cabin with communicating door	$R_w = 30$.

6.2.2 The airborne sound insulation properties shall be determined by laboratory tests in accordance with ISO 10140-2:2010, to the satisfaction of the Administration.

6.3 Erection of materials

6.3.1 Care shall be taken in the erection of materials and in the construction of accommodation spaces. During sea trial testing, if the erection of materials is in doubt then measurements shall be taken on board ships for a representative selection of each type of partition, floors, doors as requested in section 6.2.1 and to the satisfaction of the Administration.

6.3.2 The apparent weighted sound reduction index R'_w shall comply with the requirements of the section 6.2.1 with tolerance of up to 3 dB.

Note: Field measurements shall be performed according to ISO 140-4:1998¹⁰. When the area of the materials tested is $< 10 \text{ m}^2$, a minimum value of 10 m^2 shall be considered for the calculation of the R'_w index.

⁹ ISO Standard 717-1 – Acoustics – Rating of sound insulation in buildings and of building elements – part 1: Airborne sound insulation, and its amendment published in 2006.

¹⁰ ISO 140-4 Acoustics – Measurement of sound insulation in buildings and of building elements – part 4: field measurements of airborne sound insulation between rooms.

CHAPTER 7 – HEARING PROTECTION AND WARNING INFORMATION

7.1 General

When the application of means for controlling sound at source does not reduce the noise level in any space to that specified in 4.1.3, seafarers who are required to enter such spaces shall be supplied with effective hearing protection on an individual basis. The provision of hearing protectors shall not be considered to be a substitute for effective noise control. Appendix 3 summarizes current noise abatement methods which may be applied on new ships.

7.2 Requirements for hearing protectors

7.2.1 The individual hearing protectors shall be so selected as to eliminate the risk to hearing or to reduce the risk to an acceptable level as specified in section 7.2.2. The ship operator shall make every effort to ensure the wearing of hearing protectors and shall be responsible for checking the effectiveness of measures taken in compliance of this Code.

7.2.2 Hearing protectors shall be of a type such that they can reduce sound pressure levels to 85 dB(A) or less (see 5.1). Selection of suitable hearing protectors should be in accordance with the HML-method described in ISO 4869-2:1994 (see explanation and example in appendix 2). Noise-cancelling technology may be used if the headset(s) have equivalent performance to hearing protectors in their unpowered condition.

7.2.2.1 Noise-cancelling headsets specifications should be as per confirmed manufacturer specifications.

7.3 Selection and use of hearing protectors

Seafarers should be instructed in the proper use of hearing protectors as provided or used on board in accordance with appendix 2.

7.4 Warning notices

Where the noise level in machinery spaces (or other spaces) is greater than 85 dB(A), entrances to such spaces shall carry a warning notice comprising symbol and supplementary sign in the working language of the ship as prescribed by the Administration (see below an example of the warning notice and signs with in English). If only a minor portion of the space has such noise levels the particular location(s) or equipment shall be identified at eye level, visible from each direction of access.

Signs at the entrance to noisy rooms (example in English)	
80-85 dB(A)	HIGH-NOISE LEVEL – USE HEARING PROTECTORS
85-110 dB(A)	DANGEROUS NOISE – USE OF HEARING PROTECTORS MANDATORY
110-115 dB(A)	CAUTION: DANGEROUS NOISE – USE OF HEARING PROTECTORS MANDATORY – SHORT STAY ONLY
>115 dB(A)	CAUTION: EXCESSIVELY HIGH-NOISE LEVEL – USE OF HEARING PROTECTORS MANDATORY – NO STAY LONGER THAN 10 MINUTES



3 Measuring instrumentation and personnel

- | | | | | |
|----|-----------------|-------------------|------|------------|
| .1 | Instrumentation | Make | Type | Serial No. |
| | | Sound level meter | | |
| | | Microphone | | |
| | | Filter | | |
| | | Windscreen | | |
| | | Calibrator | | |
| | | Other equipment | | |
- .2 Calibration of sound level meter Date Calibration Start Finish
- at survey by competent authority
- .3 Identification of persons/organizations carrying out measurements.

4 Conditions during measurement

- .1 Date of measurement: Starting time: Completion time:
- .2 Vessel's position during measurement
- .3 Loading condition of the ship
- .4 Conditions during measurement
- Draught forward
 - Draught aft
 - Depth of water under keel
- .5 Weather conditions
- Wind force
 - Sea state
- .6 Ship speed
- .7 Actual propeller shaft speed: r.p.m.
- .8 Propeller pitch:
- .9 Propulsion machinery speed: r.p.m.
- .10 Propulsion machinery power: kW
- .11 Number of propulsion machinery units operating:
- .12 Number of diesel auxiliary engines operating:
- .13 Number of turbogenerators operating:
- .14 Engine room ventilation speed mode (high/low/variable)
- .15 Engine load (%MCR)
- .1 Other auxiliary equipment operating:
- .1 Ventilation, heating and air conditioning equipment in operation

5 Measuring data

Noise limits	Measured sound pressure levels
dB(A)	L _{Aeq} dB(A)
	L _{Ceq} dB(C)
	L _{Cpeak} dB(C)

Note: Measurement of sound pressure level L_{Ceq} and L_{Cpeak} should be done only in the case of exceeding 85dB(A) and hearing protectors are required.

Work spaces

- Machinery spaces
- Machinery control rooms
- Workshops
- Non-specified workspaces

Navigation spaces

- Navigating bridge and chartrooms
- Listening posts, including navigating bridge wings and windows
- Radio rooms
- Radar rooms

Accommodation spaces

- Cabin and hospitals
- Messrooms
- Recreation rooms
- Open recreation areas
- Offices

Service spaces

- Galleys, without food processing equipment operating
- Serveries and pantries

Normally unoccupied spaces

6 Main noise abatement measures (list measures taken)

7 Remarks (list any exceptions to the Code)

.....

Name

Address

.....

.....
Place Date Signature

ATTACHMENT

PAGES OF FREQUENCY ANALYSIS

Frequency analysis for certain areas may result in more accurate and precise noise level predictions and will aid in the detection of specific frequency bands which exceed the established limits in chapter 4. Further guidance may be found in ISO 1996-2:2007.

APPENDIX 2

GUIDANCE ON THE INCLUSION OF NOISE ISSUES IN SAFETY MANAGEMENT SYSTEMS

1 Instruction to seafarers

1.1 Seafarers should be instructed in the hazards of high and long duration noise exposures and the risk of noise-induced hearing loss. Instruction should be given to all seafarers on initial employment and periodically thereafter to those regularly working in spaces with noise levels in excess of 85 dB(A). Instruction in the provisions of the Code should include:

- .1 noise exposure limits and the use of warning notices;
- .2 the types of hearing protectors provided, their approximate attenuation and their proper use, fitting, and the effects on normal communications when first wearing such protection;
- .3 company policies and procedures related to hearing protection and where appropriate any monitoring programme which may be available for seafarers working in spaces covered by warning notices; and
- .4 guidance on the possible signs of hearing loss such as ringing in the ear, dead ear, or fullness in the ear and mitigating techniques to be effected when those signs occur.

1.2 Appropriate seafarers should receive such instruction as is necessary in the correct use and maintenance of machinery and silencers or attenuators in order to avoid the production of unnecessary noise.

2 Responsibility of ship operators

2.1 The ship operator should be responsible for ensuring that means for noise reduction and control are applied and maintained such that the requirements of the Code are met.

2.2 Where noise levels in any space exceed the limit of 85 dB(A), shipowners should ensure that:

- .1 the space is identified and relevant provisions of the Code are complied with;
- .2 the master and senior officers of the ship are aware of the importance of controlling entry into the space and the importance of the use of suitable hearing protection;
- .3 suitable and sufficient hearing protection is provided for distribution on an individual basis to all relevant crew members; and
- .4 the master, senior officers and any safety officer on board a ship are aware of the need for the relevant training and information to be provided on board.

2.3 Where hand tools, galley and other portable equipment produce noise levels above 85 dB(A) in normal working conditions, shipowners should ensure that warning information should be provided.

3 Responsibility of seafarers

Seafarers should be made aware of the need to ensure that:

- .1 all measures adopted for noise control are utilized;
- .2 any defective noise control equipment is reported to responsible persons under the ship's safety management system;
- .3 suitable hearing protectors are always worn when entering areas in which their use is required by warning notices and that those protectors are not removed in those spaces, even for short periods; and
- .4 the hearing protectors provided for their use are not damaged or misused and are maintained in a sanitary condition.

4 Selection of hearing protectors

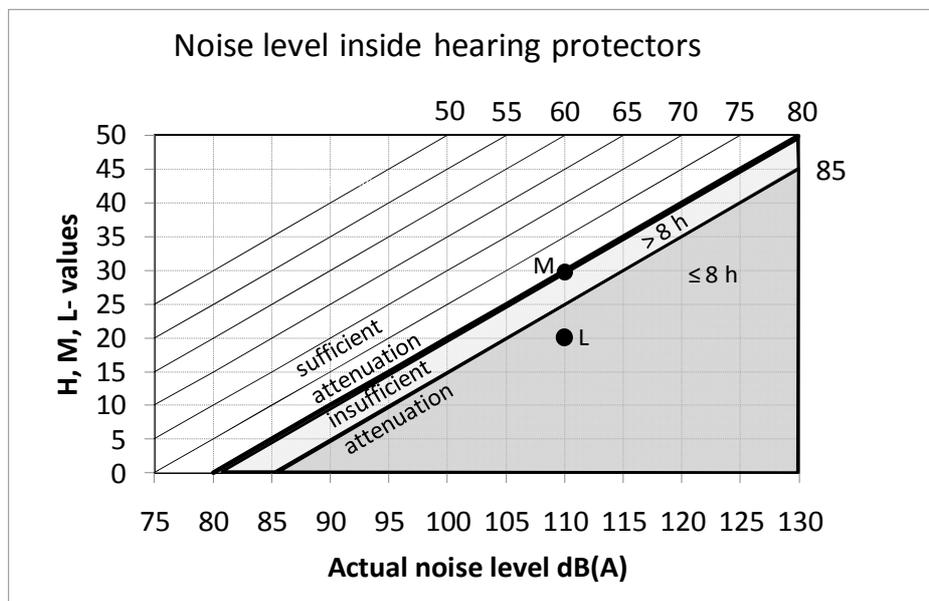
4.1 Selection of suitable hearing protectors should be carried out according to the HML-method described in ISO 4869-2:1994. In order to give guidance to ship operators and seafarers in choosing proper hearing protection, a short description of the HML-method and its use is given below.

4.2 The HML-method is a rating which is calculated in accordance with ISO 4869-2:1994, "Estimation of effective A-weighted sound pressure levels when hearing protectors are worn". Using the H, M, and L ratings requires both A-weighted (L_{Aeq}) and C-weighted (L_{Ceq}) sound pressure levels of the noise and the HML values for the hearing protector in question, which will be provided by the manufacturer.

4.2.1 The HML values for a hearing protector are related to the attenuation that the protector offers in noise of high, medium and low frequencies. These H and M values are used in the calculation of the protected exposure level for noises which have primary energy in the middle and high frequencies. This is considered the case if the measured L_{Ceq} and L_{Aeq} levels differ by 2 dB or less.

4.2.2 The M and L values for the hearing protector are used in the calculation of the protected exposure level for noises which have appreciable low-frequency components and for which the measured L_{Ceq} and L_{Aeq} levels differ by more than 2 dB in those spaces where the protector is intended to be used.

4.3 An example of simple use of the HML method:



On a given ship, the measured sound level in the machinery room is 110 dB(A), 115 dB(C). The chosen hearing protectors have the following attenuation according to the manufacturer: H= 35 dB, M=30 dB, L=20 dB.

- .1 Mark the hearing protectors' L and M values on the vertical line starting at the actual noise level (110 dB(A)).
- .2 Settle if the noise has low or high/medium frequency. If the difference $L_{Ceq}-L_{Aeq}$ is more than 2 dB the noise has low frequency (L) and if $L_{ceq}-L_{Aeq}$ is less than 2 dB the noise has high or medium frequency (M).
- .3 If the sound is of high/medium frequency ($L_{Ceq}-L_{Aeq}\leq 2$), follow the diagonal line from the M-value and take a reading of the noise level inside the hearing protectors. In this case the noise level inside the hearing protectors is 80 dB(A) which means that the attenuation of the hearing protectors are sufficient for work over 8 hours a day.
- .4 If the sound has low frequency ($L_{Ceq}-L_{Aeq}>2$), follow the diagonal lines from the L-value and take a reading of the noise level inside the hearing protectors. In this case, the noise level inside the hearing protectors is >85 dB(A) which means that the hearing protectors are not good enough even for a working day of 8 hours. Choose a hearing protector that has an L-value above 25 dB instead.

4.4 **Calculation by the HML-method – Principle and example**

Determination of feasibility of a particular protector in a specific noise environment can also be calculated. The values H, M and L may be used to estimate L'A (total A-weighted noise level at the ear) for a particular protector in specific noise situation.

- .1 Calculate $L_{Ceq}-L_{Aeq}$ (This requires measurements of L_{Aeq} and L_{Ceq} . All class 1 sound level meter can apply A-weighted or C-weighted)

- .2 If $L_{Ceq} - L_{Aeq}$ is ≤ 2 dB, the Predicted Noise Reduction level (PNR) is calculated using the equation:

$$PNR = M - \left(\frac{H - M}{4} * (L_{Ceq} - L_{Aeq} - 2) \right)$$

If $L_{Ceq} - L_{Aeq}$ is > 2 dB, the predicted noise reduction level PNR is calculated using the equation:

$$PNR = M - \left(\frac{M - L}{8} * (L_{Ceq} - L_{Aeq} - 2) \right)$$

- .3 The PNR is then subtracted from the total A-weighted noise level to give the effective A-weighted level at the ear under the protector L'A:

$$L'A = L_{Aeq} - PNR$$

Example: Hearing protector H = 35 dB, M = 25 dB, L = 20 dB

Noise level in engine-room:

$$L_{Aeq} = 108.7 \text{ dB(A)}$$

$$L_{Ceq} = 109.0 \text{ dB(C)}$$

$$L_{Ceq} - L_{Aeq} = 0.3 \text{ dB}$$

$$PNR = 25 - ((35-25)/4)*(0.3-2) = 29.3 \text{ dB}$$

$$L'A = 108.7 - 29.3 = 79.4 \text{ dB(A)}$$

In this case, the noise level inside the hearing protectors is below 80 dB(A) which means that the attenuation of the hearing protectors is sufficient for work over eight hours a day.

APPENDIX 3

SUGGESTED METHODS OF ATTENUATING NOISE

1 General

1.1 In order to obtain a noise reduction on board ships to comply with the limits given in chapters 4 and 5 of the Code, careful consideration should be given to means of such reduction. This appendix is intended to provide information for the design of a ship in this respect.

1.2 Design and construction of noise control measures should be supervised by persons skilled in noise control techniques.

1.3 Some of the measures which can be taken to control the noise level or reduce the exposure of seafarers to potentially harmful noise are indicated in sections 2 to 10 of this appendix. It is emphasized that it will not be necessary to implement all or any of the measures recommended in this appendix on all ships. This Code does not provide detailed

technical information needed for putting constructional noise control measures into effect, or for deciding which measures are appropriate in particular circumstances.

1.4 In applying noise control measures, care should be taken to ensure that rules and regulations concerning ship structure, accommodation and other safety matters are not infringed and the use of sound reduction materials should not introduce fire, safety or health hazards nor should such material, by virtue of flimsy construction or attachment, introduce hazards that may tend to impede either evacuation or de-watering of the spaces.

1.5 The need for noise control should be taken into account at the design stage when deciding which of different designs of engines and machinery are to be installed, the method of installation and the siting of machinery in relation to other spaces, and the acoustic insulation and siting of the accommodation spaces.

1.6 Due to the normal method of ship construction, it is most probable that noise originating from machinery and propellers reaching the accommodation and other spaces outside the machinery spaces will be of the structure-borne type.

1.7 When designing efficient and economic measures for noise control of machinery installations in existing ships, the measurement of sound produced in terms of A-weighted sound level may need to be supplemented by some form of frequency analysis.

2 Isolation of sources of noise

2.1 Where practicable, any engines or machinery producing noise levels in excess of the limits set out in 4.2 of the Code should be installed in compartments which do not require continuous attendance (see also 6.1 of this appendix).

2.2 Accommodation should be sited both horizontally and vertically as far away as is practicable from sources of noise such as propellers and propulsion machinery.

2.3 Machinery casings should, where practicable, be arranged outside superstructures and deckhouses containing accommodation spaces. Where this is not feasible, passageways should be arranged between the casings and accommodation spaces, if practicable.

2.4 Consideration should be given, where practicable, to the placing of accommodation spaces in deck houses not in superstructures extending to the ship's side.

2.5 Consideration may also be given, where applicable, to the separation of accommodation spaces from machinery spaces by unoccupied spaces, sanitary and washing rooms.

2.6 Suitable partitions, bulkheads, decks, etc., may be needed to prevent the spread of sound. It is important that these be of the correct construction and location in relation to the source of sound and the frequency of the sound to be attenuated.

2.7 Where a space, such as a machinery space, is being divided into noisy (not continually manned) and less noisy (capable of being continually manned) spaces, it is preferable to have complete separation¹¹.

¹¹ In these cases it may be necessary to ensure the supervision of the plant by installing alarms in the less noisy compartments and to arrange means of escape so that seafarers may leave these compartments without danger.

2.8 It may be advisable to provide sound absorbing material in certain spaces in order to prevent increase of noise level due to reflection from partitions, bulkheads, decks, etc.

3 Exhaust and intake silencing

3.1 Exhaust systems from internal combustion engines, air-intake systems to machinery spaces, accommodation spaces and other spaces should be so arranged that the inflow or discharge orifices are remote from places frequented by seafarers.

3.2 Silencers, noise-cancelling equipment or attenuators should be fitted when necessary.

3.3 To minimize accommodation noise levels it is normally necessary to reduce structure-borne noise by isolating exhaust systems and certain pipework and ductwork from casings, bulkheads, etc.

4 Machinery enclosure

4.1 In continuously manned spaces or spaces where seafarers might reasonably be expected to spend lengthy periods of time on maintenance or overhaul work, and where separation as detailed in section 2 of this appendix is not practicable, consideration should be given to the fitting of sound insulating enclosures or partial enclosures to engines or machinery producing sound pressure levels in excess of the limits set out in 4.2 of the Code.

4.2 Where the noise level produced by engines or machinery installed in spaces as in 4.1 above falls within the criteria of 5.3.1 of the Code and zone A of Figure 5.1, it is essential that noise reduction measures are provided.

4.3 When sound insulating enclosures are fitted, it is important that they entirely enclose the noise source.

5 Reduction of noise in the aft body

To reduce the noise influence in the aft body of the ship, especially to the accommodation spaces, consideration may be given to noise emission problems during the design procedures relating to the aft body, propeller, etc.

6 Enclosure of the operator

6.1 In most machinery spaces it would be desirable and advisable to protect operating or watchkeeping seafarers by providing a sound reducing control room or other similar space (see 2.1 of this appendix).

6.2 In continuously manned machinery spaces of small ships and of existing ships where noise levels are in excess of 85 dB(A), it would be desirable to provide a noise refuge at the control station or maneuvering platform where the watch keeper might be expected to spend the major part of the time.

7 Control of noise accentuation into accommodation spaces

7.1 To reduce noise levels in accommodation spaces it may be necessary to consider the isolation of deckhouses containing such spaces from the remaining structure of the ship by resilient mountings.

7.2 Consideration may also be given to the provision of flexible connections to bulkheads, linings and ceilings and the installation of floating floors within accommodation spaces.

7.3 The provision of curtains to side scuttles and windows and the use of carpets within accommodation spaces assist in absorbing noise.

8 Selection of machinery

8.1 The sound produced by each item of machinery to be fitted should be taken into account at the design stage. It may be possible to control noise by using a machine producing less airborne, fluid-borne or structure-borne sound.

8.2 Manufacturers should be requested to supply information on the sound produced by their machinery and also to provide recommended methods of installation in order to keep noise levels to a minimum.

9 Inspection and maintenance

All items of machinery, equipment and associated working spaces should be periodically inspected as part of the onboard safety management system with respect to any noise control/reduction features. Should such inspection reveal defects in the means for noise control, or other defects causing excessive noise, these should be rectified as soon as is practical.

10 Vibration isolation

10.1 Where necessary, machines should be supported on carefully selected resilient mountings. To ensure the effectiveness of the isolation, the mountings should be installed on a sufficient stiff foundation.

10.2 Where structure-borne sound from auxiliary machinery, compressors, hydraulic units, generating sets, vents, exhaust pipes and silencers produces unacceptable noise levels in accommodation spaces or on the navigating bridge, use of resilient mountings should be considered.

10.3 When sound insulating enclosures are fitted consideration may be given to the machine being resiliently mounted and pipe, trunk and cable connections to it being flexible.

11 Noise prediction

11.1 In the design phase of new ships, the designer/yard may predict by calculations, qualified assessments or the like, the expected noise levels in areas of the ship likely to have noise levels over acceptable levels from chapter 4.

11.2 The noise predictions referred to in 11.1 should be used in the design phase to identify possible areas in the ship where special consideration must be given to noise reduction measures in order to observe the noise level limits stipulated in section 4.2.

11.3 The noise predictions and any noise reduction measures planned in the design phase should be documented, especially in cases where, according to the noise predictions, it must be expected that compliance with any of the noise level limits of section 4.2 will be difficult to achieve, despite reasonable technical initiatives.

12 Noise-cancelling equipment

12.1 Noise cancellation, also known as anti-noise, is the process whereby mostly low-frequency (below 500 Hz) repetitive noises such as made by engines and rotating machinery, is cancelled out by introducing a cancelling anti-noise signal which is equal to but 180 degrees out of phase with the noise. This anti-noise is introduced to the environment in a way that it matches the noise in the region of interest. The two signals then cancel each other out, effectively removing a significant portion of the noise energy from the environment.

12.2 Several applications for this technology exist. They include:

- .1 Active mufflers – have been shown in other modes of transportation to reduce exhaust noise from internal combustion engines, compressors, and vacuum pumps without the inefficiencies caused by back pressure.
- .2 Active mounts – these can contain vibration from rotating machines to improve comfort, decrease wear on moving parts, and reduce secondary acoustic noise from vibration.
- .3 Noise-cancelled quiet zones – currently silent seats and (automobile) cabin quieting systems for various modes of transportation exist. The possibility exists for producing active-quieted bunks of other spaces for seafarer comfort and recovery.
- .4 Noise-cancelling headsets – these can extend hearing protection beyond passive ear defenders to include low frequencies. Active headsets can also allow communication, by permitting normal conversation, and improve work place safety.

12.3 It is suggested that information concerning experience from these active noise-reducing systems be provided to IMO to better evaluate the performance parameters of these systems.

13 Noise recovery areas

13.1 Incorporation of noise recovery areas may be used as an alternative design approach for the construction of ships under 1,600 GT or ice-breaking vessels. Noise recovery areas may also be considered for incorporation in ship-specific applications where noisy operations (examples are extended air/helicopter operations or heavy weather operation of dynamic positioning equipment) are undertaken for time periods over and above those of normal, routine seagoing practices. The use of these spaces should be integrated into ship safe operations policies under the ISM Code.

13.2 Noise recovery areas should be provided if no other technical or organizational solutions are feasible to reduce excessive noise from sound sources.

APPENDIX 4

SIMPLIFIED PROCEDURE FOR DETERMINING NOISE EXPOSURE

1 General

1.1 In order to ensure that seafarers will not be exposed to an $L_{ex}(24)$ exceeding 80 dB(A) this Appendix is providing information on a simplified procedure for determining the related noise exposure.

1.2 The determination of noise exposure should be usually carried out based on ISO 9612:2009.

1.3 A simplified method based on the noise measurements during sea trial/harbour stay and a job profile for crew members is described in the following:

2 Work analysis/Job profiling and off-duty hours

2.1 With the help of a crew list, different job categories (groups) will be defined.

Example:

- Master
- Chief engineer
- Electrician
- Cook
- etc.

2.2 For each job category, a job profile has to be defined individually. The job profile is related to the work spaces on board the vessel.

Example:

- Wheelhouse
- Ship office
- Machinery Control Room
- Workshop
- Engine-room
- Galley
- etc.

2.3 For each job category, the working shift is to be divided into partitions (i) related to the work spaces. A similar assessment should be made for off-duty hours. (The partitions are based on estimations by the owner/operator/employer.)

Example:

A full day for an electrician may be divided into the following partitions:

<i>i = 1</i>	<i>Workshop</i>	<i>=</i>	<i>T_i = 5 hours</i>
<i>i = 2</i>	<i>Machinery Control Room</i>	<i>=</i>	<i>T_i = 2 hours</i>
<i>i = 3</i>	<i>Ship Office</i>	<i>=</i>	<i>T_i = 2 hours</i>
<i>i = 4</i>	<i>Engine-room</i>	<i>=</i>	<i>T_i = 1 hour</i>
<i>i = 5</i>	<i>Off-duty</i>	<i>=</i>	<i>T_i = 14 hours</i>
	<i>Total</i>	<i>=</i>	<i>T_{total} = 24 hours</i>

3 Determination of estimated noise exposure levels

3.1 Based on the noise report and the estimated working times and off-duty hours for each job category, the noise exposure level can be calculated. It is assumed that the noise limits for cabins and recreation spaces according to this Code will not be exceeded. Using well-selected hearing protectors is recommendatory according to this Code. It is assumed that the maximum noise level of workers wearing hearing protectors does not exceed 85 dB(A).

3.2 The noise contribution from each space is calculated as follows:

$$L_{ex,24h,i} = L_{Aeq,i} + 10 \log(T_i/T_0)$$

where: T_i is the effective duration on board for each space

T_0 is the reference duration 24 h

$L_{Aeq,i}$ is the A-weighted equivalent continuous sound level for each space.

3.3 The A-weighted noise exposure level is calculated from the noise contribution from each space as follows:

$$L_{ex,24h} = 10 \log \left(\sum_{i=1}^n 10^{\frac{L_{ex,24h,i}}{10}} \right)$$

Example: *Result Sheet*

Job category	Electrician	Location/Space						
		<i>Navigating bridge</i>	<i>Ship Office</i>	<i>Machinery Control Room</i>	<i>Workshops</i>	<i>Engine-room</i>	<i>Galley</i>	<i>Off-duty</i>
Measured A-weighted equivalent continuous sound level $L_{Aeq,i}$ [dB(A)]		64	63	75	84	85	72	60
Duration/Stay T_i [h]		0	2	2	5	1	0	14
Noise contribution $L_{ex,24h,i}$ [dB]		0	52.2	64.2	77.2	71.2	0	57.7
A-weighted noise exposure level $L_{ex,24h}$ [dB]	78.3							

ANNEX 7

DRAFT NEW SOLAS REGULATION II-1/3-12

CHAPTER II-1 CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part A-1 – Structure of ships

- 1 The following new regulation 3-12 is added after the existing regulation 3-11:

"Regulation 3-12 – Protection against noise

1 This regulation shall apply to ships of not less than 1600 gross tonnage the keel of which is laid or which is at a similar stage of construction on or after [*effective date*], unless the Administration deems that compliance with a particular provision is unreasonable or impractical.

2 Notwithstanding the requirements of paragraph 1, this regulation does not apply to the following types of ships:

- .1 dynamically supported craft;
- .2 high-speed craft;
- .3 pipe-laying barges;
- .4 crane barges;
- .5 mobile offshore drilling units;
- .6 pile driving barge; and
- .7 dredgers.

3 Ships shall be constructed to reduce onboard noise and to protect personnel from the noise in accordance with the Code on noise levels on board ships, adopted by the Maritime Safety Committee by resolution MSC...(...), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I. For the purpose of this regulation, although the Code on noise levels on board ships is treated as a mandatory instrument, recommendatory parts as specified in chapter I of the Code shall be treated as non-mandatory, provided that amendments to such recommendatory parts are adopted by the Maritime Safety Committee in accordance with its Rules of Procedure."

Part C – Machinery installations

- 2 The existing regulation 36 is deleted and left blank*.

* Intentionally left blank to maintain the existing numbering of the following regulations.

ANNEX 8

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS REGULATION II-1/3-2

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-2, and following a recommendation made by the Sub-Committee on Ship Design and Equipment, at its fifty-sixth session, approved the annexed unified interpretation concerning dedicated seawater ballast tanks.

2 Member Governments are invited to use the annexed interpretation from *[date of approval]* when applying the relevant provisions of SOLAS regulation II-1/3-2 and to bring it to the attention of all parties concerned.

ANNEX

**UNIFIED INTERPRETATION OF DEDICATED SEAWATER BALLAST TANKS
IN SOLAS REGULATION II-1/3-2**

SOLAS regulation II-1/3-2

**Protective coatings of dedicated seawater ballast tanks in all types of ships
and double-side skin spaces of bulk carriers**

Interpretation

The following tanks should not be considered to be dedicated seawater ballast tanks and should therefore be exempted from the application and requirements of the Performance standard for protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)), if coatings applied in these tanks, such as Phenolic Epoxy, have a better performance than those applied in accordance with the Performance standard:

- 1 ballast tanks identified as "Spaces included in Net Tonnage" in the International Tonnage Certificate (1969);
- 2 seawater ballast tanks in passenger ships also designated for the carriage of grey water or black water; and
- 3 seawater ballast tanks in livestock carriers also designated for the carriage of livestock dung.

ANNEX 9

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS REGULATION II-1/48.3

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/48.3, and following a recommendation made by the Sub-Committee on Ship Design and Equipment at its fifty-sixth session, approved the annexed unified interpretation concerning the controls of the emergency bilge suction valve in periodically unattended machinery spaces.

2 Member Governments are invited to use the annexed interpretation from *[date of approval]* when applying the relevant provisions of SOLAS regulation II-1/48.3 and to bring it to the attention of all parties concerned.

ANNEX

**UNIFIED INTERPRETATION CONCERNING THE CONTROLS OF THE EMERGENCY
BILGE SUCTION VALVE IN PERIODICALLY UNATTENDED MACHINERY SPACES
(SOLAS REGULATION II-1/48.3)**

SOLAS regulation II-1/48.3 reads:

**"Regulation 48
Protection against flooding**

3 The location of the controls of any valve serving a sea inlet, a discharge below the waterline or a bilge injection system shall be so sited as to allow adequate time for operation in case of influx of water to the space, having regard to the time likely to be required in order to reach and operate such controls. If the level to which the space could become flooded with the ship in the fully loaded condition so requires, arrangements shall be made to operate the controls from a position above such level."

Interpretation

1 "Bilge injection system" is the same as "direct suction" referred to in SOLAS regulation II-1/35-1.3.7.1 and 3.7.2 and is understood to mean "emergency bilge suction", which is used to discharge overboard large quantities of seawater accumulated in engine-room bilges using the main circulating pump or another suitable pump as permitted by SOLAS regulation II-1/35-1.3.7.2.

2 The requirements for the controls of the "valves serving a sea inlet, a discharge below the waterline or a bilge injection system" should not be applied to valves serving an emergency bilge system, provided:

- .1 the emergency bilge valve is normally maintained in a closed position;
- .2 a non-return device is installed in the emergency bilge piping; and

Note: A normally closed non-return valve with positive means of closing is considered to satisfy both (1) and (2) above.

- .3 the emergency bilge suction piping is located inboard of a shell valve that is fitted with the control arrangements required by SOLAS regulation II-1/48.3.

ANNEX 10

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS REGULATIONS II-1/29.3 AND 29.4

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulations II-1/29.3 and 29.4, and following a recommendation made by the Sub-Committee on Ship Design and Equipment at its fifty-sixth session, approved the annexed unified interpretation concerning the steering gear test.

2 Member Governments are invited to use the annexed interpretation from [*date of approval*] when applying the relevant provisions of SOLAS regulations II-1/29.3 and 29.4 and to bring it to the attention of all parties concerned.

ANNEX

**UNIFIED INTERPRETATION CONCERNING THE STEERING GEAR TEST
WITH THE SHIP NOT AT THE DEEPEST SEAGOING DRAUGHT
(SOLAS REGULATIONS II-1/29.3 AND 29.4)**

SOLAS regulation II-1/29.3 and II-1/29.4

1 In order for ships to comply with the performance requirements stated in SOLAS regulations 29.3.2 and 29.4.2, they should have steering gear capable of meeting these performance requirements when at their deepest seagoing draught. In order to demonstrate this ability, the trials may be conducted in accordance with section 6.1.5.1 of ISO 19019:2005 (Seagoing vessels and marine technology – Instructions for planning, carrying out and reporting sea trials).

2 On all occasions when trials are conducted with the ship not at the deepest seagoing draught, the loading condition can be accepted on the conditions that either the rudder is fully submerged (at zero speed waterline) and the ship is in an acceptable trim condition, or the rudder load and torque at the trial loading condition have been reliably predicted and extrapolated to the full load condition, to the satisfaction of the Administration or recognized organization.

3 In any case, for the main steering gear trial, the speed of the ship corresponding to the number of maximum continuous revolution of main engine and maximum design pitch applies.

ANNEX 11

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS REGULATION II-1/3-5

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/3-5, and following a recommendation made by the Sub-Committee on Ship Design and Equipment at its fifty-sixth session, approved the annexed unified interpretation concerning the means by which compliance with SOLAS regulation II-1/3-5 is achieved.

2 In this context, it is recalled that 1 January 2011 was the entry into force date of the amendments to SOLAS regulation II-1/3-5 adopted by resolution MSC.282(86) and the date on which the interpretation of the term "new installation of materials containing asbestos" as contained in MSC.1/Circ.1379 became effective.

3 Member Governments are urged to implement as soon as possible the annexed interpretation when verifying compliance with SOLAS regulation II-1/3-5 and to bring it to the attention of all parties concerned.

ANNEX

**UNIFIED INTERPRETATION ON IMPLEMENTATION
OF SOLAS REGULATION II-1/3-5 AND MSC.1/Circ.1379**

Interpretation of SOLAS regulation II-1/3-5

1 Administrations or recognized organizations acting on their behalf should verify that materials which contain asbestos, as prohibited under SOLAS regulation II-1/3-5, are not installed on ships by reviewing asbestos-free declarations and supporting documentation for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention, which should be provided to the Administration or recognized organization by shipyards, repair yards, and equipment manufacturers.

Interpretation of MSC.1/Circ.1379

- 2 The phrase "new installation of materials containing asbestos" in MSC.1/Circ.1379:
- .1 means that material used (i.e. repaired, replaced, maintained or added) as a working part of the ship as per the appendix should be documented with an asbestos-free declaration. The Administration or recognized organization should audit this documentation, in consultation with the Company's nominated person responsible to control asbestos-containing material on board as per the Safety Management System in accordance with MSC/Circ.1045, during annual safety construction and safety equipment surveys; and
 - .2 does not preclude the stowage of material which contains asbestos on board (e.g. spare parts existing on board as of 1 January 2011).
- 3 The phrase "should not be permitted to be installed after 1 January 2011 as a working part" in MSC.1/Circ.1379 means that replacement, maintenance or addition of materials used for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention is prohibited.

Appendix

Structure and/or equipment	Component
Propeller shafting	Packing with low pressure hydraulic piping flange Packing with casing Clutch Brake lining Synthetic stern tubes
Diesel engine	Packing with piping flange Lagging material for fuel pipe Lagging material for exhaust pipe Lagging material turbocharger

Turbine engine	Lagging material for casing Packing with flange of piping and valve for steam line, exhaust line and drain line Lagging material for piping and valve of steam line, exhaust line and drain line
Boiler	Insulation in combustion chamber Packing for casing door Lagging material for exhaust pipe Gasket for manhole Gasket for hand hole Gas shield packing for soot blower and other hole Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Exhaust gas economizer	Packing for casing door Packing with manhole Packing with hand hole Gas shield packing for soot blower Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Incinerator	Packing for casing door Packing with manhole Packing with hand hole Lagging material for exhaust pipe
Auxiliary machinery (pump, compressor, oil purifier, crane)	Packing for casing door and valve Gland packing Brake lining
Heat exchanger	Packing with casing Gland packing for valve Lagging material and insulation
Valve	Gland packing with valve, sheet packing with piping flange Gasket with flange of high pressure and/or high temperature
Pipe, duct	Lagging material and insulation
Tank (fuel tank, hot water, tank, condenser), other equipments (fuel strainer, lubricant oil strainer)	Lagging material and insulation
Electric equipment	Insulation material

Ceiling, floor and wall in accommodation area	Ceiling, floor, wall
Fire door	Packing, construction and insulation of the fire door
Inert gas system	Packing for casing, etc.
Air-conditioning system	Sheet packing, lagging material for piping and flexible joint
Miscellaneous	Ropes Thermal insulating materials Fire shields/fire proofing Space/duct insulation Electrical cable materials Brake linings Floor tiles/deck underlay Steam/water/vent flange gaskets Adhesives/mastics/fillers Sound damping Moulded plastic products Sealing putty Shaft/valve packing Electrical bulkhead penetration packing Circuit breaker arc chutes Pipe hanger inserts Weld shop protectors/burn covers Fire-fighting blankets/clothing/equipment Concrete ballast

Note: The above list is taken from resolution MEPC.197(62), appendix 5, paragraph 2.2.2.1.

ANNEX 12

**DRAFT AMENDMENTS TO THE PERFORMANCE STANDARD FOR PROTECTIVE
COATINGS FOR DEDICATED SEAWATER BALLAST TANKS IN ALL TYPES
OF SHIPS AND DOUBLE-SIDE SKIN SPACES OF BULK CARRIERS
(RESOLUTION MSC.215(82))**

1 In paragraph 2.1, the reference to "the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers (resolution A.744(18), as amended)" is replaced by a reference to "the International Code on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, 2011 (2011 ESP Code) (resolution A.1049(27))".

2 In paragraph 2.6, the reference to "resolution A.744(18)" is replaced by a reference to "the 2011 ESP Code".

ANNEX 13

**DRAFT AMENDMENTS TO THE PERFORMANCE STANDARD FOR PROTECTIVE
COATINGS FOR CARGO OIL TANKS OF CRUDE OIL TANKERS
(RESOLUTION MSC.288(87))**

1 In paragraph 2.6, the reference to "resolution A.744(18)" is replaced by a reference to "the International Code on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, 2011 (2011 ESP Code) (resolution A.1049(27))".

ANNEX 14

DRAFT AMENDMENTS TO THE CONDITION ASSESSMENT SCHEME (CAS) (RESOLUTION MEPC.94(46), AS AMENDED)

1 After paragraph 1.5, the following new paragraph is inserted:

"1.6 The Assembly, at its twenty-seventh session, adopted the International Code on the enhanced programme of inspections during surveys of bulk carriers and oil tankers, 2011 (2011 ESP Code) (resolution A.1049(27)) and the Maritime Safety Committee, at its ninetieth session, adopted, by resolution MSC.[...(90)], amendments to SOLAS regulation XI-1/2, replacing "resolution A.744(18)" with "the 2011 ESP Code" and thereby making the Code mandatory. Therefore, the references to "resolution A.744(18)" in the CAS are replaced by references to "the 2011 ESP Code (resolution A.1049(27))"."

2 In paragraphs 3.10, 6.2.1.3, 6.2.2.9, 7.3.1, 7.3.4, 7.3.7 and 8, the reference to "resolution A.744(18), as amended" is replaced by a reference to "the 2011 ESP Code".

3 In appendix 2, in the section "Inspections by the Company", the reference to "resolution A.744(18), as amended" is replaced by a reference to "the 2011 ESP Code".

4 In appendix 3, in section 8, the reference to "resolution A.744(18), as amended" is replaced by a reference to "the 2011 ESP Code".

ANNEX 15

DRAFT MEPC RESOLUTION

**2012 GUIDELINES ON IMPLEMENTATION OF EFFLUENT STANDARDS
AND PERFORMANCE TESTS FOR SEWAGE TREATMENT PLANTS**

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,

NOTING resolution MEPC.159(55) by which the Committee adopted, at its fifty-fifth session, the Revised Guidelines on implementation of effluent standards and performance tests for sewage treatment plants (the Revised Guidelines) and invited Governments to apply the Revised Guidelines when approving sewage treatment plants and provide the Organization with information on experience gained with their application, in particular, on successful testing of equipment against the standards contained in the Revised Guidelines,

NOTING ALSO resolution MEPC.200(62) by which the Committee adopted, at its sixty-second session, amendments to MARPOL Annex IV concerning Special Area provisions and the designation of the Baltic Sea as a special area, which are expected to enter into force on 1 January 2013,

NOTING FURTHER the provisions of regulations 9.1.1 and 9.2.1 of MARPOL Annex IV, in which reference is made to the above-mentioned Revised Guidelines,

RECOGNIZING that the Revised Guidelines should be amended in order that current trends for the protection of the marine environment, the need to address particular oceanographical and ecological conditions of the special area designated, and developments in the design and effectiveness of commercially available sewage treatment plants be reflected; and the proliferation of differing unilateral more stringent standards that might be imposed worldwide be avoided,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Ship Design and Equipment, at its fifty-sixth session,

1. ADOPTS the 2012 Guidelines on implementation of effluent standards and performance tests for sewage treatment plants, the text of which is set out in the annex to this resolution;
2. INVITES governments to:
 - .1 implement the 2012 Guidelines and apply them on or after *[1 January 2016]*; and
 - .2 provide the Organization with information on experience gained with the application of the 2012 Guidelines;

3. ALSO INVITES Governments to issue an appropriate "Certificate of type approval for sewage treatment plants" as referred to in paragraph 5.4.2 and the annex of the 2012 Guidelines and to recognize certificates issued under the authority of other Governments as having the same validity as certificates issued by them;

4. SUPERSEDES the Revised Guidelines on implementation of effluent standards and performance tests for sewage treatment plants, adopted by resolution MEPC.159(55).

ANNEX

**2012 GUIDELINES ON IMPLEMENTATION OF EFFLUENT STANDARDS
AND PERFORMANCE TESTS FOR SEWAGE TREATMENT PLANTS**

TABLE OF CONTENTS

- 1 Introduction
- 2 Definitions
- 3 General
- 4 Technical specification
- 5 Testing considerations
- 6 Renewal and additional surveys
- 7 Familiarization of ship personnel in the use of the sewage treatment plant
- 8 Maintenance

ANNEX

Form of Certificate of Type Approval for Sewage Treatment Plants and appendix

2012 GUIDELINES ON IMPLEMENTATION OF EFFLUENT STANDARDS AND PERFORMANCE TESTS FOR SEWAGE TREATMENT PLANTS

1 INTRODUCTION

1.1 Background

1.1.1 The Marine Environment Protection Committee (MEPC) adopted resolution MEPC.2(VI), Recommendation on International Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants in 1976. MEPC 55 in October 2006 adopted, by resolution MEPC.159(55), the Revised Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants, which superseded resolution MEPC.2(VI).

1.1.2 MEPC 62 adopted resolution MEPC.200(62) amending MARPOL by designating the Baltic Sea as a special area under Annex IV and prohibiting the discharge of sewage effluent from passenger ships operating in special areas, unless a passenger ship has in operation an approved sewage treatment plant implementing effluent standards and performance tests defined in the 2012 Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants (the Guidelines).

1.2 Application

1.2.1 These Guidelines amend the Revised Guidelines on Implementation of Effluent Standards and Performance Tests for Sewage Treatment Plants, adopted by resolution MEPC.159(55), by including the standards of section 4.2 that only apply to passenger ships which operate in MARPOL Annex IV special areas and which intend to discharge treated sewage effluent into the sea.

1.2.2 The requirements of these Guidelines, with the exception of the requirements in section 4.2, will apply to sewage treatment plants installed on or after [1 January 2016] on:

- .1 ships, other than passenger ships, in all areas; and
- .2 passenger ships outside MARPOL Annex IV special areas.

1.2.3 The requirements of these Guidelines, including those in section 4.2, will apply to sewage treatment plants installed on:

- .1 new passenger ships when operating in a MARPOL Annex IV special area and intending to discharge treated sewage effluent into the sea on or after 1 January 2016; and
- .2 existing passenger ships when operating in a MARPOL Annex IV special area and intending to discharge treated sewage effluent into the sea on or after 1 January 2018.

1.2.4 Sewage treatment plants installed prior to [1 January 2016] and on or after 1 January 2010, on ships other than passenger ships operating in MARPOL Annex IV special areas and intending to discharge treated sewage effluent into the sea, should comply with resolution MEPC.159(55).

1.2.5 Sewage treatment plants installed prior to 1 January 2010 on ships other than passenger ships operating in MARPOL Annex IV special areas and intending to discharge treated sewage effluent into the sea, should comply with resolution MEPC.2(VI).

1.3 Purpose

1.3.1 These Guidelines and specifications address the design, installation, performance and testing of sewage treatment plants required by regulations 9.1.1 and 9.2.1 of MARPOL Annex IV.

1.3.2 The purpose of these Guidelines and specifications is:

- .1 to provide a uniform interpretation of the requirements of regulations 9.1.1 and 9.2.1 of MARPOL Annex IV;
- .2 to assist Administrations in determining appropriate design, construction and operational testing and performance parameters for sewage treatment plants when such equipment is fitted in ships flying the flag of their State; and
- .3 to provide guidance for installation requirements.

2 DEFINITIONS

2.1 *Annex IV* – the revised Annex IV of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 and 1997 Protocols (MARPOL), as amended by resolutions MEPC.115(51) and MEPC.200(62).

2.2 *Convention* – the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the 1978 and 1997 Protocols (MARPOL).

2.3 Dilution (Q_d) – is dilution water, grey water, process water, and/or seawater introduced to the sewage treatment plant after the influent sample point and after the influent flow measurement device, see figure 1.

2.4 *Effluent* (Q_e) – treated wastewater produced by the sewage treatment plant, see figure 1.

2.5 *Geometric mean* – the n th root of the product of n numbers.

2.6 *Grey water* – is drainage from dishwater, galley sink, shower, laundry, bath and washbasin drains and does not include drainage from toilets, urinals, hospitals, and animal spaces, as defined in regulation 1.3 of MARPOL Annex IV and does not include drainage from cargo spaces.

2.7 *Hydraulic loading* – system design flow rate of waste water (Q_i) into the sewage treatment plant.

2.8 *Influent* (Q_i) – Liquid containing sewage, grey water or other liquid streams, to be processed by the treatment plant, see figure 1.

2.9 *Sample point* – A point for manual collection of a representative sample of influent and effluent without opening tanks, voids or vents, see figure 1.

2.10 *Testing on board* – testing, for the purpose of type approval, carried out on a sewage treatment plant installed on a ship.

2.11 *Testing ashore* – testing ashore, for the purpose of type approval, carried out on a sewage treatment plant.

2.12 *Thermotolerant coliforms* – the group of coliform bacteria which produce gas from lactose in 48 hours at 44.5°C. These organisms are sometimes referred to as "faecal coliforms"; however, the term "thermotolerant coliforms" is now accepted as more appropriate, since not all of these organisms are of faecal origin.

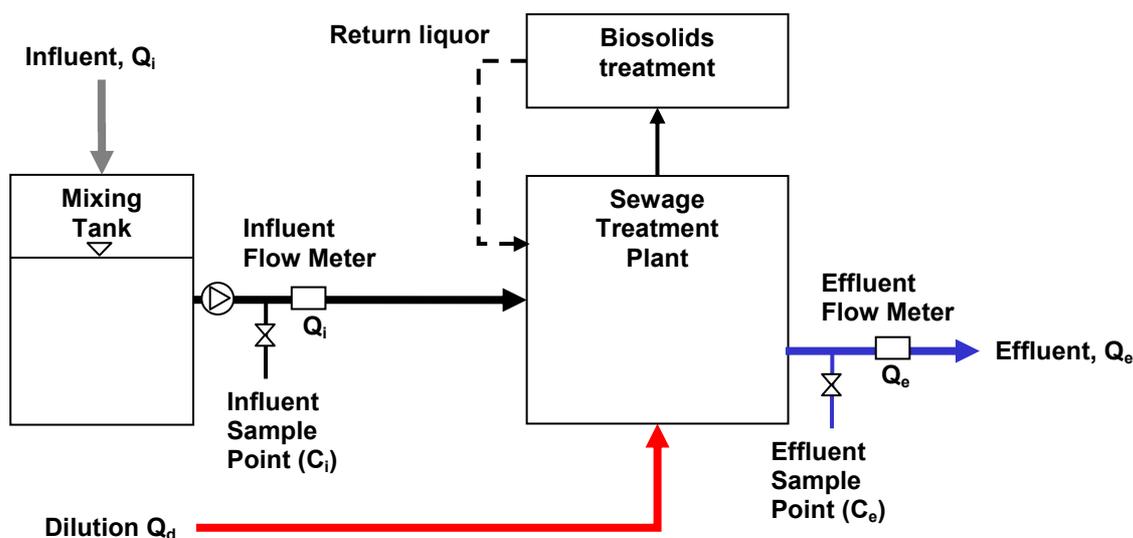


Figure 1: System diagram of a sewage treatment plant

3 GENERAL

3.1 An approved sewage treatment plant should meet the technical specifications in section 4 and the tests outlined in these Guidelines. However, section 4.2 on nitrogen and phosphorous removal applies to passenger ships operating within a special area intending to discharge treated sewage effluent into the sea. It should also be noted that, when ships are operating approved sewage treatment plants, MARPOL Annex IV also provides that the effluent shall not produce visible floating solids or cause discolouration of the surrounding water.

3.2 It is acknowledged that the performance of sewage treatment plants may vary considerably when the system is tested ashore under simulated shipboard conditions or on board a ship under actual operating conditions. Where testing ashore demonstrates that a system complies with the standards, but subsequent onboard testing does not meet the standards, the Administration should determine the reason and take it into account when deciding whether to type approve the plant.

3.3 It is recognized that Administrations may wish to modify the specific details outlined in these Guidelines to take account of very large, very small or unique sewage treatment plants.

4 TECHNICAL SPECIFICATION

4.1 For the purpose of regulations 9.1.1 and 9.2.1 of MARPOL Annex IV, a sewage treatment plant should meet the following effluent standards when tested for its Certificate of Type Approval by the Administration:

.1 Thermotolerant Coliform Standard

The geometric mean of the thermotolerant coliform count of the samples of effluent taken during the test period should not exceed 100 thermotolerant coliforms/100 ml as determined by membrane filter, multiple tube fermentation or an equivalent analytical procedure.

.2 Total Suspended Solids (TSS) Standard

.1 The geometric mean of the total suspended solids content of the samples of effluent taken during the test period should not exceed 35 Qi/Qe mg/l.

.2 Where the sewage treatment plant is tested on board ship, the maximum total suspended solids content of the samples of effluent taken during the test period may be adjusted to take account of the total suspended solid content of the flushing water. In allowing this adjustment in maximum TSS, Administrations should ensure sufficient tests of TSS are taken of the flushing water throughout the testing period to establish an accurate geometric mean to be used as the adjustment figure (defined as x). In no cases should the maximum allowed TSS be greater than (35 plus x) Qi/Qe mg/l.

Method of testing should be by:

.1 filtration of representative sample through a 0.45 µm filter membrane, drying at 105°C and weighing; or

.2 centrifuging of a representative sample (for at least five minutes with mean acceleration of 2,800-3,200 g), drying at least 105°C and weighing; or

.3 other internationally accepted equivalent test standard.

.3 Biochemical oxygen demand without nitrification and chemical oxygen demand

Administrations should ensure the sewage treatment plant is designed to reduce both soluble and insoluble organic substances to meet the requirement that, the geometric mean of 5-day biochemical oxygen demand without nitrification (BOD₅ without nitrification) of the samples of effluent taken during the test period does not exceed 25 Qi/Qe mg/l and the chemical oxygen demand (COD) does not exceed 125 Qi/Qe mg/l. The test method standard should be ISO 5815 1:2003 for BOD₅ without nitrification and ISO 15705:2002 for COD, or other internationally accepted equivalent test standards.

.4 pH

The pH of the samples of effluent taken during the test period should be between 6 and 8.5.

.5 Zero or non-detected values

For thermotolerant coliforms zero values should be replaced with a value of 1 thermotolerant coliform/100 ml to allow the calculation of the geometric mean. For total suspended solids, biochemical oxygen demand without nitrification and chemical oxygen demand values below the limit of detection should be replaced with one half the limit of detection to allow the calculation of the geometric mean.

4.2 For the purpose of regulation 9.2.1 of MARPOL Annex IV, a sewage treatment plant installed on a passenger ship intending to discharge sewage effluent in special areas should additionally meet the following effluent standards when tested for its Certificate of Type Approval by the Administration:

.1 Nitrogen and phosphorus removal standard

The geometric mean of the total nitrogen and phosphorus content of the samples of effluent taken during the test period should not exceed:

.1 total nitrogen¹: [20] [35] Qi/Qe mg/l or at least [30%] [70%] reduction²;

.2 total phosphorus: [1.0] [2.0] Qi/Qe mg/l or at least [70%] [80%] reduction³.

.2 Method of testing should be:

.1 ISO 29441:2010 for total nitrogen; and

.2 ISO 6878:2004 for total phosphorus; or

.3 other internationally accepted equivalent test standard.

4.3 Where the sewage treatment plant has been tested ashore, the initial survey should include installation and commissioning of the sewage treatment plant.

5 TESTING CONSIDERATIONS

5.1 Testing of the operational performance of a sewage treatment plant should be conducted in accordance with the following subparagraphs. Unless otherwise noted, the subparagraphs apply to testing both on board and ashore.

¹ Total nitrogen means the sum of total Kjeldahl nitrogen (organic and ammoniacal nitrogen) nitrate-nitrogen and nitrite-nitrogen.

² Reduction in relation to the load of the influent.

³ Reduction in relation to the load of the influent.

5.2 Raw sewage quality

5.2.1 Sewage treatment plants tested ashore – the influent should be fresh sewage consisting of faecal matter, urine, toilet paper and flush water to which, for testing purposes primary sewage sludge has been added as necessary to attain a minimum total suspended solids concentration appropriate for the number of persons and hydraulic loading for which the sewage treatment plant will be certified. The testing should take into account the type of system (for example, vacuum or gravity toilets) and any water or grey water that may be added for flushing to the sewage before treatment. In any case the influent concentration of total suspended solids should be no less than 500 mg/l.

5.2.2 Sewage treatment plants tested on board – the influent may consist of the sewage generated under normal operational conditions. In any case the average influent concentration of total suspended solids should be not less than 500 mg/l.

5.2.3 Influent should be assessed without the contribution of any return liquors, wash water, or recirculates, etc., generated from the sewage treatment plant.

5.3 Duration and timing of test

The duration of the test period should be a minimum of 10 days and should be timed to capture normal operational conditions, taking into account the type of system and the number of persons and hydraulic loading for which the sewage treatment plant will be type approved. Noting that the systems need a period of stabilization, the test should commence after steady-state conditions have been reached by the sewage treatment plant under test.

5.4 Loading factors

5.4.1 During the test period, the sewage treatment plant should be tested under conditions of minimum, average and maximum volumetric loadings.

- .1 For testing ashore, these loadings should be as laid down in the manufacturer's specifications. Figure 2 shows suggested timings for sampling each loading factor.
- .2 For testing on board, minimum loading should represent that generated by the number of persons on the ship when it is alongside in port, and average and maximum loadings should represent those generated by the number of persons on the ship at sea and should take account of meal times and watch rotations.

5.4.2 The Administration should undertake to assess the capability of the sewage treatment plant to produce an effluent in accordance with the standards prescribed by section 4 following minimum, average and maximum volumetric loadings. The range of conditions under which the effluent standards were met should be recorded on the Certificate of Type Approval. The form of the Certificate of Type Approval and appendix is set out in the annex to these Guidelines.

5.5 Sampling methods and frequency

5.5.1 Administrations should ensure that the sewage treatment plant is installed in a manner which facilitates the collection of samples, see figure 1. Sampling should be carried out in a manner and at a frequency which is representative of the effluent quality.

Figure 2 provides a suggested frequency for sampling, however, the frequency should take account of the residence time of the influent in the sewage treatment plant. A minimum of 40 effluent samples should be collected to allow a statistical analysis of the testing data (e.g. geometric mean, maximum, minimum, variance).

5.5.2 Influent sample point should be upstream of any return liquors, wash water, or recirculates generated from the sewage treatment plant. Where such a sample point is not readily available on ships, the flows and concentrations of these return liquors, wash water, or recirculates generated from the sewage treatment plant should be measured, so that the load can be taken away from the load of influent.

5.5.3 An influent sample should be taken and analysed for every effluent sample taken and the results recorded to ensure compliance with section 4. If possible, additional influent and effluent samples should be taken to allow for a margin of error. Samples should be appropriately preserved prior to analysis particularly if there is to be a significant delay between collection and analysis or during times of high ambient temperature.

5.5.4 Any disinfectant residual in samples should be neutralized when the sample is collected to prevent unrealistic bacteria kill or chemical oxidation of organic matter by the disinfectant brought about by artificially extended contact times. Chlorine (if used) concentration and pH should be measured prior to neutralization.

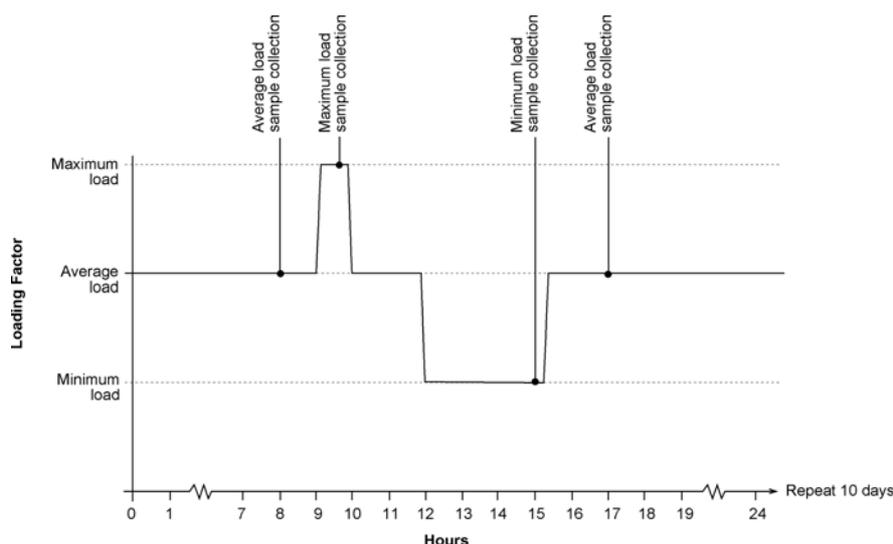


Figure 2: Suggested hydraulic loading factors and sampling frequency for testing sewage treatment plants. May be modified as necessary to take account of characteristics of individual sewage treatment plants

5.6 Analytical testing of effluent

The Administration should give consideration to the recording of other parameters in addition to those required (thermotolerant coliforms, total suspended solids, BOD₅ without nitrification, COD, pH and residual chlorine) with a view to future technological development. These parameters include total solids, volatile solids, settleable solids, volatile suspended solids, turbidity, total organic carbon, total coliforms and faecal streptococci.

5.7 Disinfectant residual

The potential adverse environmental effects of many disinfectant residuals and by-products, such as those associated with the use of chlorine or its compounds, are well recognized. It is, therefore, recommended that Administrations encourage the use of ozone, ultra-violet irradiation or any other disinfectants which minimize adverse environmental effects, whilst pursuing the thermotolerant coliform standard. When chlorine is used as a disinfectant, the Administration should be satisfied that the best technical practice is used to keep the disinfectant residual in the effluent below 0.5 mg/l.

5.8 Scaling considerations

Only full-scale marine sewage treatment plants should be accepted for testing purposes. The Administration may certify a range of the manufacturer's equipment sizes employing the same principles and technology, but due consideration should be given to limitations on performance which might arise from scaling up or scaling down. In the case of very large, very small or unique sewage treatment plants, certification may be based on results of prototype tests. Where possible, confirmatory tests should be performed on the final installation of such sewage treatment plants.

5.9 Environmental testing of the sewage treatment plant

5.9.1 The Administration should ensure that the sewage treatment plant can operate under conditions of tilt consistent with internationally acceptable shipboard practice up to 22.5° in any plane from the normal operating position.

5.9.2 Tests for certification should be carried out over the range of salinity and the range of temperatures for ambient air and flush water specified by the manufacturer, and the Administration should be satisfied that such specifications are adequate for the conditions under which the equipment must operate.

5.9.3 Control and sensor components should be subjected to environmental testing to verify their suitability for marine use. The Test Specifications section in part 3 of the annex to the Revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships (resolution MEPC.107(49)) provides guidance in this respect.

5.9.4 Any limitation on the conditions of operation should be recorded on the certificate.

5.9.5 The Administration should also consider requiring the manufacturer to include in the operating and maintenance manuals, a list of chemicals and materials suitable for use in the operation of the sewage treatment plant.

5.10 Other considerations

5.10.1 The type and model of the sewage treatment plant and the name of the manufacturer should be noted by means of a durable label firmly affixed directly to the sewage treatment plant. This label should include the date of manufacture and any operational or installation limits considered necessary by the manufacturer or the Administration.

5.10.2 Administrations should examine the manufacturer's installation, operating and maintenance manuals for adequacy and completeness. The ship should have on board at all times a manual detailing the operational and maintenance procedures for the sewage treatment plant, including safety information about the chemicals and materials actually used in the operation of the sewage treatment plant.

5.10.3 Qualifications of testing facilities should be carefully examined by the Administration as a prerequisite to their participation in the testing programme. Every attempt should be made to assure uniformity among the various facilities.

6 RENEWAL AND ADDITIONAL SURVEYS

Administrations should endeavour to ensure, when conducting renewal or additional surveys in accordance with regulations 4.1.2 and 4.1.3 of MARPOL Annex IV, that the sewage treatment plant continues to perform in accordance with the conditions outlined in regulation 4.1.1 of MARPOL Annex IV.

7 FAMILIARIZATION OF SHIP PERSONNEL IN THE USE OF THE SEWAGE TREATMENT PLANT

Recognizing that the appropriate regulations relating to familiarization are contained within the Ships Safety Management Systems under the International Safety Management Code, Administrations are reminded that ship staff training should include familiarization in the operation and maintenance of the sewage treatment plant.

8 MAINTENANCE

Routine maintenance of the system should be clearly defined by the manufacturer in the associated operating and maintenance manuals. All routine and repair maintenance should be recorded.

ANNEX

FORM OF CERTIFICATE OF TYPE APPROVAL
FOR SEWAGE TREATMENT PLANTS AND APPENDIX

BADGE
OR
CIPHER

NAME OF ADMINISTRATION

**CERTIFICATE OF TYPE APPROVAL
FOR SEWAGE TREATMENT PLANTS**

This is to certify that the sewage treatment plant, type,
having a designed hydraulic loading of cubic metres per day, (m³/day), an organic
loading of kg per day biochemical oxygen demand without nitrification (BOD₅ without
nitrification) and of the design shown on drawings Nos.
manufactured by
has been examined and satisfactorily tested in accordance with the International Maritime
Organization resolution MEPC....(...) to meet the operational requirements referred to in
regulations 9.1.1 and 9.2.1 of MARPOL Annex IV of the International Convention for the
Prevention of Pollution from Ships, 1973, as modified by the 1978 and 1997 Protocols
(as amended by resolutions MEPC.115(51) and MEPC.200(62)).

The tests on the sewage treatment plant were carried out
ashore at*
on board at*
and completed on

The sewage treatment plant was tested and produced an effluent which, on analysis,
produces:

- .1 a geometric mean of no more than 100 thermotolerant coliforms/100 Qi/Qe ml;
- .2 a geometric mean of total suspended solids of 35 Qi/Qe mg/l if tested ashore or the
maximum total suspended solids not exceeding 35 plus x Qi/Qe mg/l for the ambient
water used for flushing purposes if tested on board;
- .3 a geometric mean of 5-day biochemical oxygen demand without nitrification
(BOD₅ without nitrification) of no more than 25 Qi/Qe mg/l;
- .4 a geometric mean of chemical oxygen demand (COD) of no more than
125 Qi/Qe mg/l;
- .5 pH between 6 and 8.5;
- .6 a geometric mean of total nitrogen of no more than [20] [35] Qi/Qe mg/l or at least
[70%] [30%] reduction; and
- .7 a geometric mean of total phosphorus of no more than [1.0] [2.0] Qi/Qe mg/l or
at least [80%] [70%] reduction **.

The Administration confirms that the sewage treatment plant can operate at angles of
inclination of 22.5° in any plane from the normal operating position.

Details of the tests and the results obtained are shown on the appendix to this Certificate.

* Delete as appropriate.

** Delete for ships other than passenger ships intending to discharge sewage effluent in Special Areas.

A plate or durable label containing data of the manufacturer's name, type and serial numbers, hydraulic loading and date of manufacture should be fitted on each sewage treatment plant.

A copy of this certificate should be carried on board any ship equipped with the above described sewage treatment plant.

Official stamp

Signed

Administration of

Dated this day of..... 20.....

**APPENDIX TO
CERTIFICATE OF TYPE APPROVAL FOR SEWAGE TREATMENT PLANTS**

BADGE
OR
CIPHER

Test results and details of tests conducted on samples from the sewage treatment plant in accordance with resolution MEPC....(..):

Sewage treatment plant, Type
Manufactured by
Organization conducting the test
Designed hydraulic loadingm³/day
Designed organic loading kg/day BOD

Number of effluent samples tested
Number of influent samples tested
Total suspended solids influent quality mg/l
Total nitrogen influent quality.....mg/l as nitrogen*
Total phosphorus influent quality.....mg/l as phosphorus*

BOD₅ without nitrification influent quality mg/l
Maximum hydraulic loading m³/day
Minimum hydraulic loading m³/day
Average hydraulic loading (Qi) m³/day
Effluent flow (Qe)..... m³/day
Geometric mean of total suspended solidsmg/l
Geometric mean of the thermotolerant coliform count..... coliforms/100 ml
Geometric mean of BOD₅ without nitrification mg/l
Geometric mean of CODmg/l
Geometric mean of total nitrogenmg/l* or %*
Geometric mean of total phosphorus.....mg/l* or %*
Maximum pH:
Minimum pH :
Type of disinfectant used
If Chlorine - residual Chlorine:
 Maximum mg/l
 Minimum mg/l
 Geometric Mean mg/l

Was the sewage treatment plant tested with:

Fresh water flushing? Yes/No*
Salt water flushing? Yes/No*
Fresh and salt water flushing? Yes/No*
Grey water added? Yes – proportion: /No*

* Delete as appropriate.

Was the sewage treatment plant tested against the environmental conditions specified in section 5.9 of resolution MEPC [...(....)]:

Temperature Yes/No*
Humidity Yes/No*
Inclination Yes/No*
Vibration Yes/No*
Reliability of Electrical and Electronic Equipment Yes/No*

Limitations and the conditions of operation are imposed:

Salinity
Temperature
Humidity
Inclination.....
Vibration

Results of other parameters tested

Official stamp

Signed

Administration of

Dated this day of..... 20.....

* Delete as appropriate.

ANNEX 16

DRAFT REVISED BIENNIAL AGENDA FOR THE 2012-2013 BIENNIUM, INCLUDING ITEMS ON THE COMMITTEE'S POST-BIENNIAL AGENDA UNDER THE PURVIEW OF THE SUB-COMMITTEE

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT (DE)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number**	Description				
1.1.2.2	Cooperation with IACS: consideration of unified interpretations	MSC/MEPC	All sub-committees		Continuous
1.1.2.3	Development of amendments to the 2011 ESP Code	MSC	DE		Continuous
1.1.2.11	Review of provisions for helicopters in SOLAS	MSC	DE		Continuous
2.0.1.10	Revision of the Standard specification for shipboard incinerators (resolution MEPC.76(40))	MEPC	DE		2012 2013
2.0.1.24	Development of amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations	MSC	DE		2013
5.1.2.1	Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory	MSC	DE	FSI/NAV/STW	2013
5.1.2.3	Development of a new framework of requirements for life-saving appliances	MSC	DE		2012 2013
5.1.2.4	Mandatory instruments: Development of performance standards for recovery systems for all types of ships	MSC	DE		2012
5.2.1.11	Development of safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	MSC	DE		2013
5.2.1.12	Development of amendments to the LSA Code for thermal performance of immersion suits	MSC	DE		2012 2013

* Items printed in bold have been selected for the provisional agenda for DE 57. Struck-out text indicates proposed deletions and shaded text indicates proposed changes. Deleted outputs will be maintained in the report on the status of planned outputs.

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

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT (DE) [*]					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number **	Description				
5.2.1.13	Development of amendments to the LSA Code for free-fall lifeboats with float-free capabilities	MSC	DE		2012 2013
5.2.1.17	Mandatory instruments: Development of a mandatory Code for ships operating in polar waters	MSC/MEPC	DE	FP/COMSAR/ NAV/SLF/STW	2012 2014
5.2.1.20	Protection against noise on board ships	MSC	DE		2012
5.2.1.21	Classification of offshore industry vessels and consideration of the need for a non-mandatory Code for offshore construction support vessels	MSC	DE		2013
5.2.1.23	Development of guidelines for use of fibre reinforced plastic (FRP) within ship structures	MSC	DE	FP	2013
5.2.1.24	Mandatory instruments: Revision of testing requirements for lifejacket RTDs in resolution MSC.81(70)	MSC	DE		2012 2013
5.2.1.25	Development of guidelines for wing-in-ground craft	MSC	DE	FP/COMSAR/ NAV/SLF/STW	2013
5.2.1.27	Revision of the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18))	MSC	DE		2012 2013
5.2.1.28	Amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments	MSC	DE		2013
7.1.2.3	Provision for the reduction of noise from commercial shipping and its adverse impacts on marine life	MEPC		DE	2013
7.1.2.14	Revision of the Revised guidelines on implementation of effluent standards and performance tests for sewage treatment plants (resolution MEPC.159(55))	MEPC	DE		2012
[5.2.1	Development of requirements for onboard lifting appliances and winches	MSC	DE		2014]

ITEMS ON THE COMMITTEE'S POST-BIENNIAL AGENDA UNDER THE PURVIEW OF THE SUB-COMMITTEE

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Timescale (sessions)	References
Number	Reference to Strategic Direction	Reference to High-level Actions	Description					
1	2	2.0.1	Mandatory application of the Performance standard for protective coatings for void spaces on bulk carriers and oil tankers	MSC	DE		2	MSC 76/23, paragraphs 20.41.2 and 20.48; DE 50/27, section 4
2	2	2.0.1	Performance standard for protective coatings for void spaces on all types of ships	MSC	DE		2	MSC 76/23, section 20; DE 50/27, section 4
3	2	2.0.1	Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC	DE		2	MSC 86/26, paragraph 23.39
4	5.2	5.2.1.23	Development of guidelines for use of fibre reinforced plastic (FRP) within ship structures	MSC	[DE] [FP]	[DE] [FP]	2	MSC 89/25, paragraph 22.24; DE 56/25, section 14
5	5.2	5.2.1	Development of amendments to the 2009 MODU Code concerning lifeboat drills	MSC	DE		2	MSC 89/25, paragraph 22.24
6	5.2	5.2.1	Review of the 2009 Code on Alerts and Indicators	MSC	DE	NAV	2	MSC 89/25, paragraph 22.25
7	5.2	5.2.1	Development of requirements for onboard lifting appliances and winches	MSC	DE		2	MSC 89/25, paragraph 22.26

ANNEX 17

PROVISIONAL AGENDA FOR DE 57

- Opening of the session
- 1 Adoption of the agenda
- 2 Decisions of other IMO bodies
- 3 Consideration of IACS unified interpretations and amendments to the ESP Code
- 4 Revision of the Standard specification for shipboard incinerators (resolution MEPC.76(40))
- 5 Development of amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations
- 6 Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory
- 7 Development of a new framework of requirements for life-saving appliances
- 8 Development of safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III
- 9 Development of amendments to the LSA Code for thermal performance of immersion suits
- 10 Development of amendments to the LSA Code for free-fall lifeboats with float-free capabilities
- 11 Development of a mandatory Code for ships operating in polar waters
- 12 Classification of offshore industry vessels and consideration of the need for a non-mandatory Code for offshore construction support vessels
- 13 Revision of testing requirements for lifejacket RTDs in resolution MSC.81(70)
- 14 Development of guidelines for wing-in-ground craft
- 15 Revision of the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18))
- 16 Amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments
- 17 Provisions for the reduction of noise from commercial shipping and its adverse impacts on marine life
- 18 Development of requirements for onboard lifting appliances and winches

- 19 Biennial agenda and provisional agenda for DE 58
- 20 Election of Chairman and Vice-Chairman for 2014
- 21 Any other business
- 22 Report to the Maritime Safety Committee

ANNEX 18

REPORT ON THE STATUS OF PLANNED OUTPUTS OF THE HIGH-LEVEL ACTION PLAN OF THE ORGANIZATION AND PRIORITIES FOR THE 2012-2013 BIENNIUM

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
1.1.2.2	Cooperation with IACS: consideration of unified interpretations	Continuous	MSC			Ongoing	Ongoing	MSC 78/26, paragraph 22.12; DE 56/25, section 13
1.1.2.3	Development of amendments to the 2011 ESP Code	Continuous	MSC			Ongoing	Ongoing	DE 55/22, paragraph 10.9
1.1.2.11	Review of provisions for helicopters in SOLAS	Continuous	MSC	DE		Postponed	Postponed	MSC 89/25, section 22
2.0.1.10	Revision of the Standard specification for shipboard incinerators (resolution MEPC.76(40))	2012 2013	MEPC	DE		In progress		MEPC 62/24, section 20; DE 56/25, section 23
2.0.1.24	Mandatory instruments: Development of amendments to SOLAS regulation II-1/40.2 concerning general requirements on electrical installations	2013	MSC	DE		In progress		MSC 86/26, paragraph 23.36; DE 56/25, section 4
5.1.2.1	Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory	2013	MSC	DE	FSI NAV STW	In progress		MSC 74/24, paragraph 21.34; DE 56/25, section 5
5.1.2.3	Development of a new framework of requirements for life-saving appliances	2012 2013	MSC	DE		In progress		MSC 82/24, paragraph 21.49; DE 56/25, section 6

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.1.2.4	Mandatory instruments: performance standards for recovery systems for all types of ships	2012	MSC	DE		Completed		MSC 81/25, paragraph 23.49.1; DE 56/25, section 3
5.2.1.11	Mandatory instruments: development of safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2013	MSC	DE		In progress		MSC 84/24, paragraphs 3.92 and 21.52; DE 56/25, section 7
5.2.1.12	Mandatory instruments: amendments to the LSA Code for thermal performance of immersion suits	2012 2013	MSC	DE		In progress		MSC 84/24, paragraph 22.48; DE 56/25, section 8
5.2.1.13	Mandatory instruments: amendments to the LSA Code for free-fall lifeboats with float-free capabilities	2012 2013	MSC	DE		In progress		MSC 76/23, paragraphs 20.41.3; and 20.48; DE 56/25, section 9
5.2.1.17	Mandatory instruments: development of a mandatory Code for ships operating in polar waters	2012 2014	MSC MEPC	DE	FP/COMSAR/ NAV/SLF/STW	In progress		MSC 86/26, paragraph 23.32; DE 56/25, section 10
5.2.1.20	Non-mandatory instruments: protection against noise on board ships	2012	MSC	DE		Completed		MSC 83/28, paragraph 25.41; DE 56/25, section 11

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
5.2.1.21	Non-mandatory instruments: classification of offshore industry vessels and consideration of the need for a non-mandatory code for offshore construction support vessels	2013	MSC	DE		In progress		MSC 85/26, paragraph 23.27; DE 56/25, section 12
5.2.1.23	Non-mandatory instrument: Development of guidelines for use of Fibre Reinforced Plastic (FRP) within ship structures	2013	MSC	DE	FP	Postponed	Postponed	MSC 87/26, paragraph 24.31; DE 56/25, section 14
5.2.1.24	Mandatory instruments: Revision of testing requirements for lifejacket RTDs in resolution MSC.81(70)	2012 2013	MSC	DE		In progress		MSC 88/26, paragraph 23.32; DE 56/25, section 15
5.2.1.25	Development of guidelines for wing-in-ground craft	2013	MSC	DE	FP/COMSAR/NAV/SLF/STW	In progress		MSC 88/26, paragraph 23.30; DE 56/25, section 18
5.2.1.27	Revision of the Recommendation on conditions for the approval of servicing stations for inflatable liferafts (resolution A.761(18))	2012 2013	MSC	DE		In progress		MSC 87/26, paragraph 24.30; DE 56/25, section 17
5.2.1.28	Amendments to SOLAS regulation II-1/11 and development of associated Guidelines to ensure the adequacy of testing arrangements for watertight compartments	2013	MSC	DE		In progress		MSC 86/26, paragraph 23.36; DE 56/25, section 16

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2012-2013	Description	Target completion year	Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Status of output for Year 1	Status of output for Year 2	References
7.1.2.3	Provision for the reduction of noise from commercial shipping and its adverse impacts on marine life	2013	MEPC	DE		In progress		MEPC 58/23, paragraph 19.6; DE 56/25, section 24
7.1.2.14	Revision of the Revised guidelines on implementation of effluent standards and performance tests for sewage treatment plants (resolution MEPC.159(55))	2012	MEPC	DE		Completed		MEPC 61/24, Paragraph 7.36; DE 56/25, section 19

ANNEX 19

STATEMENT BY THE DELEGATION OF NEW ZEALAND (on agenda item 10)

The delegation of New Zealand stated that they fully supported the development of a mandatory Polar Code and wished to see its completion and entry into force as soon as possible by the most expedient method, however, were conscious of the realities and difficulties faced in reaching a robust code that adequately addressed the needs of both polar regions and called upon all Member States to participate in the working group discussions to achieve, by consensus, a Code that met the strategic directions of IMO. New Zealand had advocated at the outset that the Code should cover all ship types, including fishing vessels and yachts. They informed the Sub-Committee that so far in this season there had been two incidents involving fishing vessels in the Ross Sea, one, a fire resulting in three crew and the ship being lost plus a number of other crew seriously injured with burns, and the second, a near foundering resulting in significant allocation of resources to rescue the crew, undertake temporary repairs and tow the vessel to port. These incidents and similar ones in past fishing seasons in the Antarctic were a great concern to New Zealand, particularly in light of their SAR responsibilities and interest in protecting human life and the Antarctic marine environment.

Likewise, a yacht without any apparent ice-strengthening, the **Berserk**, was presumed to have sunk in the McMurdo Sound vicinity last summer, and another unstrengthened yacht, the **Nilaya**, was attempting to make a similar voyage through heavy ice this year. New Zealand was concerned that the publicity generated by this latest voyage, which did not have authorisation from any Antarctic Treaty Party, could result in an increase in attempts by yachtsmen to sail through the area in vessels unsuited to the severe conditions of the Ross Sea and was of the view that all new ships that operate in the Antarctic should be ice-strengthened to a prescribed minimum standard, given the extreme and unforgiving conditions and the region's remoteness from SAR support.

Given the pristine nature of the polar environments, the delegation strongly encouraged adoption of a precautionary approach in the Polar Code, with stricter controls being applied when insufficient information was available on the likelihood or potential effects of any substances entering the marine environment in these regions, and recommended adoption of the principles in the Protocol on Environmental Protection to the Antarctic Treaty (Article 3) as these promoted good environmental practices and good governance in the Antarctic region.

The delegation remained uncertain regarding the proposed definition of ship categories for ice-strengthening being based on a limit of 10% ice cover and was particularly concerned in respect of how appropriate and sufficiently accurate data would be provided and by whom, e.g. Contracting Governments, coastal or flag states, noting that the Antarctic was not a coastal state and had no coastal states within the proposed Antarctic polar region.

The delegation expressed deep appreciation to Ms. Turid Stemre of Norway, the correspondence group coordinator, for her strong leadership of the group and the long hours of preparation behind the excellent guidance she had provided Members during the group's discussions.

ANNEX 20

STATEMENT BY THE DELEGATION OF THE UNITED STATES (on agenda item 10)

"The United States expresses our sincere appreciation to Norway, and in particular Ms. Turid Stemre, for her dedicated efforts in coordinating the correspondence group again. Despite the hard work and support of the delegations in this Sub-Committee, it is clear that we will not meet our target completion date of 2012.

We believe this is very unfortunate. The importance of developing the Polar Code cannot be overstated. In order to provide the needed safety enhancements for crews and passengers on board ships operating in the polar regions, effectively mitigate the impact of these vessel operations and protect these vulnerable and pristine areas, we believe this Sub-Committee must explore all available options and pursue the actions necessary to expedite completion of the Polar Code.

As we did last year at DE55, we again propose that this Sub-Committee coordinate with and seek assistance from the other sub-committees at the earliest opportunity so that they may develop those sections within their areas of expertise. In this way, rather than maintain the entire burden of work on ourselves, this Sub-Committee could make best use of all the resources within the entire organization and facilitate completion of this item as close as possible to the target completion date of 2012.

We believe that this Sub-Committee should be prepared at the end of this session to seek assistance from other sub-committees – and request advice and assistance in developing appropriate requirements under their remit for the Polar Code. As such, the United States recommends that Chapter 1 through 14 of the draft Polar Code be forwarded to other sub-committees with the request that they review and further develop, as necessary, those draft requirements within their respective areas of expertise. With suitable terms of reference and direction from the subcommittee, we hope there is still ample time left in the week for the working group to facilitate this need.

And while review and work of chapter 1 through 14 is underway with the other subcommittees, this Subcommittee would then be able to commence work on the many environmental issues that still need to be resolved.

Lastly, Madam Chairman, we are concerned that questions concerning the applicability of the Polar Code have been raised again. This delegation understood this issue to have been resolved last year at DE 55. In particular, paragraph 12.7 of DE 55/22, our report to the Maritime Safety Committee, stated "the Sub-Committee agreed, in principle, that: with regard to the development of the draft Polar Code, a two-step approach should be taken, i.e. the Code should initially apply to SOLAS passenger and cargo ships, taking into account the urgent need for relevant mandatory requirements, and later requirements for non-SOLAS ships, such as fishing vessels, may be developed, after consideration by the Organization"."

ANNEX 21

STATEMENT BY THE DELEGATION OF THE RUSSIAN FEDERATION (on agenda item 10)

"The Russian Federation would like to express its gratitude to all those who took part in the development of the draft Polar Code and also convey special thanks to Ms. Turid Stemre as the co-ordinator, for their work done in an excellent way.

Despite that the need in having such document in place grows from year to year, it would be imprudent to disregard the influence that would be exerted by each Code's requirement on the shipping in polar waters and economic activity in adjacent areas of a number of States. Multiple environmental organisations keep mentioning the increased vulnerability of ecological systems of Arctic and Antarctic to the human activity.

In our view, the requirements concerning discharge of grey waters, which are not subject to the MARPOL Convention, do not appear to have been well substantiated. It would be extremely difficult to comply with these requirements by ships operating several months during the summer season in the Arctic, which deliver goods indispensable for survival to the polar regions. And the sea transportation is there the only means of delivering such goods, having no alternative. We are not aware of any results of a meaningful research which would provide evidence of damage caused by the discharge of grey waters to the polar environment and so far no any evidence of harmful consequences thereof had been reported. The same can be said in respect of the garbage incineration.

I would like to draw your particular attention to the proposals to ban HFO which, once implemented through the Code, would lead to a significant increase in shipping costs in polar areas. The main reasoning behind such proposal is that spilled HFO is much more dangerous than the diesel oil. However, for some reason the requirement on structural protective measures aimed at preventing accidental spills (prohibition on the location of tanks having the ship's shell as its boundary) is not mentioned in this context.

We believe that conformity with the requirement of paragraph 15.3.3 of the draft Code, i.e. any damage to the ship's shell shall not cause spillage of substances controlled by MARPOL, is sufficient to limit the risk of accidental spill.

The Russian Federation believes that all ships operating in polar waters shall be subject to all requirements of the MARPOL Convention but not in exceedance thereof. It would be expedient to elaborate in the Code only requirements for hull structure aimed at limiting the likelihood of spill as a result of an ice damage."

ANNEX 22

**STATEMENT BY THE DELEGATION OF THE RUSSIAN FEDERATION
(on document DE 56/WP.4)**

"The Russian Federation would like to express its deep appreciation to Ms Turid Stemre as well as to all participants to the Working Group for their tremendous work done. We would like to note significant progress made during this week in the development of the draft Polar Code and express our hope for further productive work on developing the Code.

We believe the work on the draft Code should be pursued and would like to support the proposal to re-establish the Correspondence Group, as well as to hold an intersessional meeting on all issues related to the environment protection, pertaining to the future Code.

We would like specifically to draw your attention to paragraph 14 of the report of the group, in which it offers to the Sub-Committee two options, namely, to continue the work on the text of the draft Code within DE and its groups, or refer the relevant proposals to MEPC for their consideration.

As far as it may be seen from annex 4 to the report, among matters suggested to be referred to MEPC, there are proposals on establishing special areas in the Arctic in relation to the discharge of treated and untreated sewage and grey waters, garbage management, emission of SO_x and NO_x and use of heavy fuel oil.

In accordance with the existing IMO procedures, proposals on establishing special areas can originate from the Parties to MARPOL, and such proposals should be adequately substantiated. We oppose to the violations of the basic provisions of the MARPOL 1973/78 Convention."

ANNEX 23

STATEMENT BY THE DELEGATION OF FRANCE (on document DE 56/WP.7)

"1 Regarding the measurement techniques discussed in point 5 and the fact that they are inappropriate to ships, we would like to point out that the ISO 140-4 is used for measurement in the building, however it has been long-established as reference in the naval environment. Furthermore, this standard is completed in 2004 by guidelines for special situations in the field (ISO 140-14) such that we can meet them in ships.

2 We remind that the index laboratory is only used to compare materials with each other in perfect installation conditions and do not necessarily reflect the installation configuration or accommodation arrangement of a ship. To be consistent with the requirements of chapters 4 and 5, which are measured in situ, we consider it essential that the criteria of chapter 6 is also based on measurement in real conditions.

3 Paragraph 5 indicates that we can have differences greater than 3 dB between a sound laboratory index and an index from a field measurement. We agree with this point and note that these differences are mainly induced by the quality of installation and arrangements. That is why we feel it is essential to conduct in situ measurements that reflect the real quality of insulation and not a theoretical value based on a laboratory index.

From the above, France has a reservation on the fact that paragraph 6.3 of the draft Code of rules on noise levels on board ships is not mandatory."

ANNEX 24

STATEMENTS BY THE DELEGATIONS OF THE NETHERLANDS AND THE UNITED STATES (on agenda item 13)

Netherlands

"I would like to thank the distinguished delegate of IACS for the introduction of document DE 56/13/7. It indicates that apparently there is a lack of consistency in the LSA Code which creates confusion as to the application of certain provisions. At the same time the Netherlands is not convinced that the proposed UI will remove the confusion.

In the perception of our Administration, the free-fall certification height is a fixed design parameter for the construction of the FFB. This is more or less confirmed by the requirements of LSA Code paragraphs 4.7.4 and 4.7.7 respectively, linking a strength requirement to the free-fall certification height, and requiring that this design parameter be stated in the certificate of approval of the FFB. As such the free-fall certification height has no relation whatsoever with the lightest seagoing condition criterium of any ship.

Yet Madam Chairman, in the UI the "greatest launching height", being part of the free-fall certification height definition, is related to the lightest seagoing condition, assuming that the "greatest launching height", and consequently the free-fall certification height, would be an installation parameter for individual ships.

In this respect the UI would create a discrepancy in the LSA Code, and it is the opinion of the Netherlands that this would add to the confusion rather than remove it.

The Netherlands does however support the last part of the UI dealing with the determination of the ability of the lifeboat to be safely launched against a trim of up to 10° and list of up to 20°."

United States

"Although 6.1.4.4 in the LSA Code might be better placed in SOLAS, because it is a ship-specific requirement, it does state that the distance from the lowest point on the lifeboat in its lightest seagoing condition should not exceed the free-fall certification height, taking into consideration 4.7.3 (which addresses list and trim)."

ANNEX 25

STATEMENT BY THE DELEGATION OF THE RUSSIAN FEDERATION (on agenda item 18)

"The Russian Federation would like to support the initiative of the Republic of Korea concerning the revision of the "Interim Guidelines for Wing-in-Ground Craft" (MSC.1/Circ.1054), referred to hereunder as the "Interim Guidelines", and supports in general the document presented by it (DE 56/18).

Nonetheless, not all proposals in this document may be assessed as going in right direction and being sufficiently substantiated. A part of them contradicts the main concept of WIG as the means of sea transportation, as adopted by IMO and reflected in the "Interim Guidelines", as well as to the agreement between IMO and ICAO.

Such proposals are contained in paragraphs 9 to 12 of the document by the Republic of Korea. The views of the Russian Federation on issues dealt with in these paragraphs, and on how to resolve the associated problems, are set forth below.

Paragraph 9 – the Republic of Korea proposed to extend the "Interim Guidelines" to all categories and sizes of WIG, including those carrying less than 12 passengers.

At present, all international instruments contain the definition: "a passenger ship is a ship which carries more than twelve passengers". The Russian Federation believes that the "Interim Guidelines" should not be extended to WIG craft carrying 12 passengers or less for the following reasons:

- .1 the international definition of a passenger ship could not be applied to such WIG craft, and these craft formally should not be referred to as passenger WIGs. Equally, they could not be referred to as cargo ships, as such definition would not be applicable to them. They will require some other definition;
- .2 changing the current international definition of passenger ships in the international instruments for these very craft would not make much sense; and
- .3 a WIG carrying 12 passengers or less should be considered as a small craft. Small craft are not capable of complying with many international requirements for passenger ships, including the requirements laid down in the "Interim Guidelines". For instance, they would not be able to comply with the requirements dealing with seaworthiness, fire safety, arrangements and equipment, instruments, and others.

As a consequence of the above, the Russian Federation cannot go along with the proposed change in paragraph 8 of the Preamble to the "Interim Guidelines", and suggests to bring it into conformity with the current international definition of a passenger ship, by amending it to read as follows:

- "8 The [Interim] guidelines are applied to WIG craft carrying more than 12 passengers."

Obviously, the Russian Federation recognizes the fact of existence of such craft, and that the number of such craft will increase. Small WIGs will be able to undertake international voyages and, in order to ensure their safety, international requirements are absolutely necessary.

The Russian Federation considers it would be more reasonable and correct to develop new guidelines on small WIG craft similar to those which were developed in the Russian Federation and have been in force since 1998.

Paragraph 10 – the Republic of Korea proposes to amend the definitions for WIG types (A, B and C) in paragraph 4.45 (sub-paragraphs 4.45.1 and 4.45.2).

In our view, this proposal may originate from an incorrect interpretation of the term "ground effect" and the existing definitions of WIG types. These definitions contradict the concept of WIG operation, as adopted by IMO and agreed by ICAO, and break the fine-tuned distribution of responsibility of the two Organisations.

In paragraph 4.45.1 of the "Interim Guidelines", type A is defined only as a "craft which is certified for operation only in ground effect".

The Republic of Korea proposes to extend this zone as high as 150 m above the surface, i.e. up to the minimum safe altitude for an aircraft, according to ICAO requirements.

However, the altitude of the "ground effect" zone, as defined in paragraph 4.20 of the "Interim Guidelines" is not to exceed the mean chord length of the wing of the WIG craft. Even for WIGs having a displacement of 500 tons, such length does not exceed 20 m.

Up to now, and in the foreseeable future, no WIG having a mean chord length of the wing of 150 m, which would, in theory, be able to use the "ground effect" at the height of 150 m, are expected to appear. That is why the proposal does not have its practical meaning. Moreover, if such WIGs appear in some future, the existing agreement between IMO and ICAO will have to be revised.

In paragraph 4.45.2 of the "Interim Guidelines", the Republic of Korea proposes to enact the operation of type B WIGs for arbitrary purposes. At the same time, IMO and ICAO agreed that the "fly-over" mode of type B and C WIGs at altitudes of up to 150 m may be used only in an emergency situation (e.g., to prevent collision, fly-over an object, etc.), and for a limited period of time (see paragraphs 5.2 and 4.46.7 of the "Interim Guidelines" and paragraph 4 of its Preamble).

For these reasons the Russian Federation cannot agree to the both changes proposed to paragraph 4.45 of the "Interim Guidelines".

To make definitions of WIG types more explicit and unambiguous, the Russian Federation proposes to insert the following amendments into the wording of paragraph 4.45 which would not misrepresent the concept adopted by IMO and ICAO:

- "4.45 WIG craft are categorized according to the following types:
- .1 type A: a craft which is certified for operation only in ground effect;

- .2 type B: a craft which is certified for sustained operation in ground effect and to temporarily increase its altitude to a limited height outside the influence of ground effect but not exceeding 150 m above the surface in emergency situations; and
- .3 type C: a craft which is certified for sustained operation in ground effect and temporarily increase its altitude to a limited height outside the influence of ground effect but not exceeding 150 m above the surface in emergency situations and also for operation at altitude exceeding 150 m above the surface."

Besides, in order to make it even more clear, the Russian Federation considers it necessary and proposes to insert the following amendments into paragraph 3.4 of Part A of the "Interim Guidelines" dealing with, as a matter of fact, aircraft mode of operation of type C WIGs:

"3.4 These [Interim] Guidelines do not apply to type C craft at their operations in aircraft mode. In this mode such craft are defined as aircraft by the International Civil Aviation Organisation (ICAO) and should comply with all relevant ICAO requirements. References to aircraft mode of type C craft are included in these [Interim] Guidelines for reference only."

Paragraph 11 – in this paragraph, the Republic of Korea proposes to supplement the term "ground effect" by a requirement that sustainability of the flight should be ensured within the range of that effect.

In principle, this is a correct requirement. However, it has nothing to do with the definition of the "ground effect". It should not be part of paragraph 4 "Definitions" of Part A. In general, it should relate to all operational modes, which is already substantially reflected in the "Interim Guidelines" (see Part B, chapter 1 "Buoyancy, stability and subdivision", paragraph 1.1.3.1).

It may be concluded that the proposal in paragraph 11 should be rejected.

Paragraph 12 – the Republic of Korea proposes to supplement paragraph 4.2.1 of the "Interim Guidelines", which establishes a requirement on extremely low probability of a total failure of all WIG's systems of control of its movement under normal conditions, by a phrase that this requirement should only be valid when such failures may result in hazardous or catastrophic consequences.

However, a total failure of all systems of control of its movement practically always leads to such consequences. To define it in advance that it is not the case is not feasible. That is why the supplement loses its meaning.

It may be concluded that the proposal to amend paragraph 4.2.1 of the "Interim Guidelines" should be rejected.

A similar phrase is contained in the proposal by the Republic of Korea to supplement paragraph 15.2.6 of the "Interim Guidelines" regarding the necessity of analysis of any stabilization system. However, this proposal contains a fairly substantiated supplement concerning the necessity of systematic information processing.

The Russian Federation would like to partly accept the proposal by the Republic of Korea on paragraph 15.2.6 of the "Interim Guidelines" and proposes the following abridged version of supplementing this paragraph:

"15.2.6 The SSA specified in Part C should include analysis of any stabilization system applying to the craft. Such systems should be implemented by systematic process to secure sufficient reliability."

The Russian Federation would like to express its consent with the proposals contained in paragraphs 13 and 14 of their document.

The Russian Federation requests to include the above comments on document DE 56/18 by the Republic of Korea in the report to the Committee in order to take due account thereof in the further work on this output."

ANNEX 26

**STATEMENTS BY THE DELEGATIONS OF ITALY AND INDIA
(on agenda item 22)**

Italy

"With reference to the tragic episode occurred off Kerala on 15 February, involving an Italian mercantile vessel and an Indian fishing boat, resulting in the loss of life of two of the Indian fishermen on board, at the current stage this delegation wishes to express its heartfelt condolences, also on behalf of the Italian Authorities, to the families of the two people who have lost their lives and to the Indian Authorities. We would now wish to have a clear picture of what happened and we trust that the investigation conducted by the Indian Authorities will bring all necessary clarification to ascertain responsibilities in this tragic circumstance. As we have already declared, the Indian Authorities can expect the utmost cooperation in this endeavour from the Italian Government and from all relevant Agencies. This delegation is also at the disposal of the Indian Delegation and of IMO if required."

India

India thanked the Italian delegation for their offer for cooperation, and informed that according to the preliminary reports the firing on the Indian fishermen by armed guards from the Italian merchant ship was unprovoked and without any warning, and that the investigation is in progress and full details will emerge only after detailed investigations.
