



SUB-COMMITTEE ON SHIP DESIGN AND
EQUIPMENT
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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

Introduction

1.1 The Sub-Committee held its fifty-fourth session from 25 to 29 October 2010 under the chairmanship of Mrs. Anneliese Jost (Germany). The Vice-Chairman, Dr. Susumu Ota (Japan), was also present.

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

ANGOLA	LIBERIA
ANTIGUA AND BARBUDA	LIBYAN ARAB JAMAHIRIYA
ARGENTINA	MALAYSIA
AUSTRALIA	MALTA
BAHAMAS	MARSHALL ISLANDS
BANGLADESH	MEXICO
BELGIUM	MOROCCO
BELIZE	NETHERLANDS
BRAZIL	NEW ZEALAND
CANADA	NIGERIA
CHILE	NORWAY
CHINA	PANAMA
COOK ISLANDS	PAPUA NEW GUINEA
CUBA	PHILIPPINES
CYPRUS	POLAND
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	REPUBLIC OF KOREA
DENMARK	RUSSIAN FEDERATION
DOMINICA	SAUDI ARABIA
EGYPT	SINGAPORE
FINLAND	SOUTH AFRICA
FRANCE	SPAIN
GERMANY	SWEDEN
GHANA	THAILAND
GREECE	TURKEY
ICELAND	TUVALU
IRAN (ISLAMIC REPUBLIC OF)	UKRAINE
IRAQ	UNITED KINGDOM
ISRAEL	UNITED STATES
ITALY	URUGUAY
JAPAN	VANUATU
KIRIBATI	VENEZUELA (BOLIVARIAN REPUBLIC OF)

and the following Associate Member of IMO:

HONG KONG, CHINA

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

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

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

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL SHIPPING FEDERATION (ISF)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
COMITÉ INTERNATIONAL RADIO-MARITIME (CIRM)
BIMCO
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
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)
INTERNATIONAL GROUP OF P & I ASSOCIATIONS (P & I CLUBS)
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 SAILING FEDERATION (ISAF)
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
THE ROYAL INSTITUTION OF NAVAL ARCHITECTS (RINA)
INTERFERRY
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
NACE INTERNATIONAL
THE NAUTICAL INSTITUTE (NI)
PACIFIC ENVIRONMENT

Opening address of the Secretary-General

1.4 The Director, Maritime Safety Division, on behalf of the Secretary-General, delivered the opening address, the full text of which is reproduced in document DE 54/INF.9.

Chairman's remarks

1.5 The Chairman, in thanking the Director, stated that the Secretary-General's words of encouragement as well as his advice and requests would be given every consideration and taken into account under relevant agenda items and that his helpful guidance on the subjects to be considered by the Sub-Committee was very much appreciated, in particular concerning the further work on the mandatory Polar Code, one of the most important items on the agenda, and the reminder that 2010 was the year of the seafarer which would give the work of the Sub-Committee regarding life-saving appliances a special impetus, whereby it was hoped that work on several connected matters could be progressed substantially at this session.

Adoption of the agenda

1.6 The Sub-Committee adopted the agenda for the fifty-fourth session (DE 54/1) and agreed to be guided in its work, in general, by the annotations contained in document DE 54/1/1. The agenda, as adopted, with the list of documents considered under each agenda item, is set out in document DE 54/INF.10.

2 DECISIONS OF OTHER IMO BODIES

General

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by MSC 87 (DE 54/2) and COMSAR 14, MEPC 60, FP 54, FSI 18 and NAV 56 (DE 54/2/2), and took them into account in its deliberations when dealing with relevant agenda items.

Outcome of MEPC 61

2.2 The Sub-Committee also noted information by the Secretariat on the outcome of MEPC 61, in particular that MEPC 61, when approving draft amendments to MARPOL Annex IV, recognized that the Revised guidelines on implementation of effluent standards and performance tests for sewage treatment plants (resolution MEPC.159(55)) would need updating in view of the new requirements and agreed to instruct the DE Sub-Committee to carry out this work. Consequently, MEPC 61 approved the inclusion of a new unplanned output in the Sub-Committee's biennial agenda and provisional agenda for DE 55 on "Revision of resolution MEPC.159(55)" with a target completion date of 2012 (MEPC 61/24, paragraph 7.36).

2.3 The Sub-Committee further noted that MEPC 61, regarding noise from commercial shipping and its adverse impacts on marine life (MEPC 61/19), having noted that the propeller was the main source of ship-generated underwater noise and that issues such as propulsion, hull design, onboard machinery and operational modifications relate to ship design and equipment, decided to refer these technical matters to DE 54 under agenda item 14 (Protection against noise on board ships), for advice to the relevant MEPC correspondence group (see also paragraphs 14.8 and 14.9).

Outcome of C 104

2.4 With regard to the outcome of C 104, the Sub-Committee noted that the Council had approved a number of cost-saving measures, following consideration of the recommendations of the Council Working Group on Strategic Planning on improving the conduct of meetings with a view to increasing efficiency and effectiveness (C 104/D, section 3). In this regard, the following measures of immediate interest to the work of the Sub-Committee were noted:

- .1 documents, other than information documents, which contain more than 20 pages, should not be translated into all working languages in their entirety, but should include, for translation purposes, a summary of the document not longer than four pages, with the technical content submitted as an annex in the language needed by working groups (e.g., English);
- .2 only two copies of working papers printed for circulation during a meeting should be printed per Member State, Associate Member and IGO and one copy per NGO;

- .3 working papers should be uploaded to IMODOCS simultaneously with being printed and distributed in hard copy;
- .4 the Chairmen of IMO organs and the Secretariat should examine how best to reduce the size of meeting reports and standardize their style and structure; and
- .5 to save meeting time, information documents, and documents requiring no action other than for their contents to be noted, should not be introduced in the plenary meetings of any IMO organ.

3 CONSIDERATION OF IACS UNIFIED INTERPRETATIONS

3.1 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 an appropriate IMO interpretation.

Stowage of marine evacuation systems

3.2 The Sub-Committee considered document DE 54/3 (IACS), providing the text of an IACS Unified Interpretation (UI SC 143) of SOLAS regulation III/15.1 concerning the stowage of marine evacuation systems, in particular with regard to the term "any openings", and, having noted the substantial support for the interpretation, agreed to a draft MSC circular on Unified interpretation of SOLAS regulation III/15.1, as set out in annex 1, for submission to MSC 89 for approval. The Sub-Committee clarified that it was not the intention to apply the interpretation retrospectively and, therefore, agreed to insert a place holder for a date of application in paragraph 2 of the draft circular, whereby the date of application should be the date of approval of the interpretation by the Committee.

Mechanical, hydraulic and electrical independency and failure detection and response of steering control systems

3.3 The Sub-Committee considered document DE 54/3/1 (IACS), providing the text of an IACS Unified Interpretation (UI SC 94) on mechanical, hydraulic and electrical independency and failure detection and response of steering control systems as required by SOLAS regulation II-1/29, and, having noted the substantial support for the interpretation, agreed to a draft MSC circular on Unified interpretation of SOLAS regulation II-1/29, as set out in annex 2, for submission to MSC 89 for approval. The Sub-Committee clarified that it was not the intention to apply the interpretation retrospectively and, therefore, agreed to insert a place holder for a date of application in paragraph 2 of the draft circular, whereby the date of application should be the date of approval of the interpretation by the Committee.

4 GUIDANCE TO ENSURE A CONSISTENT POLICY FOR WATERTIGHT DOORS TO REMAIN OPEN DURING NAVIGATION

4.1 The Sub-Committee recalled that DE 53, when discussing the draft Guidance for Administrations to ensure a consistent policy for determining the need for watertight doors to remain open during navigation, developed by a correspondence group (DE 53/9 and Corr.1), was of the view that there were still some matters needing further consideration and agreed to finalize the Guidance at this session, taking into account the Guidance for the determination by Administrations of the impact of open watertight doors on ship survivability developed by the SLF Sub-Committee, which, as agreed by SLF 52 and DE 53, should be incorporated into the Guidance developed by this Sub-Committee.

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

- .1 DE 54/4/Rev.1 (Secretariat), containing a consolidated text of the draft MSC circular on Guidance on open watertight doors on passenger ships, as set out in the annex to the document, including the guidance developed by both the DE and SLF Sub-Committees and a draft MSC circular cover note for the consolidated Guidance, prepared by the Secretariat in order to facilitate the discussions at this session;
- .2 DE 54/4/1 (CLIA), suggesting that the floatability assessment requirements contained in the draft Guidance should be implemented on a situation-by-situation basis as a result of the risk assessment, rather than requiring this comprehensive assessment regardless of the condition in which the ship is sailing and subject to little or no risk of collision or grounding; and
- .3 DE 54/4/2 (United States), suggesting modifications to section 2.2 of annex 2 of the draft Guidance to increase the transverse extent of damage from 0.1B to 0.2B (B/5).

4.3 Having considered the above documents, the Sub-Committee noted that, while many delegations supported the draft Guidance in principle, views were divided on whether the floatability assessment described in annex 2 (DE 54/4/Rev.1, annex) should be carried out on a case-by-case basis, following a risk assessment, or whether it should always be required. Furthermore, the question of the applicability of the formerly deterministic and now probabilistic damage stability provisions in SOLAS chapter II-1 to new and existing ships was raised.

Establishment of a working group

4.4 Recalling its relevant decision at DE 53, the Sub-Committee established the Working Group on Guidance on Open Watertight Doors on Passenger Ships and instructed it, taking into account the above comments, to finalize the draft MSC circular on Guidance on open watertight doors on passenger ships, on the basis of document DE 54/4/Rev.1, taking into account documents DE 54/4/1 and DE 54/4/2.

Report of the working group

4.5 Having received the report of the working group (DE 54/WP.1), the Sub-Committee approved it in general and agreed to the draft MSC circular on Guidance for watertight doors on passenger ships which may be opened during navigation, as set out in annex 3, for submission to MSC 88 for approval. In this connection, MSC 88 was invited, when approving the draft Guidance, to consider the application date and take action as appropriate.

4.6 In this context, the delegation of the United Kingdom, supported by the delegation of Norway, stated that, in recognition of the diminished risk of navigating in areas of reduced hazard from collision or grounding, a concession might be given to full compliance with the damage stability regulations in the form of the "floatability assessment", as defined in the Guidance, in order to permit category A watertight doors to remain open, provided the condition under which this facility was granted was well defined and might be consistently applied by all Administrations. They pointed out that under the conditions of diminished risk, the draft Guidance required no demonstration of any ability to float, and that indeed the ship might have no reserve stability yet might be granted permission to have category A doors remain open on the basis of a risk assessment, when submissions to Administrations of risk

assessments were likely to vary in detail, assumptions and source of data. In their view, the Guidance was intended to provide, primarily, for a consistent method of evaluation; but since it had not been defined what constituted an acceptable level of risk it was likely that there would be no consistency in the application of this concession and, furthermore, since the Guidance allowed for category A watertight doors to also remain open when navigating in hazardous conditions when satisfying only the "floatability assessment", this would allow for such doors to remain open during any and all conditions at all times throughout the life of the ship. The delegations felt that this represented a permanent degradation of the subdivision of the ship and a permanent non-compliance with the damage stability regulations and could not be considered satisfactory. They proposed that no watertight doors of any Category should be allowed to remain open when the ship was operating in hazardous conditions; under such conditions doors should be allowed to be opened to allow passage and closed immediately afterwards; and that, in conditions of reduced hazard, Category A doors may be allowed to remain open following satisfaction of the "floatability assessment".

4.7 Having agreed to the above Guidance, the Sub-Committee also endorsed the group's recommendations to invite the SLF Sub-Committee to:

- .1 consider the issue of permitting watertight doors to remain open in relation to the floatability assessment, in particular possible amendments to SOLAS chapter II-1 subdivision and damage stability regulations, with a view to harmonizing damage stability regulations and the floatability assessment; and
- .2 consider modifications to the Guidelines for damage control plans and information to the master (MSC.1/Circ.1245), as consequential changes,

and requested the Secretariat to inform the SLF Sub-Committee accordingly.

Completion of the work on the output

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

5 INTERPRETATION ON APPLICATION OF SOLAS, MARPOL AND LOAD LINE REQUIREMENTS FOR MAJOR CONVERSIONS OF OIL TANKERS

5.1 The Sub-Committee recalled that DE 53, having considered a draft MSC-MEPC circular on Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers/ore carriers (DE 53/WP.5), agreed that further work in the matter was necessary and invited Member Governments and international organizations to submit relevant comments and proposals to this session.

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

- .1 DE 54/5 (Secretariat), presenting a consolidated and editorially improved draft text of the circular, based on the text contained in document DE 53/WP.5, prepared with a view to facilitating the discussions;
- .2 DE 54/5/1 (Austria *et al.*), proposing various modifications to the cover note and to the interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers/ore carriers;

- .3 DE 54/5/2 (IACS), proposing alternative text for annex 3 of the draft interpretations, concerning the application of Load Line requirements to conversions; and
- .4 DE 54/5/3 (IACS), proposing substantive modifications to the section of the interpretations relating to the application of SOLAS chapter XII requirements to conversions.

5.3 Having considered the above documents, the Sub-Committee agreed to base its discussions on the draft text of the Unified interpretations contained in the annex to document DE 54/5, taking into account the modifications proposed in documents DE 54/5/1, DE 54/5/2 and DE 54/5/3, and took the following decisions:

- .1 with regard to the covering MSC circular, agreed to the inclusion of the following additional sentence at the end of paragraph 1, as proposed in document DE 54/5/1:

"For interpretations on requirements not specified in unified interpretations approved by the Organization, the Administration concerned should be consulted.";
- .2 with regard to the interpretations to SOLAS, as contained in annex 1 of the draft Unified interpretations:
 - .1 agreed to delete the square brackets retained by DE 53 around the word "six" in paragraphs 1.2.3 and 1.3.1;
 - .2 with regard to the two square-bracketed sentences in paragraphs 2.1 and 2.2, agreed to delete the first alternative in both cases and keep the following sentence:

"However, dedicated sea water ballast tanks should have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.";
 - .3 agreed that the alternative text for section 4 proposed in document DE 54/5/1 should be further considered by the drafting group;
 - .4 agreed, in principle, to the alternative text for paragraphs 5.1 and 5.2.1 proposed in document DE 54/5/1, subject to editorial improvements by the drafting group;
 - .5 agreed, in principle, to the alternative text for paragraph 8.2 proposed in the annex to document DE 54/5/1, subject to editorial improvements by the drafting group, which should take into account the decision of MSC 76 that the fitting of free-fall lifeboats on existing bulk carriers was not cost effective and should therefore not be required;
 - .6 agreed to change the word "extent" to "level" in the second line of section 9;

- .7 agreed to insert a new section concerning interpretations to regulation XII/2 after existing section 9, as proposed in document DE 54/5/3;
- .8 instructed the drafting group to combine the alternative texts for section 10 proposed in documents DE 54/5/1 and DE 54/5/3; and
- .9 instructed the drafting group to combine the proposals for changes to sections 11 to 24 in document DE 54/5/1 and document DE 54/5/3;
- .3 with regard to the interpretations to MARPOL, as contained in annex 2 to the draft Unified interpretations, agreed to the changes proposed in document DE 54/5/1; and
- .4 with regard to the interpretations to the Load Line Convention, as contained in annex 3 of the draft Unified interpretations, agreed in principle to the changes proposed in document DE 54/5/1, but instructed the drafting group to redraft the section in a more practical way, taking into account elements of the relevant proposal in document DE 54/5/2.

5.4 The Sub-Committee agreed that, in order to clarify that the interpretations would not apply to already agreed conversions, an application date should be inserted in the covering draft MSC circular and instructed the drafting group accordingly.

Establishment of a drafting group

5.5 The Sub-Committee established the Drafting Group on Interpretations for Major Conversions of Oil Tankers and instructed it, taking into account the comments and decisions made in plenary, to finalize the draft MSC-MEPC circular on Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers/ore carriers, on the basis of document DE 54/5, taking into account documents DE 54/5/1, DE 54/5/2 and DE 54/5/3.

Report of the drafting group

5.6 Having received the report of the drafting group (DE 54/WP.4), the Sub-Committee, approved it in general and, having agreed to the following further modifications to the Unified interpretations:

- .1 inclusion of a reference to the date on which the conversion occurred in paragraph 2 of the covering MSC circular;
- .2 re-phrasing of paragraph 8.2 of appendix 1 to make clear that it is not intended that this interpretation is applied retroactively;
- .3 any reference to "ore carriers" should be removed since ore carriers are included in the definition of bulk carrier; and
- .4 paragraph 9 of appendix 1 concerning navigation bridge visibility should be referred to NAV 57 for comments, so that any changes that may be proposed by the NAV Sub-Committee could be included before final approval by MEPC 62,

requested the Secretariat to act accordingly and consequently agreed to the draft MSC-MEPC circular on Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers, as amended, set out in annex 4, for submission to MSC 89 for approval, subject to the concurrent decision by MEPC 62.

5.7 The delegation of Norway reserved its position with regard to section 8 of appendix 1 of the Unified interpretation.

Completion of the work on this output

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

6 APPLICATION OF AMENDMENTS TO SOLAS CHAPTER III AND THE LSA CODE

6.1 The Sub-Committee recalled that DE 53, having considered the issue, was of the view that a more in-depth discussion on the clarification of the scope of the application of amendments to SOLAS chapter III and supporting Codes and Recommendations in general was necessary and, noting that the same problems should be solved for a number of other amendments to SOLAS and related Codes, invited the Committee to decide which sub-committee should consider the issue further in a holistic manner. In order to resolve the matter for already adopted amendments to SOLAS chapter III and the LSA Code, DE 53 requested the Secretariat to update the list contained in document DE 53/19/2, in cooperation with IACS, and submit it to this session.

6.2 The Sub-Committee noted that MSC 87, having noted the view of DE 53, had instructed the FSI Sub-Committee to consider the issue of the scope of application of amendments to SOLAS and related Codes and Guidelines from a holistic point of view.

6.3 The Sub-Committee also noted that FSI 18, when considering the matter, had agreed that the scope of application should be clearly specified for the implementation of any amendments to IMO instruments and referred the issue to a working group for detailed consideration in a holistic manner. Having considered the report of the group (FSI 18/WP.2), FSI 18 had agreed that:

- .1 it was of utmost importance that the scope of any proposed amendments to the ship's life-saving appliances and their arrangement be clearly specified in terms of ship's type, date of construction or any other parameter;
- .2 the word "equipment" should be carefully used as it could be either movable equipment or "built-in" equipment and, therefore, form part of the ship's structure; and
- .3 with regard to individual life-saving appliances, any replacement should be subject to a compelling and demonstrated need and recommended that any group in charge of drafting amendments should also be tasked to prepare a note clearly specifying the scope of the amendments,

and had also agreed to continue the work on this topic intersessionally in a correspondence group, for further consideration at FSI 19.

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

- .1 DE 54/6 (Secretariat), containing proposals regarding the scope of application of amendments to SOLAS chapter III and the LSA Code adopted at MSC 81, MSC 82 and MSC 85 (annex 1) and draft amendments to the LSA Code concerning the scope of application of amendments to the Code (annex 2); and
- .2 DE 54/6/1 (United Kingdom), proposing to clarify the scope of application of the amendments to SOLAS regulation III/7.2 adopted by resolution MSC.201(81) and their application to high-speed craft by amending regulation III/7.2 and the 2000 HSC Code accordingly, and suggesting that working and correspondence groups preparing amendments should be instructed to consider the application of amendments, i.e. which ship types and from which year of built as a standard matter.

6.5 In considering the above documents, the Sub-Committee had a lengthy debate in which both documents were supported in principle. Nevertheless, it was also agreed that further clarifications of all the issues involved were needed, in particular concerning replacement/substitution of LSA; provisions of accessories for oversized lifejackets; carriage of infant lifejackets on all passenger ships; application of amendments to the LSA Code to new and existing ships; alignment of amendments to the LSA Code with amendments to the Revised recommendation on testing of LSA; and practical problems with using the date of installation of LSA on board ships.

6.6 With regard to the proposal by the United Kingdom (DE 54/6/1) that in future all working and correspondence groups should be given a standard term of reference to consider the application of amendments, e.g., to which ships (date of construction) amendments would apply, the Sub-Committee noted that the United Kingdom had submitted a relevant proposal for consideration at MSC 88.

6.7 In view of the ongoing work of the FSI Sub-Committee on the matter, the Sub-Committee agreed that the two documents and the comments made in plenary should be referred to FSI 19 for further consideration and requested the Secretariat to take action accordingly.

Completion of the work on the output

6.8 The Sub-Committee agreed that its work on this issue had been concluded and invited the Committee to note that the output had been completed.

7 PERFORMANCE STANDARDS FOR RECOVERY SYSTEMS FOR ALL TYPES OF SHIPS

7.1 The Sub-Committee recalled that DE 53, having noted that the LSA Working Group at that session, due to time constraints, was unable to consider the new draft SOLAS regulation III/17-1 (Recovery arrangements for rescuing persons) and the associated draft Performance standard for recovery systems, as prepared by the Correspondence Group (DE 53/6), agreed to consider the matter further at this session and invited Member Governments and international organizations to submit relevant proposals.

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

- .1 DE 54/7 (Bahamas *et al.*), proposing to develop alternative guidance regarding recovery plans and procedures in support of the ISM Code in the form of an MSC circular, drawing attention to the need for a Safety Management System (SMS) required under the ISM Code to include plans and procedures for rescue and recovery;
- .2 DE 54/7/1 (Australia and Germany), providing a revised text for the draft Performance standard for recovery systems, as prepared by the correspondence group for DE 53 (DE 53/6, annex 2), which would be applicable to all ships; and
- .3 DE 54/7/2 (Iceland), supporting, in principle, the draft Performance standard for recovery systems as proposed in document DE 54/7/1 and proposing a number of modifications.

7.3 The Sub-Committee recalled the instructions of MSC 81, in particular, that the Sub-Committee should develop performance standards for recovery systems for all types of ships, with a view to preparing mandatory requirements for implementation by 1 July 2012 for all types of new and existing ships.

7.4 With regard to the above submissions to the session, the Sub-Committee noted that there were two basic proposals for consideration:

- .1 the new draft SOLAS regulation III/17-1 (Recovery arrangements for rescuing persons) (DE 53/6, annex 1) together with the draft Performance standard for recovery systems (DE 54/7/1 and DE 54/7/3); and
- .2 the alternative guidance regarding recovery plans and procedures in support of the ISM Code in the form of a draft MSC circular (DE 54/7).

7.5 In considering the above proposals, the Sub-Committee noted that views were essentially evenly divided on how best to proceed in light of the submission made to the session. While a number of delegations were supporting the development of a performance standard for recovery systems, as proposed by Australia and Germany, other delegations were supporting the alternative guidance proposed by the Bahamas *et al.*

7.6 Delegations in favour of developing a mandatory performance standard expressed, *inter alia*, the following views:

- .1 the instructions of the Committee foresaw the development of a mandatory performance standard for dedicated recovery equipment;
- .2 the performance standard should be flexible so it could be uniformly applied to all SOLAS ships;
- .3 many areas of the world do not have search and rescue services or they are simply not equipped to deal with large scale rescue operations;
- .4 the draft performance standard should permit the use of existing equipment, provided that it can be demonstrated that such non-dedicated equipment can safely comply with the performance criteria; and

- .5 since SOLAS ships are required to aid ships in distress, seafarers should have the appropriate equipment to safely support recovery operations, which enhances the Master's ability to act in such situations.

7.7 Delegations in favour of providing alternative guidance in the form of an MSC circular expressed, *inter alia*, the following views:

- .1 a performance standard for recovery systems is unrealistic, impractical and too restrictive, taking into account that commercial ships are not designed to recover large numbers of people at sea;
- .2 mandating the carriage of dedicated recovery equipment may actually increase the risks of a rescue at sea, bearing in mind that survival craft may have to come alongside a large vessel in rough seas in order that such dedicated equipment can be used;
- .3 large ships with high freeboards (e.g., car carriers, etc.) would have difficulties when attempting to recover a person from the water or recover people from survival craft;
- .4 such recovery equipment would rarely, if ever, be used during the lifetime of the ship and, therefore, the underpinning operational knowledge would be low; and
- .5 having mandatory performance standards would pressure Masters and seafarers to take action in dangerous conditions.

7.8 Having considered the above views, the Sub-Committee agreed that a performance standard based on functional requirements should be prepared, as instructed by MSC 81, which would not require the carriage of dedicated recovery equipment, but would allow sufficient flexibility with regard to the actual equipment used for recovery operations, bearing in mind that the recovery system must be tested to demonstrate its effectiveness. In addition, the Sub-Committee agreed that, for the time being, draft SOLAS regulation III/17-1 would be maintained as drafted by MSC 81.

7.9 Member Governments and international organizations were invited to submit concrete proposals in line with the above decision to DE 55 with a view towards finalization of the output to meet the Committee's 2012 deadline.

Extension of target completion year

7.10 The Sub-Committee invited the Committee to extend the target completion year by one year to 2011.

8 SAFETY PROVISIONS APPLICABLE TO TENDERS OPERATING FROM PASSENGER SHIPS

8.1 The Sub-Committee recalled that DE 53, having considered consolidated draft Guidelines for passenger ship tenders and a list of issues for further consideration (DE 53/WP.3), invited Member Governments and international organizations to submit relevant comments and proposals to this session and requested the Secretariat to forward the report of the group to all cooperating sub-committees (i.e. FP, COMSAR, NAV, SLF and STW) for their consideration and comments, so that such comments could be taken into account in the finalization of the draft Guidelines.

8.2 The Sub-Committee considered document DE 54/8 (Secretariat), reporting on the outcomes of COMSAR 14, FP 54 and NAV 56 with regard to this agenda item, and noted in particular that:

- .1 COMSAR 14 had considered document COMSAR 14/11 (United States), together with the views of several delegations expressed in plenary, and, having considered the recommendations of the SAR Working Group (COMSAR 14/WP.4, section 8), endorsed the group's view that there was no need for a requirement for fitting an EPIRB and an AIS to tenders operating from passenger ships;
- .2 FP 54 noted the outcome of DE 53 and, bearing in mind that the item would be included in the agenda for FP 55, agreed to invite Member Governments and international organizations to submit comments and proposals to FP 55, taking into account the outcome of DE 54; and
- .3 NAV 56 reviewed sections 7 (Navigation equipment), 9 (Additional equipment), 10 (Preparation) and 11 (Log-book and record keeping) of the draft Guidelines for passenger ship tenders (DE 53/WP.3, annex 1), which it considered to be of relevance to its work, and agreed to modifications as set out in the document.

8.3 Having also noted that, due to the meeting schedule, the FP, SLF and STW Sub-Committees had not yet considered the draft Guidelines, the Sub-Committee decided to postpone further consideration of the draft Guidelines to DE 55, when the contributions of SLF 53 and STW 42 would be available.

9 GUIDELINES FOR A VISIBLE ELEMENT TO GENERAL ALARM SYSTEMS ON PASSENGER SHIPS

9.1 The Sub-Committee recalled that DE 53, having briefly considered draft guidelines proposed by the United States (DE 53/20) and CLIA (DE 53/20/1), had invited the delegation of the United States to submit a consolidated draft of Guidelines for the design and installation of a visible element to the general emergency alarm on passenger ships, based on the above proposals, for consideration at DE 54.

9.2 In this connection, the Sub-Committee noted that FP 54, which had noted the outcome of DE 53 and the fact that DE 54 would take place before FP 55, had agreed to postpone consideration of this matter to FP 55 and had invited Member Governments and international organizations to submit relevant comments and proposals to that session, taking into account the outcome of DE 54.

9.3 The Sub-Committee considered document DE 54/9 (United States), providing draft Guidelines for the design and installation of a visible element to the general emergency alarm on passenger ships to accommodate passengers who are deaf or hard of hearing, which had been developed taking into account documents DE 53/20 (United States) and DE 53/20/1 (CLIA), and supported the proposed draft Guidelines in principle.

9.4 Notwithstanding the above, several delegations expressed concern regarding the language used in parts of the draft Guidelines which seemed to imply that some provisions went beyond existing requirements in IMO instruments.

9.5 In view of the above, the Sub-Committee decided to further consider the draft Guidelines at DE 55, with a view towards completion, so that they could then be referred to FP 55 for input and subsequent submission to MSC 90 for approval. Consequently, Member Governments and international organizations were invited to submit comments and proposals regarding the draft guidelines (DE 54/9, annex) to DE 55.

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

General

10.1 The Sub-Committee recalled that DE 53, noting information provided by the delegation of Japan that they were further reviewing their work on the matter based on the discussions at DE 52 and intended to submit a further developed proposal to this session, and also noting that no relevant documents had been submitted to DE 53, decided to postpone further consideration of the issue to this session for an in-depth discussion.

Draft framework of the requirements for life-saving appliances, including goals and functional requirements

10.2 The Sub-Committee had for its consideration two documents submitted by Japan: document DE 54/10, containing proposals for goals and functional requirements for life-saving appliances, following the goal-based concept, and discussing the overall structure of the draft new framework of requirements for life-saving appliances; and document DE 54/10/1, setting out the draft new framework of requirements for life-saving appliances, based on the goals and functional requirements proposed in document DE 54/10.

10.3 Having considered the above documents, the Sub-Committee fully supported the proposals by Japan. At the same time, a number of issues which need further clarification were raised, such as the place of the LSA Code and the Revised recommendation on testing of LSA in the new framework, the alignment of the revised chapter III with the provisions of chapter II-2, and the type approval of LSA.

10.4 Following discussion, the Sub-Committee agreed to establish a working group at DE 55 to further develop the draft framework and invited Member Governments and international organizations to submit relevant proposals to that session.

Launching devices serving a multiple number of liferafts on board passenger ships and starting point for the 10 minutes abandonment of cargo ships

10.5 The Sub-Committee considered document DE 54/10/2 (IACS), requesting the Sub-Committee to clarify the existing provisions relating to one launching appliance serving multiple liferafts carried on passenger ships and the starting time for the 10 minutes abandonment time with respect to cargo ships, and agreed that the issues raised by IACS merited careful consideration and should be taken into account when the draft text of the new SOLAS chapter III is being prepared.

11 AMENDMENTS TO RESOLUTION A.744(18)

General

11.1 The Sub-Committee recalled that DE 52, having agreed that the structure of the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers (ESP Guidelines) (resolution A.744(18)) should be aligned as closely as possible

with the IACS UR Z10 series in order to keep them simple and user friendly, had re-established the Correspondence Group on Amendments to resolution A.744(18) and, having approved its terms of reference, as set out in paragraph 3.7 of document DE 52/21, instructed the group to submit a report to DE 54.

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

- .1 DE 54/11 (Report of the correspondence group, submitted by Germany), containing the draft amendments to the ESP Guidelines and suggesting that the output on "Review of resolution A.744(18)" be maintained as a "continuous" item on the biennial agenda of the Sub-Committee;
- .2 DE 54/11/1 (Germany), containing further proposals for harmonization of Annex A of Part A of the ESP Guidelines with IACS UR Z10.2, for single-side skin bulk carriers; and
- .3 DE 54/11/2 (Germany), containing further proposals for harmonization of Annex A of Part B of the ESP Guidelines with IACS UR Z10.5, for double-side skin bulk carriers.

Report of the correspondence group

11.3 The Sub-Committee first considered the actions requested of it, as set out in paragraph 18 of the report of the correspondence group (DE 54/11), and, having noted the progress made by the group, took action as follows:

- .1 agreed to the draft amendments to Part A of Annex A of the ESP Guidelines (DE 54/11, annex 1);
- .2 agreed that paragraph 4.2.3.4 of Part A of Annex A (DE 54/11, annex 1) should be deleted;
- .3 endorsed the comments on the editorial review of Part B of Annex A (DE 54/11, paragraphs 14 and 15, and annex 5, paragraph 1);
- .4 endorsed the comments on a possible alignment of the complete Annex A with the IACS UR Z10 series (DE 54/11, annex 5, paragraph 2);
- .5 agreed to consider the establishment of a standing agenda item "Review of resolution A.744(18)" later, after all technical aspects of the agenda item have been considered (see paragraph 11.7);
- .6 agreed to the draft amendments to Part B of Annex A (DE 54/11, annex 4);
- .7 agreed to the draft amendments to Part A of Annex B (DE 54/11, annex 2);
- .8 concerning paragraph 2.1.4 of Part A of Annex B (DE 54/11, annex 2) and of Part B of Annex B (DE 54/11, annex 3), agreed that in both cases the text of the second option should be retained, i.e. "and any other tanks in double-hull spaces" and "and any other tanks within the cargo area which are forming hull structures", respectively; and
- .9 agreed to the draft amendments to Part B of Annex B (DE 54/11, annex 3).

Harmonization of the ESP Guidelines with IACS UR Z10

11.4 The Sub-Committee then considered the proposals by Germany for further amendments to Part A of Annex A (DE 54/11/1) and to Part B of Annex A (DE 54/11/2) and agreed to the proposed amendments.

Proposal for a new Assembly resolution superseding A.744(18)

11.5 The Sub-Committee agreed that, in view of the numerous and substantial amendments made to the ESP Guidelines over the years since their adoption in 1993, which have changed their structure completely, a new Assembly resolution should be prepared to supersede resolution A.744(18); and noted that, as such, SOLAS regulation XI-1/2 would need to be amended to refer to the new resolution.

11.6 Consequently, the Sub-Committee requested the Secretariat, in consultation with the Chairman, to prepare a covering draft Assembly resolution for the adoption of the revised ESP Guidelines and associated draft amendments to SOLAS regulation XI-1/2, for submission to DE 55 for consideration.

Future amendments to the ESP Guidelines

11.7 The Sub-Committee, recognizing that the ESP Guidelines will have to be amended, as has been the practice so far, on a regular basis in order to harmonize them with the relevant IACS survey requirements, agreed that the scope of the Sub-Committee's existing continuous output on "Consideration of IACS unified interpretations" should be extended to include amendments to the ESP Guidelines and, therefore, agreed that the Committee should be invited to rename the output as "Consideration of IACS unified interpretations and amendments to the ESP Guidelines", for consideration by MSC 89 when preparing its proposals for the new High-level Action Plan for the 2012-2013 biennium.

Establishment of a drafting group

11.8 Having considered the above matters, the Sub-Committee established a Drafting Group on Amendments to Resolution A.744(18) and instructed it, taking into account comments and decisions made in plenary, to:

- .1 finalize the draft amendments to Annex B, Part A, of the ESP Guidelines, on the basis of the report of the correspondence group (DE 54/11, annex 2);
- .2 finalize the draft amendments to Annex B, Part B, of the ESP Guidelines, on the basis of the report of the correspondence group (DE 54/11, annex 3);
- .3 finalize the draft amendments to Annex A, Part A, of the ESP Guidelines, on the basis of document DE 54/11/1 and taking into account the report of the correspondence group (DE 54/11, annexes 1 and 5) and the Standards and criteria for side structures of bulk carriers of single-side skin construction (resolution MSC.168(79));
- .4 finalize the draft amendments to Annex A, Part B, of the ESP Guidelines, on the basis of document DE 54/11/2 and taking into account the report of the correspondence group (DE 54/11, annexes 4 and 5); and
- .5 submit a written report to the plenary, advising the Sub-Committee of the main issues discussed.

11.9 With regard to paragraph 11.8.5 of the terms of reference of the group, the Sub-Committee agreed that due to the huge volume of the draft revised ESP Guidelines, their final text will be prepared by the Chairman of the group, in consultation with the Secretariat, after the session and attached to Sub-Committee's report.

Report of the drafting group

11.10 Having received the report of the drafting group (DE 54/WP.5), the Sub-Committee took action as outlined in the following paragraphs.

Proposed modifications to the draft ESP Guidelines

11.11 In considering further modifications to the proposed modifications to the draft ESP Guidelines prepared by the group, the Sub-Committee took the following decisions:

- .1 with regard to paragraph 1.4 of Annex A, Part A, agreed to include the following new second sentence in square brackets, for further consideration at DE 55:

"[On bulk carriers of 100,000 tons deadweight and above, the intermediate survey between 10 and 15 years of age should be performed by two surveyors.]";
- .2 agreed to delete the blank space for the signature of the surveyor from the report forms, having noted that all four parts of the draft ESP Guidelines specify that the surveyor should review the final thickness measurement reports and countersign the cover sheet only;
- .3 agreed to the amended definitions for "transverse section", which were prepared by the group enlisting the respective structural members;
- .4 agreed to retain Annex 14 in Annex A, Part A and Annex 12 in Annex A, Part B, regardless of the fact that this information is not included in IACS UR Z 10.2 and 10.5;
- .5 agreed to the title "TM7-BC(ii)" for the new thickness-measurement report form contained in Annex 8 of Annex A, Part A of the draft ESP Guidelines;
- .6 agreed to use the word "should" in the new Annex 15 to Annex A, Part A and to the inclusion of extended figure 4, as set out in the annex to document DE 54/WP.5);
- .7 agreed to add the survey requirements for ships complying with the requirements of SOLAS regulations XII/12 and XII/13 to the draft Guidelines; and
- .8 agreed not to include an Annex 13 on "Minimum requirements for overall and close-up survey and thickness measurements at intermediate surveys" in Annex A, Part B.

11.12 Consequently, the Sub-Committee agreed to the draft revised ESP Guidelines as set out in annex 5, requesting the Secretariat to make any editorial corrections to ensure consistency when preparing the final draft text (see paragraph 11.9).

Responsibilities of Administrations and surveyors

11.13 Finally, the Sub-Committee agreed to the recommendation of the group that, in the future, a general approach with regard to the areas of responsibility of the Administration and the surveyor should be developed.

Extension of target completion year

11.14 In view of the decisions made regarding the preparation of a new draft Assembly resolution (see paragraphs 11.5 and 11.6), the Sub-Committee invited the Committee to extend the target completion year for the output to 2011.

12 THERMAL PERFORMANCE OF IMMERSION SUITS

12.1 The Sub-Committee recalled that DE 53 had considered documents DE 53/11 and DE 53/INF.3 (Japan), proposing to introduce the "reference test device" (RTD) concept, already used for the evaluation of the performance of lifejackets, for the evaluation of the thermal performance of prototype insulated and non-insulated immersion suits, and had invited Japan to submit a revised proposal to introduce the RTD concept for the evaluation of the thermal performance of immersion suits and relevant draft amendments to the LSA Code and to the Revised recommendation on testing of life-saving appliances, for consideration at this session. Member Governments and international organizations were also invited to provide information on the specifications of RTDs for the evaluation of the thermal performance of insulated and non-insulated immersion suits.

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

- .1 DE 54/12 (Japan), providing a revised proposal for test specifications for thermal performance of immersion suits based on the reference test device (RTD) concept and proposing relevant draft amendments to the LSA Code and the Revised recommendation on testing of life-saving appliances, as set out in the annexes to the document;
- .2 DE 54/12/1 (Dominica), proposing the introduction of thermal manikin testing along with the RTD concept suggested by Japan for thermal performance requirements of thermal protective suits, including relevant modifications to the amendments to the LSA Code and the Revised recommendation on testing of life-saving appliances, set out in the annexes to document DE 54/12; and
- .3 DE 54/12/2 (Canada), commenting on the proposals in documents DE 54/12 and DE 54/12/1, in particular supporting the potential advantages of thermal manikin testing along with the RTD concept for thermal performance requirements of immersion suits and suggesting the establishment of a correspondence group to resolve the potentially differing views on how to best improve the consistency of immersion suit conformance to the needed minimum performance.

12.3 Having considered the above documents, the Sub-Committee, while concurring that the 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 and better defined thermal manikins were necessary in order to consider the proposed amendments to the LSA Code and the Revised recommendation on testing of life-saving appliances comprehensively.

12.4 Consequently, the Sub-Committee agreed to consider the matter further at DE 56 and invited Member Governments and international organizations to submit relevant comments and proposals to that session.

Extension of target completion year

12.5 The Sub-Committee invited the Committee to extend the target completion year to 2012.

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

13.1 The Sub-Committee recalled that DE 53, after an intensive discussion of the issues, had established a correspondence group to further develop the draft International Code of safety for ships operating in polar waters (Polar Code) and approved its terms of reference, as set out in paragraph 18.11 of document DE 53/26.

13.2 In this connection, the Sub-Committee noted that MEPC 60 and MSC 87, respectively, had referred the following documents to the Sub-Committee for consideration under this agenda item:

- .1 MEPC 60/21/1 (Norway), highlighting several aspects of an environmental chapter of a Polar Code, noting that by systematically analysing the MARPOL, AFS, BWM and other conventions, it could be possible to clearly identify what type of extra measures, if any, should be put in place in the polar regions as a consequence of their unique temperature, light and ice conditions (whereby this document was succeeded by documents DE 54/13/7 and DE 54/INF.5, see paragraph 13.6.7); and
- .2 MSC 87/INF.15 (IALA), reporting on the outcome of discussions of an internationally agreed system for providing the necessary aids to navigation in Arctic areas.

Proposed alternate approach

13.3 The Sub-Committee agreed to first consider the submission by Vanuatu (DE 54/13/4), which proposed an alternate approach to the development of requirements for polar shipping, based on amendments to SOLAS chapter IX, the STCW Convention and the ISM Code, obliterating the need for a separate Polar Code.

13.4 In considering the alternate approach proposed in document DE 54/13/4, various delegations expressed the view that such an approach lacked clarity and would make it very difficult to enforce the relevant requirements. They found that specific criteria were needed for ships operating in polar areas and that this could best be covered by a stand-alone instrument. The necessary flexibility of provisions for polar regions, which was quoted by Vanuatu as one of the reasons for their proposal, could be accomplished by introducing the goal-based concept in the development of a mandatory Polar Code.

13.5 Consequently, the Sub-Committee, having noted that there was very limited support for the proposal and wishing to provide an unambiguous, enforceable set of requirements for polar shipping, agreed to proceed with the development of a stand-alone mandatory Polar Code.

Consideration of submissions

13.6 Having considered the above matter, the Sub-Committee noted that the following other documents had been submitted to the session for consideration:

- .1 DE 54/13 (Secretariat), reporting on the outcome of the Conference of Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, which took place in Manila, the Philippines, from 21 to 25 June 2010, and adopted major amendments to the STCW Convention and the STCW Code, including new training guidance for personnel serving on board ships operating in polar waters (annex 1 of the document) and Conference Resolution 11 on Measures to ensure the competency of masters and officers of ships operating in polar waters (annex 2 of the document);
- .2 DE 54/13/1 and DE 54/INF.3 (Germany), proposing that the further work on the Code should utilize the goal-based standards (GBS) concept, including the development of goals and functional requirements, and presenting a generic framework for a Code based on GBS in document DE 54/INF.3;
- .3 DE 54/13/2 (New Zealand), providing specific information on shipping patterns, hydrographic charting and sea ice, search and rescue facilities and environmental conditions in the Antarctic area relevant to the development of the Code;
- .4 DE 54/13/3 (Report of the correspondence group), presenting a draft structure of the Code, prepared by the group, as basis for the further work on the draft Code and raising a number of issues that need further consideration by the Sub-Committee, including, but not limited to, operational limitations, risk analysis, hazard identification and grouping, societal differences between Arctic and Antarctic regions, training issues and assistance needed from other IMO bodies;
- .5 DE 54/13/5 (New Zealand), providing specific information on fishing vessel operations in the Antarctic area, in particular regarding recommendations of the Conservation of Antarctic Marine Living Resources (CCAMLR) on ice-strengthening standards and safety on board fishing vessels;
- .6 DE 54/13/6 (Finland), proposing that a reference to the Finnish-Swedish Ice Class Rules (FSICR) should be included in the draft Code and that any operational limitations related to structural requirements for ships in the Arctic area should be based on meteorological and ice conditions, and not on geographical boundaries;
- .7 DE 54/13/7 and DE 54/INF.5 (Norway), proposing a way forward on how to address the environmental aspects of the Code such as oil and LNS spills, transport of packaged dangerous goods and garbage, discharge of sewage, and air pollution and suggesting which sub-committees could be asked to give their input on these subjects; and presenting a DNV study on "Regular operational emissions and discharges from shipping in polar areas – particular environmental aspects" (DE 54/INF.5), containing a high-level assessment of whether operational discharges from ships pose a particular environmental threat in polar waters compared to other areas;

- .8 DE 54/13/8 (FOEI, IFAW, WWF, Pacific Environment, CSC), proposing a range of measures relevant to the MARPOL Convention to provide greater protection for the polar regions, in particular control measures regarding oil; LNS in bulk; sewage, sewage sludge and grey water; garbage; air emissions; black carbon; are discussed and proposed for inclusion;
- .9 DE 54/13/9 (FOEI *et al.*), proposing further measures related to other IMO instruments or to shipping more generally, which would provide essential protection for polar waters, in particular measures concerning indigenous communities, grey water, underwater noise, ballast water discharge, antifouling systems and ship strikes to marine mammals are discussed and proposed for inclusion;
- .10 DE 54/13/10 (Russian Federation), including proposals for further requirements and recommendations to be included in the draft Code, mainly concerning icebreaking capabilities, equivalency of polar classes and icebreaker escorting;
- .11 DE 54/13/11 (New Zealand), commenting on the study submitted by CLIA (DE 54/INF.2), outlining concerns regarding the general approach taken in the tiered risk assessment study, in particular that the analysis presented in the study is too narrowly focussed and therefore inadequate;
- .12 DE 54/INF.2 (CLIA), presenting an initial risk assessment study of SOLAS passenger ships operating in Antarctic waters, aimed at supporting passenger ship operators in the development of a tiered risk assessment approach that can be used in the development and application of a mandatory Polar Code and/or as a framework for voyage planning and risk assessment; and
- .13 DE 54/INF.8 (Secretariat), providing information on a symposium organized in conjunction with the 2010 World Maritime Day Parallel Event in October in Buenos Aires, Argentina, in particular regarding the discussions on the development of international regulations for navigation in polar regions, specifically the Antarctic.

13.7 Before having a general debate, the Sub-Committee considered the action requested of it in paragraph 16 of the report of the correspondence group (DE 54/13/3), and, noting the progress made by the group in the development of the draft Code, took action as follows:

- .1 endorsed the group's recommendation that input should be encouraged from the Antarctic Treaty Parties and other bodies having an interest in ship operations in the polar regions, through submissions and representation by Member States;
- .2 agreed that the question of addressing the societal differences between the Arctic and the Antarctic regions and how to address possible risks posed by Arctic shipping to vulnerable indigenous and other local communities in the Arctic was outside the remit of the Sub-Committee; and
- .3 endorsed the recommendation of the group that assistance from other sub-committees and the MEPC would be needed, however, the first draft should be developed by this Sub-Committee prior to seeking advice from the relevant IMO bodies.

13.8 Having considered the above actions, the Sub-Committee had a general debate during which the following views were expressed:

- .1 qualifications, training and experience of officers and crew on ships operating in polar regions was especially important and should be in line with the provisions of the STCW Convention;
- .2 the lack of cartographic information, in particular for the Antarctic, presented a serious problem;
- .3 some delegations supported the introduction of a ban on the carriage of heavy grade fuel oil, as already adopted by the Organization for the Antarctic, also for Arctic areas. However, other delegations did not support this view, citing freedom of navigation and the right of States to manage their natural resources;
- .4 provisions for requiring an Ice Certificate should be included in the Code (see also paragraph 13.15);
- .5 the introduction of equivalency tables for polar classes, taking into account the Finnish-Swedish Ice Class Rules and the ice class rules of various recognized organizations, should be included in the Code;
- .6 requirements for ice breaking capability and related minimum levels should be included in the Code;
- .7 operational limitations should be set for fixed geographical boundaries;
- .8 environmental factors should be particularly considered; and
- .9 as already agreed at DE 53, different requirements might be appropriate for Arctic and Antarctic areas.

13.9 The observer from FOEI expressed the view that reference should be made to indigenous peoples in the Polar Code because the subject was covered in the Arctic Council's authoritative Arctic Marine Shipping Assessment of 2009, and to illustrate the societal differences between Arctic and Antarctic regions. In addition, they pointed out that identifying impacts of shipping on human populations was a relatively common occurrence at IMO, and the observer contended that there was no compelling reason as to why reference could not be made to particularly susceptible populations in the Polar Code.

13.10 The observer from Pacific Environment believed that the impact of shipping on indigenous peoples was within the remit of the Organization and should be recognized in the mandatory Polar Code. They pointed out that indigenous peoples had inhabited coastal areas of the Arctic for millennia, depending on Arctic waters for food, health and sustenance and that these resources could be harmed by the impacts of shipping, and by the increase in shipping that was occurring in the Arctic. For these reasons, they respectfully urged support for recognition of this issue within the Polar Code.

Risk-based/goal-based approach

13.11 The utilization of a risk-based/goal-based approach, as suggested by Germany (DE 54/13/1), including the development of goals and functional requirements which would be accompanied by prescriptive provisions, was endorsed by the Sub-Committee. This would also give sufficient flexibility for alternative designs and arrangements, subject to the usual engineering analysis.

Establishment of a working group

13.12 To progress the work on this output, the Sub-Committee established a 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 54/13/3), taking into account documents DE 54/13, DE 54/13/1, DE 54/13/2, DE 54/13/5, DE 54/13/6, DE 54/13/7, DE 54/13/8, DE 54/13/9, DE 54/13/10 and DE 54/13/11, as well as the information provided in documents DE 54/INF.2, DE 54/INF.3, DE 54/INF.5, DE 54/INF.8 and MSC 87/INF.15; and
- .2 consider whether it is necessary to re-establish the correspondence group and, if so, prepare terms of reference for consideration by the Sub-Committee.

Report of the working group

13.13 Having received the report of the working group (DE 54/WP.3), the Sub-Committee approved it in general and took action as outlined in the following paragraphs.

Progress made in the development of the draft Polar Code

13.14 The Sub-Committee noted the progress made by the group to date on the development of the mandatory Code for ships operating in polar waters, recognizing that the work was at a preliminary stage and no agreement had yet been reached on the text for a draft Code. The Sub-Committee invited Member Governments and interested stakeholders to submit documents to DE 55 on the subject matter with a view to progress the work on the development of the Code.

Ice certificates

13.15 The Sub-Committee, having noted that the inclusion of an Ice Certificate in the Code was supported, but that more information on the issue was required before a definite decision could be taken on the subject, encouraged Member Governments and international organizations to provide further information on the Ice Certificate to DE 55.

13.16 The delegation of the Russian Federation requested to include in the Polar Code the issue of icebreaking capability as one of the basic functional requirements, since this proposal was not reflected in the report of the working group.

Environmental aspects of polar shipping

13.17 The Sub-Committee, having noted that the group had a preliminary exchange of views on the inclusion of an environmental chapter in the Code, encouraged Member Governments and international organizations to submit additional information on the subject to DE 55.

Training requirements for navigation in polar waters

13.18 The Sub-Committee invited MSC 89 to note that, after the Polar Code has been finalized by the Sub-Committee, training requirements for navigation in polar waters should be developed and that, since it would be beneficial to have a model course for navigation in polar waters, the development of such a course should be considered.

Further discussions in the group

13.19 Having been informed by the Chairman of the group that they had continued work after finalizing their report, the Sub-Committee agreed that a summary of those discussions should be submitted by the Chairman to DE 55.

Re-establishment of the correspondence group

13.20 The Sub-Committee agreed to re-establish the correspondence group under the coordination of Norway* with the following terms of reference:

- .1 on the basis of annex 1 to document DE 54/WP.3, to review the information in the hazard matrix, identify any gaps and provide additional information to address the gaps identified; and
- .2 to submit a report to DE 55.

14 PROTECTION AGAINST NOISE ON BOARD SHIPS

14.1 The Sub-Committee recalled that DE 53, following an intensive debate on this item, had agreed, as a first step, to revise the Code on Noise Levels on Board Ships (resolution A.468(XII)), bearing in mind that it should not be applied to existing ships and that differences in ship types and sizes should be taken into account, with a view to possibly making the provisions of the Code mandatory as a second step. Subsequently, the Sub-Committee invited Member Governments and international organizations to submit comments and proposals to this session with a view to commencing the substantive work.

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

- .1 DE 54/14 (Liberia, Marshall Islands, Vanuatu), raising practical concerns that they feel need to be addressed prior to development of mandatory noise standards; offering comments on document DE 53/10; and proposing amendments to the Code on noise levels on board ships, as set out in the annex to the document;
- .2 DE 54/14/1 and DE 54/14/1/Corr.1 (Japan), commenting on the issues raised under the agenda item at DE 53, in particular regarding the application of the Code and exemptions, and providing at annex proposals for revised noise level limits for inclusion in a revised Code;
- .3 DE 54/14/2 and DE 54/INF.7 (China), providing suggestions for a revision of the Code concerning noise level limits, ear protectors and noise measuring on board ships and providing (DE 54/INF.7) a method for cabin noise prediction, based on statistical energy analysis, carried out by China;

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- .4 DE 54/14/3 (CESA), supporting a review of the Code and the mandatory application of appropriate noise protection measures and describing technical concerns regarding the proposed area definition, related maximum noise levels and airborne sound insulation; and
- .5 DE 54/INF.4 (Denmark), providing a brief bibliography of scientific research documents to support a revision of the current SOLAS provisions on noise protection and to review the limits of the Code on noise exposure levels on board ships.

14.3 In considering the documents submitted, the Sub-Committee noted, *inter alia*, the following views:

- .1 the proposals made for the reduction of noise levels were not challenging enough and a much more comprehensive approach was necessary, reflecting the current technology;
- .2 crew accommodation should be particularly considered and should be situated away from the engine-room, and WHO noise levels for living quarters should be taken into account;
- .3 noise reducing/cancelling state-of-the-art headsets should be provided for crew in machinery spaces;
- .4 ship sizes/tonnages and types should be considered in the development of relevant requirements, with special regard for special purpose ships such as dynamically supported vessels;
- .5 vibration levels on ships should also be looked at;
- .6 any new requirements should apply to new ships only;
- .7 the application of the requirements to smaller and other non-SOLAS ships should be considered separately;
- .8 there should be no difference in recommended noise levels between continuously manned and not continuously manned machinery spaces; and
- .9 dispensations from certain requirements might be granted in special circumstances.

14.4 Following discussion, the Sub-Committee, having noted that all the documents submitted had received support, agreed that the noise levels under consideration needed further elaboration, and also invited Member Governments and international organizations to submit to DE 55 information concerning experience with active noise reducing systems to better evaluate the performance parameters of these systems.

14.5 The Sub-Committee briefly considered document DE 54/WP.6 (Secretariat), consolidating the amendments to the Code on Noise Levels on Board Ships proposed in documents DE 54/14, DE 54/14/1 and DE 54/14/3 and agreed to also add the noise level limits proposed in documents DE 53/10 and DE 54/14/2.

Correspondence group

14.6 To progress the work on this output, the Sub-Committee established a Correspondence Group on Protection Against Noise on Board Ships, under the coordination of Denmark* and instructed it, taking into account comments and decisions made at DE 54, to:

- .1 finalize the draft amendments to the Code on Noise Levels on Board Ships, taking into account documents DE 54/14, DE 54/14/1 and Corr.1, DE 54/14/2, DE 54/14/3, DE 54/INF.4, DE 54/INF.6, DE 54/INF.7, DE 53/10 and DE 54/WP.6;
- .2 consider how the Code could be made mandatory for new ships and provide relevant suggestions for the consideration of the Sub-Committee; and
- .3 submit a report to DE 55.

14.7 In view of the close proximity of DE 54 and DE 55, and having consulted with the Secretariat, the Sub-Committee agreed to relax the deadline for the submission of the report of the correspondence group to DE 55 to 14 January 2011.

Noise from commercial shipping and its adverse impacts on marine life

14.8 The Sub-Committee noted that MEPC 61, when considering its agenda item "Noise from commercial shipping and its adverse impacts on marine life" and the report of a correspondence group (MEPC 61/19), noted that the group, having conducted a thorough assessment of the existing design and operational modifications and possibilities potentially relevant in the reduction of incidental noise produced by large ships, had agreed that the propeller was the main source of ship-generated underwater noise. Also noting that issues such as "propulsion", "hull design", "onboard machinery" and "operational modifications" relate to ship design and equipment, MEPC 61 had referred these technical matters to DE 54 under this agenda item, for advice that would be reviewed by the correspondence group.

14.9 Due to the fact that delegations, because of the short notice (MEPC 61 took place two weeks before this session), could not consult with relevant experts, there were no comments on the issue. Therefore, the Sub-Committee agreed to consider the matter further at DE 55, so that any relevant comments could be forwarded to MEPC 62.

Extension of target completion year

14.10 The Sub-Committee invited the Committee to extend the target completion year of this output to 2011.

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15 AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING OF LIFE-SAVING APPLIANCES

15.1 The Sub-Committee recalled that DE 53 had considered document DE 53/13, where Japan had examined the amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70), as amended) adopted by resolutions MSC.200(80) and MSC.226(82) and provided a list of discussion points and subsequent proposals for preliminary draft amendments to the Revised Recommendation, and had requested the Secretariat to prepare a list of draft amendments derived from the proposals by Japan, taking into account the outcome of the discussions at DE 53, for consideration and final decision at this session.

Amendments to the Revised recommendation on testing of life-saving appliances

15.2 The Sub-Committee considered document DE 54/15 (Secretariat), containing a list of draft amendments to the Revised recommendation, prepared by the Secretariat as requested by DE 53, taking into account relevant proposals by Japan (DE 53/13) and decisions of DE 53 (DE 53/26, paragraph 13.3), and agreed to draft amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)), as set out in annex 6, for submission to MSC 89 with a view to adoption.

Problems with the reference test device (RTD) for lifejackets (resolution MSC.200(80))

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

- .1 DE 54/15/1 (United Kingdom), providing information on a number of problems that have arisen in connection with the application of the amendments to the Revised recommendation on testing of LSA, adopted by resolution MSC.200(80), in particular concerning the introduction of a reference test device (RTD) for lifejackets; and suggesting a review of those amendments;
- .2 DE 54/15/2 (China), identifying a number of problems with the specifications of the RTD for lifejackets; attaching relevant proposed amendments to the Revised recommendation on testing of LSA and proposing an amendment to paragraph 6.14.1.1, concerning the mass of an average person; and
- .3 DE 54/15/3 (ILAMA), also providing information on problems encountered with the new test requirements for lifejackets adopted by resolution MSC.200(80).

15.4 The Sub-Committee briefly considered and agreed in principle to the draft amendments to the Revised recommendation proposed by China in document DE 54/15/2.

15.5 The Sub-Committee noted the views of the delegation of Norway, which recalled that the Sub-Committee, following information that the results of tests on lifejackets in accordance with the Revised recommendation on testing of LSA varied, adopted amendments by resolution MSC.200(80) introducing a lifejacket reference test device. However, problems with the use of the RTD soon became apparent. Firstly, manufacturers did not have specific performance requirements which the product must meet as a minimum when tested and the lack of such specific requirements entailed great uncertainty for the industry. Secondly, the way tests were performed today added to uncertainty. Thirdly, the reference testing device could not be calibrated, which meant the test lifejacket was not well suited for the job it should do. The delegation advocated that the current test regime should be discontinued because it did not contribute to better products having better performances

and that the amendments adopted by resolution MSC.200(80) must be amended as soon as possible; either by reintroducing the original requirements or by using other test standards, such as EN ISO 12402, as an alternative. The delegation, stressing the urgency of the matter, requested that a working group be established at DE 55 and that Member States and NGOs should be urged to submit relevant documents to that session, so that the problems reported with the current test regime for lifejackets could be solved as soon as possible.

15.6 The Sub-Committee also noted the views of the delegation of the United States, pointing out, regarding the calibration of RTDs, that detailed instructions and forms for tracking and verifying buoyancy adjustments are included in the RTD specifications. They stressed that the adoption of significant new concepts and methods was often challenging, but that they were confident that problems could be overcome. The use of a lifejacket test method based on comparison to in-water performance of a standard reference lifejacket was a response to the discovery of a number of approved SOLAS lifejackets which clearly did not meet the intended SOLAS performance standard, considered to stem from inconsistencies in test methods between test houses and the inherent variability of human subject testing. The new RTD methodology was designed to normalize the effects of such variability, and thereby to improve the consistency and repeatability of lifejacket testing. In their view, the concept remained fundamentally sound, and the initial lessons learned could be applied to refine the methodology and overcome any problems that had been experienced. Although significant research and practical testing went into the development of the RTD to ensure that it accurately represented in-water performance commensurate with the requirements existing at the time, documents DE 54/15/1, DE 54/15/2 and DE 54/15/3 highlighted the need for consideration of refinements to the test method, and to the construction and calibration instructions, to ensure that the RTD provided repeatable results as intended.

15.7 In light of the above, the Sub-Committee agreed to invite the Committee to include an unplanned output on "Revision of testing requirements for lifejacket RTDs" in the biennial agenda and in the provisional agenda for DE 55, so that the matter could be given urgent attention, and invited Member Governments and international organizations to submit relevant proposals to that session. Consequently, the Sub-Committee agreed to the justification for the proposed new output, as set out in annex 7, for consideration by MSC 88.

Completion of the output

15.8 Notwithstanding the decision in paragraph 15.7, the Sub-Committee invited the Committee to note that work on this output had been completed.

16 TEST STANDARDS FOR TYPE APPROVAL OF ADD-ON EQUIPMENT

16.1 The Sub-Committee recalled that DE 53 had established a correspondence group to consider this matter (DE 53/26, paragraph 23.7.1) and instructed it to develop type approval standards for add-on pollution prevention equipment for the two approaches described in document DE 53/21/1, paragraphs 4 and 5, using the document as the basis, while incorporating attributes from document DE 53/21 and taking into consideration document DE 52/20/17.

16.2 The Sub-Committee had for its consideration the report of the correspondence group (DE 54/16), containing draft Guidelines and specifications for add-on equipment for upgrading oil filtering equipment, including performance and test specifications for type approval, and also identifying the following issues as needing further consideration by the Sub-Committee: application, application/limiting conditions, acceptance of approved equipment by other countries, test procedures for add-on equipment added as pre-treatment to existing equipment, and certificate of type approval.

16.3 In considering the correspondence group's report, the Sub-Committee noted the concern of an observer delegation that resolution MEPC.60(33)-compliant equipment that continues to operate correctly should be maintained and that the draft guidelines and specifications now before the Sub-Committee should not be construed as mandating installation of resolution MEPC.107(49) equipment through the back door.

Establishment of a working group

16.4 The Sub-Committee established a Working Group on Pollution Prevention and instructed it to finalize the draft Guidelines, on the basis of the report of the correspondence group (DE 54/16, annex), taking into account the issues raised by the group (DE 54/16, paragraphs 5 to 9), as well as comments and proposals made in plenary, and prepare a covering draft MEPC resolution.

Report of the working group

16.5 In considering the part of the report of the working group (DE 54/WP.2, paragraphs 4 to 19) dealing with the agenda item, the Sub-Committee approved the report in general and, in addressing action paragraph 43.1 of the working group's report, had a debate on the question put forward by the group concerning the pass/fail issue as set out in paragraph 4.2.2 of the draft Guidelines.

16.6 All delegations and observers who intervened in the discussion were of the view that paragraph 4.2.2 was superfluous since, as drafted, it entitled an Administration, including a port State's Administration, to question the validity of the assessment carried out by the flag State's Administration concerning add-on equipment installed on board ship. The Sub-Committee noted the views of these delegations that this was contrary to the general principle enshrined in all IMO instruments and, in the case of the draft Guidelines, was doubly wrong since their implementation was intended as voluntary. Having considered the above views, the Sub-Committee agreed to delete paragraph 4.2.2 in the draft Guidelines set out in annex 1 to document DE 54/WP.2.

16.7 Having resolved the above issue, the Sub-Committee:

- .1 agreed to the draft Guidelines and specifications for add-on equipment for upgrading resolution MEPC.60(33)-compliant oil filtering equipment and the associated draft MEPC resolution, set out in annex 8, for submission to MEPC 62 for adoption; and
- .2 in concurring with the view of the group that the draft Guidelines and specifications should not apply retroactively, agreed to inform the MEPC of its views on this matter, for consideration as appropriate.

16.8 In addition, having noted the outcome of the group concerning add-on equipment as pre-treatment to existing equipment, reported in paragraph 8 of its report, the Sub-Committee, following a short discussion, agreed that there was no need to develop a relevant new part to the draft Guidelines and specifications referred to in paragraph 16.7.1 above, as any pre-treatment equipment necessarily would have to comply with the current oil filtering equipment guidelines set out in resolution MEPC.107(49).

Completion of the work on this output

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

17 MEASURES TO PROMOTE INTEGRATED BILGE WATER TREATMENT SYSTEMS

17.1 The Sub-Committee recalled that DE 53 had noted that MEPC 59 had included a high-priority item on "Improvement of existing pollution prevention equipment" with two sub-items on "Development of test standards for type approval of add-on equipment" and "Promotion of integrated bilge water treatment systems", in the work programme of the Sub-Committee. Consequently, DE 53 established a correspondence group (DE 53/26, paragraph 23.7.2) to include integrated bilge water treatment systems (IBTS) (MEPC.1/Circ.642) as a key element in the development of the guidelines to assist shipowners and operators to prepare ship-specific oily waste management plans (see also agenda item 18).

17.2 The Sub-Committee considered document DE 54/17 (Japan), presenting the results of a study showing the effectiveness of IBTS following the guidance set out in MEPC.1/Circ.642 as the best solution for preventing pollution associated with bilge water and proposing relevant amendments to the 2008 Revised guidelines for systems for handling oily wastes in machinery spaces of ships incorporating guidance notes for IBTS (MEPC.1/Circ.642), including the introduction of a Document of Compliance and checklist for IBTS, and proposing the issuance of an MEPC circular to encourage Member Governments and international organizations to adopt IBTS for new ships, collect more information and report data on IBTS to the Organization.

17.3 In considering document DE 54/17, the Sub-Committee had a discussion in the course of which it noted, *inter alia*, the concerns expressed by some delegations, as follows:

- .1 a perceived lack of consistency between the provisions of MEPC.1/Circ.642 and regulation 12 of MARPOL Annex I;
- .2 the proposed Document of Compliance and checklist did not appear fit to meet the objectives set out in paragraph 9 of document DE 54/17 relating to the distinction between IBTS-compliant and non-compliant ships for the purposes of port State control procedures;
- .3 IBTS compliance, if implemented, could best be addressed through amendments to the Supplement of the IOPP Certificate; and
- .4 the proposed Document of Compliance would imply mandatory status for IBTS.

17.4 Following the discussion, the Sub-Committee decided to instruct the Working Group on Pollution Prevention, established under agenda item 16 (see paragraph 16.4), to finalize, if time permitted, the draft amendments to MEPC.1/Circ.642 contained in the annex to document DE 54/17, taking into account comments and proposals made in plenary, and prepare a covering draft MEPC circular, for consideration by the Sub-Committee.

Report of the working group

17.5 Having considered the part of the report of the working group related to this item (DE 54/WP.2, paragraphs 39 to 42), the Sub-Committee, noting that the group could not finalize the draft amendments to the 2008 Revised Guidelines due to time constraints, invited interested delegations to submit relevant proposals to DE 55, taking into account issues raised and discussions held in plenary and in the working group at this session, with a view to finalizing this item at DE 55.

18 GUIDELINES FOR A SHIPBOARD OIL WASTE POLLUTION PREVENTION PLAN

General

18.1 The Sub-Committee recalled that DE 53 had established a correspondence group (DE 53/26, paragraph 23.7.2) and instructed it, *inter alia*, to develop guidelines to assist ship owners and operators to prepare ship-specific oily waste management plans, based on document MEPC 59/20/2, including integrated bilge water treatment systems (IBTS) (MEPC.1/Circ.642) as a key element.

Report of the correspondence group

18.2 The Sub-Committee had for its consideration the report of the correspondence group (DE 54/18), containing draft Guidelines for a shipboard oily waste pollution prevention plan, as set out in the annex to the report, including references to IBTS, and pointing out that proposed section 10 regarding documentation and record keeping beyond that of the oil record book should be further considered by the Sub-Committee.

18.3 In considering the report of the correspondence group (DE 54/18), the Sub-Committee, whilst supporting the main thrust of the proposed draft Guidelines, noted the following concerns of those delegations and observers that intervened in the debate:

- .1 the provisions in the Guidelines should not go beyond the MARPOL requirements;
- .2 budgetary and funding provisions, as set out in section 7, were outside the scope of the Guidelines and should therefore be deleted;
- .3 it should be clarified whether the draft Guidelines were intended to apply to engine-room oily waste, or to the ship as a whole; and
- .4 manufacturers' responsibility in providing procedures for the correct functioning of equipment should be reflected.

Instructions to the working group

18.4 Having noted the above concerns, the Sub-Committee instructed the Working Group on Pollution Prevention established under agenda item 16 (see paragraph 16.4), to finalize the draft Guidelines for a shipboard oily waste pollution prevention plan, on the basis of the report of the correspondence group (DE 54/18, annex), taking into account comments and proposals made in plenary, and prepare a covering draft MEPC circular.

Report of the working group

18.5 Having considered the part of the report of the working group dealing with the agenda item (DE 54/WP.2, paragraphs 20 to 30), the Sub-Committee agreed to the draft MEPC circular on Guidelines for a ship board oily waste pollution prevention plan, set out in annex 9, for submission to MEPC 62 for approval.

Completion of the work on this output

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

19 MANUALLY OPERATED ALTERNATIVES IN THE EVENT OF POLLUTION PREVENTION EQUIPMENT MALFUNCTIONS

General

19.1 The Sub-Committee recalled that DE 53 had established a correspondence group (DE 53/26, paragraph 23.7.3) and instructed it, *inter alia*, to prepare draft amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers (resolution MEPC.108(49)), based on documents DE 53/23 and DE 53/23/2.

19.2 The Sub-Committee had for its consideration the report of the correspondence group (DE 54/19), containing draft amendments to the Revised guidelines, addressing manually operated alternatives in the event of pollution prevention equipment malfunctions, and providing, in annex 2, supplementary issues raised by one member of the group which, due to time constraints, had not been considered by the group.

19.3 In considering the report of the correspondence group (DE 54/19), the Sub-Committee noted the concern of an observer delegation that the status, i.e. mandatory or recommendatory, of resolution MEPC.108(49) should be clarified, as it would affect the scope of the proposed provision in draft paragraph 5.6*bis* for oil tankers to carry spare parts for the oil discharge monitoring and control system.

Instructions to the working group

19.4 Having noted the above concern, the Sub-Committee instructed the Working Group on Pollution Prevention, established under agenda item 16 (see paragraph 16.4), to finalize the draft amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers (resolution MEPC.108(49)), on the basis of the report of the correspondence group (DE 54/19, annex 1), taking into account the supplementary issues (DE 54/19, annex 2) and comments made in plenary, and prepare a covering draft MEPC resolution.

Report of the working group

19.5 In considering the part of the report of the working group related to this item (DE 54/WP.2, paragraphs 31 to 38), the Sub-Committee firstly addressed the question put forward by the group (paragraph 43.7 of its report) concerning new proposed paragraph 5.6*bis* in the draft amendments. In the view of a number of observer delegations, draft paragraph 5.6*bis*, as developed by the group, should not be accepted since it might be construed as imposing a mandatory carriage requirement for spare parts whose appropriate place should be in the Supplement to the IOPP Certificate; and that would necessitate an appropriate amendment to MARPOL Annex I. Given that the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers (resolution MEPC.108(49)) were of a recommendatory nature, the inclusion of a carriage requirement was not appropriate and might raise issues in the context of issuing the IOPP Certificate in a globally consistent manner and possible differing interpretation by port State control officers.

19.6 The Sub-Committee agreed to the summing-up by the Chairman to forward those concerns to MEPC 62, noting that the Sub-Committee had not been specifically tasked with deciding on the juridical status, mandatory or recommendatory, of resolution MEPC.108(49), and seeking the Committee's clear guidance regarding implementation of the draft amendments.

19.7 Having resolved this matter, the Sub-Committee agreed to the draft MEPC resolution on Amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers (resolution MEPC.108(49)), set out in annex 10, for submission to MEPC 62 for adoption.

Completion of the work on this output

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

20 WORK PROGRAMME AND PROVISIONAL AGENDA FOR DE 55

General

20.1 The Sub-Committee recalled that MSC 87 had approved the biennial agenda of the Sub-Committee as set out in the annex to document DE 54/2.

Draft biennial agenda and items on the Committee's post-biennial agenda

20.2 Taking into account the progress made during this session and the decisions of MSC 87 and MEPC 61, the Sub-Committee prepared the draft biennial agenda of the Sub-Committee and items on the Committee's post-biennial agenda under the purview of the Sub-Committee, and the provisional agenda for DE 55 (DE 54/WP.7), based on the biennial agenda approved by MSC 87 (DE 54/2, annex), as set out in annexes 11 and 12, respectively, for consideration by MSC 88 and action as appropriate.

Report on the status of planned outputs

20.3 The Sub-Committee prepared the report of the status of the planned outputs of the High-level Action Plan of the Organization and priorities for the 2010-2011 biennium relevant to the Sub-Committee (DE 54/WP.7, annex 4), as set out in annex 13, and invited the Committee to note the status.

Arrangements for the next session

20.4 The Sub-Committee agreed to establish at the next session working and drafting groups on subjects selected from the following:

- .1 Development of a new framework of requirements for life-saving appliances;
- .2 Development of a mandatory Code of ships operating in polar waters;
- .3 Protection against noise on board ships;
- .4 Supporting guidelines for cargo oil tank coating and corrosion protection;
- .5 Performance standards for recovery systems of all types of ships; and
- .6 Life-saving appliances,

whereby the Chairman, taking into account the submissions received on the respective subjects, would advise the Sub-Committee well in time before DE 55 on the final selection of such groups.

20.5 The Sub-Committee established correspondence groups on the following subjects, due to report to DE 55:

- .1 Development of a mandatory Code for ships operating in polar waters; and
- .2 Protection against noise on board ships,

and recalled that, at DE 53, it had established a correspondence group on supporting guidelines for cargo oil tank coating and corrosion protection, also to report to DE 55.

Date of next session

20.6 The Sub-Committee noted that its fifty-fifth session has been tentatively scheduled to take place from 21 to 25 March 2011.

Urgent matters to be considered by MSC 88

20.7 The Sub-Committee, while noting that MSC 87 had not agreed on any urgent matters emanating from this session to be reported to MSC 88, agreed, however, that the draft MSC circular on Guidance for watertight doors on passenger ships which may be opened during navigation (see paragraph 4.5), which was urgently needed, should be submitted to MSC 88 for consideration with a view to approval.

Urgent matters to be considered by MSC 89

20.8 The Sub-Committee also noted that, due to the close proximity between DE 55 and MSC 89, the Committee, in accordance with paragraph 4.9 of the Guidelines on the organization and method of work, will consider only urgent matters emanating from DE 55, with the remainder being considered by MSC 90. Consequently, the Sub-Committee agreed that the following urgent matters emanating from DE 55 should be considered by MSC 89:

- .1 Performance standards for recovery systems for all types of ships;
- .2 Supporting guidelines for cargo oil tank coating and corrosion protection; and
- .3 Amendments to resolution A.744(18).

21 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2011

21.1 In accordance with the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mrs. Anneliese Jost (Germany) as Chairman and Dr. Susumu Ota (Japan) as Vice-Chairman, both for 2011.

22 ANY OTHER BUSINESS

Counterfeit LSA products

22.1 The Sub-Committee recalled that DE 53, following consideration of document DE 53/3/2 (ILAMA), providing information on the growing problem of counterfeit LSA products, had agreed that awareness needed to be raised concerning this problem and to bring the matter to the attention of the Committee; and that MSC 87, noting the Sub-Committee's discussion, had invited Member Governments and international organizations to submit comments and proposals on the matter to this session, for further consideration.

22.2 The Sub-Committee considered document DE 54/22/Rev.1 (ILAMA), providing detailed information on the growing problem of counterfeit LSA products, including counterfeited hydrostatic release units, pyrotechnics, position indicating lights and water rations, supported by photographs in the annex to the document.

22.3 In considering the information submitted by ILAMA, the Sub-Committee concluded that it was very difficult to take any action on the matter other than raising awareness of the problem, which seemed to be worsening, among Administrations and ship operators.

22.4 Some delegations pointed out that the problem was twofold: firstly, there was an issue of intellectual property rights (i.e. counterfeit products) and, secondly, there was the issue of bad quality products; and were of the view that the first issue was outside the remit of the Organization, whereas the second may be the responsibility of Administrations through inspections and certification.

22.5 Following the discussion, the Sub-Committee agreed that awareness of these issues should be raised through either a circular or a resolution and instructed the Secretariat, in consultation with interested parties, to prepare relevant draft text for consideration at DE 55.

Testing of free-fall lifeboats

22.6 The Sub-Committee considered document DE 54/22/1 (IACS), bringing to the attention of the Sub-Committee an inconsistency between SOLAS regulations III/19.3.3.4 and III/20.11.2 concerning the testing of free-fall lifeboat release systems; suggesting that a clarification of the matter is necessary; and informing that the document had also been submitted to MSC 88 (MSC 88/7/2).

22.7 The Sub-Committee, acknowledging that recognized organizations needed clarity on how the relevant SOLAS regulations should be implemented, agreed with the view of the Chairman that this matter could only be resolved by means of SOLAS amendments, which would require a new output to be established.

Application of SOLAS regulation II-1/3-2 to ore carriers and combination carriers

22.8 The Sub-Committee considered document DE 54/22/2 (IACS), seeking clarification regarding a possibly unintended application of 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) (PSPC) to void wing spaces of ore carriers and combination carriers, noting IACS' intention to bring this issue to the attention of the Committee.

22.9 The Sub-Committee agreed to note the submission by IACS.

Operation and maintenance of accommodation ladders

22.10 The Sub-Committee noted information provided by the delegation of the United Kingdom concerning an investigation into a fatal accident carried out by the United Kingdom's Marine Accident Investigation Branch concerning the operation and maintenance of accommodation ladders, noting this Organization's current guidance as given in MSC.1/Circ.1331 on Guidelines for construction, installation, maintenance and inspection/survey of means of embarkation and disembarkation, and the current ISO standard 7364:1983 – Shipbuilding and marine structures – deck machinery – accommodation ladder winches (full report available on the MAIB website, report No 8/2010, published on 14 July 2010). In the accident, an able seaman from a United Kingdom

registered vessel drowned after the lower section of the accommodation ladder he was standing on broke free and fell into the water whilst the accommodation ladder was being rigged. The United Kingdom noted that since 1 January 2010 international regulation obliges the construction of hoist winches fitted to accommodation ladder systems to meet the requirements of the ISO standard, and for the maintenance of accommodation ladder systems to be in accordance with prescribed guidelines.

22.11 The delegation also stated that, following the accident, a recommendation had been made to the British Standards Institution aimed at improving the relevant international standard applicable to the hoist winches fitted to accommodation ladder systems by taking into account current technology, best practice, and the full scope of accommodation ladder operations; and requested all Member States to contact their national body responsible for the oversight of ISO standards to support their proposal. Furthermore, the delegation informed the Sub-Committee of its intention to submit to MSC 89 a proposal for a new unplanned output, likely to be allocated to this Sub-Committee as lead, to revise MSC.1/Circ.1331 to include the requirement for hoist winches to be tested following any maintenance, repair or modification work which might affect the safe working operation of accommodation ladders.

Expression of appreciation

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

- Mr. John Bainbridge (ITF) (on impending retirement);
- Mr. Javier Llorens (Secretariat) (on impending retirement);
- Mr. Miguel Palomares (Secretariat) (on impending retirement);
- Mr. Alexander Petrov (Secretariat) (on retirement);
- Capt. Raja Datuk Malik Saripulazan (Malaysia) (on return home); and
- Dr. Peter Swift (on impending retirement).

Expression of condolence

22.13 On being informed of the recent death of Mrs. Lindy Johnson (United States), who had attended IMO meetings for a long number of years and was known to many in the Organization for her tireless and enthusiastic work for the marine environment, the Sub-Committee requested the delegation of the United States to convey to Mrs. Johnson's family and colleagues its deep condolences and sympathy.

23 REPORT TO THE COMMITTEES

23.1 The Maritime Safety Committee, at its eighty-eighth session, is invited to:

- .1 approve the draft MSC circular on Guidance for watertight doors on passenger ships which may be opened during navigation, and decide on its date of application (paragraph 4.5 and annex 3); and
- .2 note the decision of the Sub-Committee to relax, in view of the close proximity of DE 54 and DE 55, the deadline for the submission of the report of the correspondence group on protection against noise on board ships to DE 55 to 14 January 2011 (paragraph 14.7);

- .3 note that the Sub-Committee indentified problems with the testing requirements for lifejackets as contained in the Revised recommendation on testing of life-saving appliances, in particular concerning the recent introduction of a reference test device (RTD), and has requested the inclusion of a new unplanned output on "Revision of testing requirements for lifejacket RTDs" in the biennial agenda and in the provisional agenda for DE 55 (paragraph 15.7);
- .4 approve the proposed revisions to the Sub-Committee's biennial agenda and items on the Committee's post-biennial agenda under the purview of the Sub-Committee (paragraph 20.2 and annex 11);
- .5 approve the provisional agenda for DE 55 (paragraph 20.2 and annex 12);
- .6 note the report of the status of the planned outputs of the High-level Action Plan of the Organization and priorities for the 2010-2011 biennium relevant to the Sub-Committee (paragraph 20.3 and annex 13); and
- .7 agree on the urgent matters emanating from DE 55 to be reported to MSC 89 (paragraph 20.8).

23.2 The Maritime Safety Committee, at its eighty-ninth session, is invited to:

- .1 approve the draft MSC circular on Interpretation of SOLAS regulation III/15.1 (paragraph 3.2 and annex 1);
- .2 approve the draft MSC circular on Interpretation of SOLAS regulation II-1/29 (paragraph 3.3 and annex 2);
- .3 approve the draft MSC circular on Guidance for watertight doors on passenger ships which may be opened during navigation, and decide on the date of application of the Guidance (paragraph 4.5 and annex 3);
- .4 concur with the decision of the Sub-Committee to refer paragraph 9 of appendix 1, concerning navigation bridge visibility, of the draft MSC-MEPC circular on Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers to NAV 57 for comments, so that any changes that may be proposed by the NAV Sub-Committee could be included before final approval of the draft circular by MEPC 62 (paragraph 5.6.4);
- .5 approve, subject to comments from NAV 57 and the concurrent decision by MEPC 62, the draft MSC-MEPC circular on Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers (paragraph 5.6 and annex 4);
- .6 endorse the decision of the Sub-Committee to refer to FSI 19 the outcome of its considerations under agenda item 6 (Application of amendments to SOLAS chapter III and the LSA Code), in view of MSC 87's instruction to the FSI Sub-Committee to consider the issue of the scope of application of amendments to SOLAS and related Codes and Guidelines from a holistic point of view (paragraph 6.7);

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- .7 note that the Sub-Committee will continue its consideration of performance standards for recovery systems at DE 55, with a view to finalization (paragraph 7.9);
- .8 note that the Sub-Committee decided to postpone further consideration of the draft Guidelines for passenger ship tenders to DE 55, when the contributions of other cooperating sub-committees will be available (paragraph 8.3);
- .9 endorse the decision of the Sub-Committee to prepare a new draft Assembly resolution, superseding resolution A.744(18) on Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers (ESP Guidelines), and associated draft amendments to SOLAS regulation XI-1/2 (paragraph 11.5);
- .10 concur with the recommendation of the Sub-Committee to rename the output "Consideration of IACS unified interpretations" as "Consideration of IACS unified interpretations and amendments to the ESP Guidelines when preparing the proposals for the new High-level Action Plan for the 2012-2013 biennium (paragraph 11.7);
- .11 agree in principle to the draft revised ESP Guidelines and note that the draft Assembly resolution for their adoption by A 27 and associated SOLAS amendments will be prepared at DE 55 (paragraph 11.12 and annex 5);
- .12 note the progress made in the development of a mandatory Polar Code, in particular that the Sub-Committee:
- .1 agreed that the question of addressing the societal differences between the Arctic and the Antarctic regions and how to address possible risks posed by Arctic shipping to vulnerable indigenous and other local communities in the Arctic was outside its remit (paragraph 13.7.2);
 - .2 endorsed the utilization of a risk-based/goal-based approach, including the development of goals and functional requirements which would be accompanied by prescriptive provisions (paragraph 13.11); and
 - .3 was of the view that after the Polar Code has been finalized, training requirements for navigation in polar waters and an associated model course should be developed (paragraph 13.18);
- .13 adopt the draft MSC resolution on Amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)) (paragraph 15.2 and annex 6);
- .14 note that the Sub-Committee agreed that awareness should be raised with regard to counterfeit life-saving appliances and decided to consider the matter further at DE 55 (paragraph 22.5); and
- .15 approve the report in general.

23.3 The Marine Environment Protection Committee, at its sixty-second session, is invited to:

- .1 approve, subject to the concurrent decision by MSC 89 and any comments from NAV 57, the draft MSC-MEPC circular on Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull tankers to double-hull tankers or bulk carriers (paragraph 5.6 and annex 4);
- .2 note the decision of the Sub-Committee to consider the issue of noise from commercial shipping and its adverse impacts on marine life at DE 55 (paragraph 14.9);
- .3 adopt the draft MEPC resolution on Guidelines and specifications for add-on equipment for upgrading resolution MEPC.60(33)-compliant oil filtering equipment (paragraph 16.7.1 and annex 8);
- .4 consider the Sub-Committee's view that the above Guidelines and specifications should not apply retroactively and decide as appropriate (paragraph 16.7.2);
- .5 note that the Sub-Committee decided to further consider the issue of promotion of integrated bilge water treatment systems (IBTS) at DE 55 (paragraph 17.5);
- .6 approve the draft MEPC circular on Guidelines for a ship board oily waste pollution prevention plan (paragraph 18.5 and annex 9);
- .7 consider the concerns of the Sub-Committee regarding the juridical status, i.e., mandatory or recommendatory, of resolution MEPC.108(49) on Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers, and provide guidance, as appropriate (paragraph 19.6); and
- .8 adopt the draft MEPC resolution on Amendments to the Revised guidelines and specifications for oil discharge monitoring and control systems for oil tankers (resolution MEPC.108(49)) (paragraph 19.7 and annex 10).

ANNEX 1

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS REGULATION III/15.1

STOWAGE OF MARINE EVACUATION SYSTEMS

1 The Maritime Safety Committee, at its [eighty-ninth session (...)], with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation III/15.1 concerning the stowage of marine evacuation systems, and following a recommendation made by the Sub-Committee on Ship Design and Equipment at its fifty-fourth session, approved the following unified interpretation:

SOLAS regulation III/15.1 requires that the ship's side shall not have any openings between the embarkation station of the marine evacuation station and the sea level in the lightest seagoing condition. This means no openings, be they permanent openings, recessed promenades or temporary openings such as shell doors, windows or ports, should be allowed in this particular area.

On passenger ships, windows and side scuttles of the non-opening type should be allowed in this area if complying with SOLAS regulation II-2/9.4.1.3.3. On cargo ships, the windows and side scuttles in the area in way of a marine evacuation system, if installed, should only be of the non-opening type.

2 Member Governments are invited to use the above interpretation from [date of approval] when applying the relevant provisions of SOLAS regulation III/15.1 and to bring it to the attention of all parties concerned.

ANNEX 2

DRAFT MSC CIRCULAR

UNIFIED INTERPRETATION OF SOLAS REGULATION II-1/29

1 The Maritime Safety Committee, at its [eighty-ninth session (...)], with a view to ensuring a uniform approach towards the application of the provisions of SOLAS regulation II-1/29 and, following a recommendation made by the Sub-Committee on Ship Design and Equipment at its fifty-fourth session, approved the annexed unified interpretation concerning mechanical, hydraulic and electrical independency and failure detection and response of steering control systems.

2 Member Governments are invited to use the annexed interpretation from [date of approval] when applying the relevant provisions of SOLAS regulation II-1/29 and to bring them to the attention of all parties concerned.

ANNEX

MECHANICAL, HYDRAULIC AND ELECTRICAL INDEPENDENCY AND FAILURE DETECTION AND RESPONSE OF STEERING CONTROL SYSTEMS

1 Scope

The interpretation applies to steering gear control systems, as defined in SOLAS regulation II-1/3.1, for the main and auxiliary steering gear, operable from the navigation bridge, for which SOLAS stipulates two steering gear control systems independent of each other (SOLAS chapter II-1, regulations 29.6.1, 29.7.2, 29.7.3, 29.15 and 29.16).

SOLAS chapter II-1, regulation 29.6.1, reads:

"Where the main steering gear comprises two or more identical power units, an auxiliary steering gear need not be fitted, provided that:

- .1 in a passenger ship, the main steering gear is capable of operating the rudder as required by paragraph 3.2 while any one of the power units is out of operation;*
- .2 in a cargo ship, the main steering gear is capable of operating the rudder as required by paragraph 3.2 while operating with all power units; and*
- .3 the main steering gear is so arranged that after a single failure in its piping system or in one of the power units the defect can be isolated so that steering capability can be maintained or speedily regained."*

SOLAS chapter II-1, regulations 29.7.2 and 7.3, read:

"7 Steering gear control shall be provided:

- .2 where the main steering gear is arranged in accordance with paragraph 6, by two independent control systems, both operable from the navigation bridge. This does not require duplication of the steering wheel or steering lever. Where the control system consists of a hydraulic telemotor, a second independent system need not be fitted, except in a tanker, chemical tanker or gas carrier of 10,000 gross tonnage and upwards; and*
- .3 for the auxiliary steering gear, in the steering gear compartment and, if power-operated, it shall also be operable from the navigation bridge and shall be independent of the control system for the main steering gear."*

SOLAS chapter II-1, regulations 29.15 and 16, read:

"15 In every tanker, chemical tanker or gas carrier of 10,000 gross tonnage and upwards and in every other ship of 70,000 gross tonnage and upwards, the main steering gear shall comprise two or more identical power units complying with the provisions of paragraph 6.

16 Every tanker, chemical tanker or gas carrier of 10,000 gross tonnage and upwards shall, subject to paragraph 17, comply with the following:

- .1 the main steering gear shall be so arranged that in the event of loss of steering capability due to a single failure in any part of one of the power actuating systems of the main steering gear, excluding the tiller, quadrant or components serving the same purpose, or seizure of the rudder actuators, steering capability shall be regained in not more than 45 s after the loss of one power actuating system;
- .2 the main steering gear shall comprise either:
 - .2.1 two independent and separate power actuating systems, each capable of meeting the requirements of paragraph 3.2; or
 - .2.2 at least two identical power actuating systems which, acting simultaneously in normal operation, shall be capable of meeting the requirements of paragraph 3.2. Where necessary to comply with this requirement, interconnection of hydraulic power actuating systems shall be provided. Loss of hydraulic fluid from one system shall be capable of being detected and the defective system automatically isolated so that the other actuating system or systems shall remain fully operational;
- .3 steering gears other than of the hydraulic type shall achieve equivalent standards."

The following requirements of:

- SOLAS chapter II-1, regulations 3.1, 3.3, 3.13 and 29; and
- IEC Publication 60092-204 – Electric and electro-hydraulic steering gear (1987)

have been considered, as far as containing requirements for the independency of the control systems.

2 Basic requirements

2.1 Two independent steering gear control systems should be provided and should be so arranged that a mechanical or electrical failure in one of them will not render the other one inoperative.

2.2 The term "steering gear control system" as defined in SOLAS chapter II-1, part A, regulation 3.1 should be understood as "steering control system" covering "the equipment required to control the steering gear power actuating system".

3 Separation of control systems and components

3.1 General

Wires, terminals and the components for duplicated steering gear control systems installed in units, control boxes, switchboards or bridge consoles should be separated as far as practicable. Where physical separation is not practicable, separation may be achieved by means of a fire retardant plate.

3.2 Steering wheel or steering lever

All electric components of the steering gear control systems should be duplicated. This does not require duplication of the steering wheel or steering lever.

3.3 Steering mode selector switch

If a joint steering mode selector switch (uniaxial switch) is employed for both steering gear control systems, the connections for the circuits of the control systems should be divided accordingly and separated from each other by an isolating plate or by air gap.

3.4 Follow-up amplifier

In the case of double follow-up control (see appendix, example 2), the amplifiers should be designed and fed so as to be electrically and mechanically separated. In the case of non-follow-up control and follow-up control, it should be ensured that the follow-up amplifiers are protected selectively (see appendix, example 3).

3.5 Additional control systems

Control circuits for additional control systems, e.g., steering lever or autopilot should be designed for all-pole disconnection (see appendix, examples 1, 2 and 3).

3.6 Feed-back units and limit switches

The feed-back units and limit switches, if any, for the steering gear control systems should be separated electrically and mechanically connected to the rudder stock or actuator separately.

3.7 Hydraulic control components

3.7.1 Hydraulic system components in the power actuating or hydraulic servo systems controlling the power systems of the steering gear (e.g., solenoid valves, magnetic valves) should be considered as part of the steering gear control system and should be duplicated and separated.

3.7.2 Hydraulic system components in the steering gear control system that are part of a power unit may be regarded as being duplicated and separated when there are two or more separate power units provided and the piping to each power unit can be isolated.

4 Failure detection and response of control systems

4.1 Failure detection

4.1.1 The most probable failures that may cause reduced or erroneous system performance should be detected, and should consider at least the following:

- .1 power supply failure;
- .2 Loop failures in closed loop systems, both command and feedback loops (normally short circuit, broken connections and earth faults);
- .3 If programmable electronic systems are used:
 - .1 data communication errors; and
 - .2 computer hardware and software failures; and
- .4 hydraulic locking considering order given by steering wheel or lever.

4.1.2 All failures detected should initiate an audible and visual alarm on the navigation bridge. Hydraulic locking should always be warned individually unless system design makes manual action unnecessary.

Note: "Hydraulic locking" includes all situations where two hydraulic systems (usually identical) oppose each other in such a way that it may lead to loss of steering. It can either be caused by pressure in the two hydraulic systems working against each other or by hydraulic "by-pass" meaning that the systems puncture each other and cause pressure drop on both sides or make it impossible to build up pressure.

4.1.3 Alternatively to 4.1.1.2 and 4.1.1.3, depending on the rudder characteristic, critical deviations between rudder order and response should be indicated visually and audibly as steering failure alarm on the navigating bridge.

4.1.4 The following parameters should be monitored:

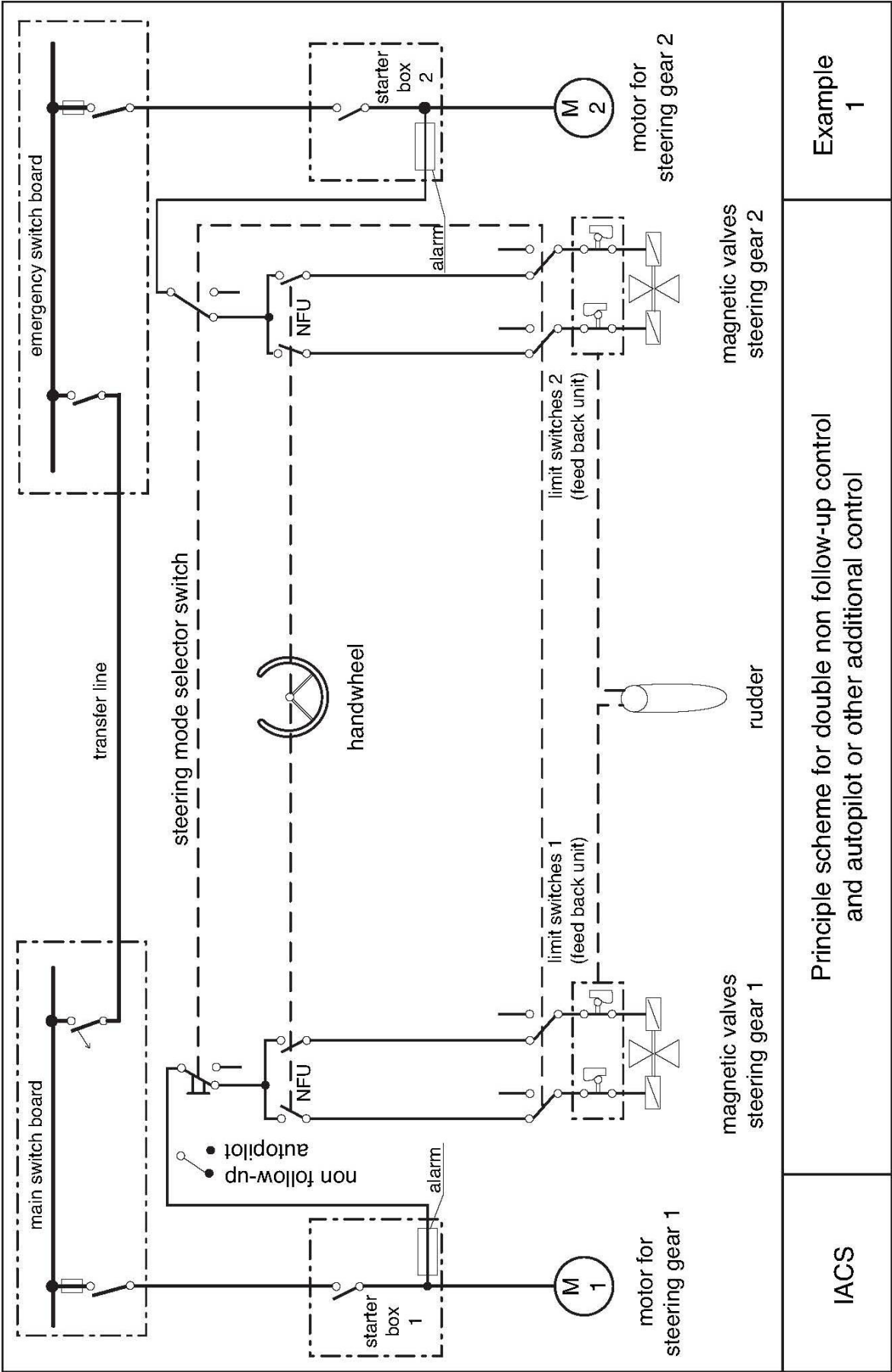
- .1 Direction: Actual rudder position follows the set value.
- .2 Delay: Rudder's actual position reaches set position within acceptable time limits.
- .3 Accuracy: The end actual position should correspond to the set value within the design offset tolerances.

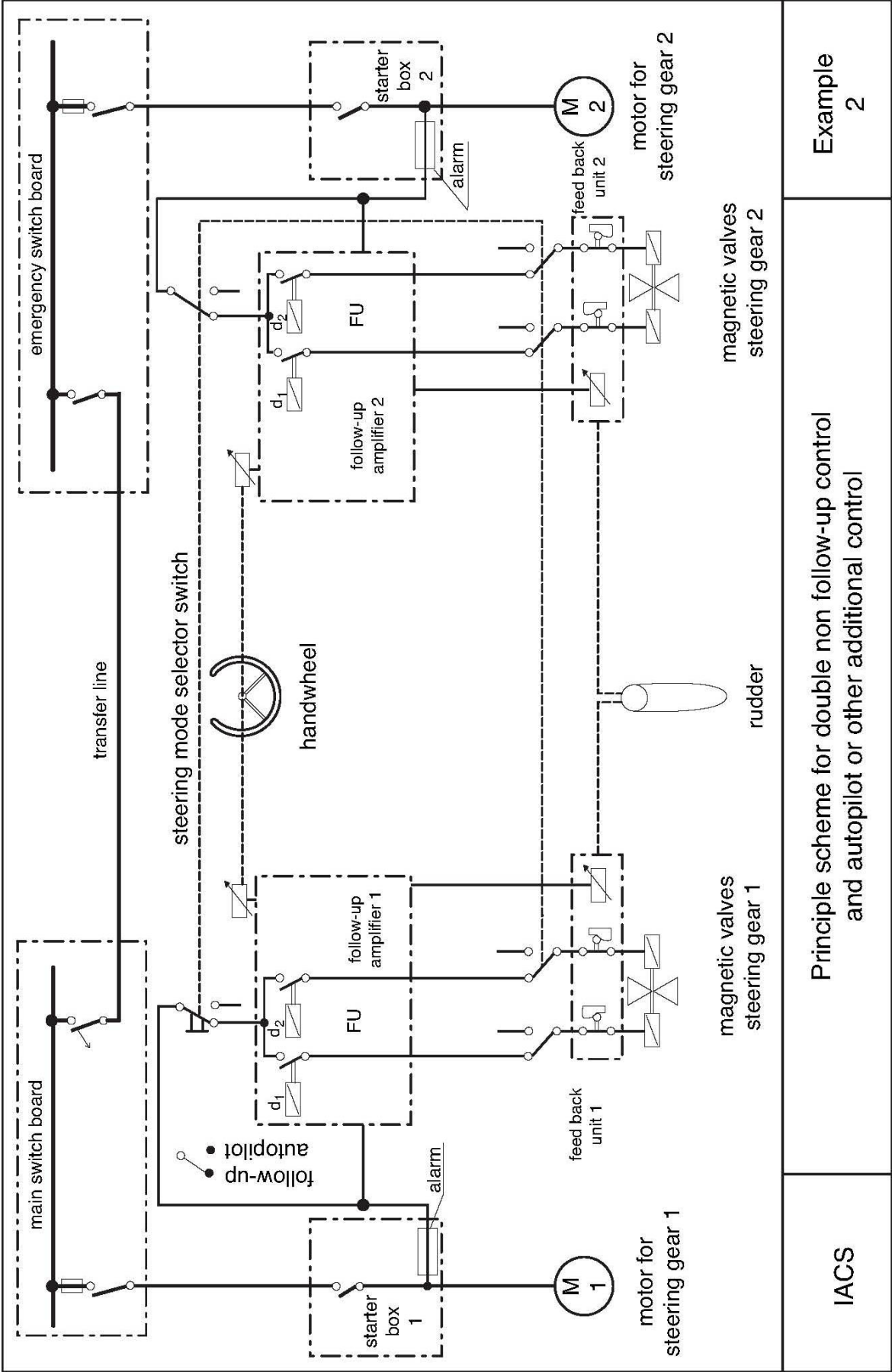
4.2 System response upon failure

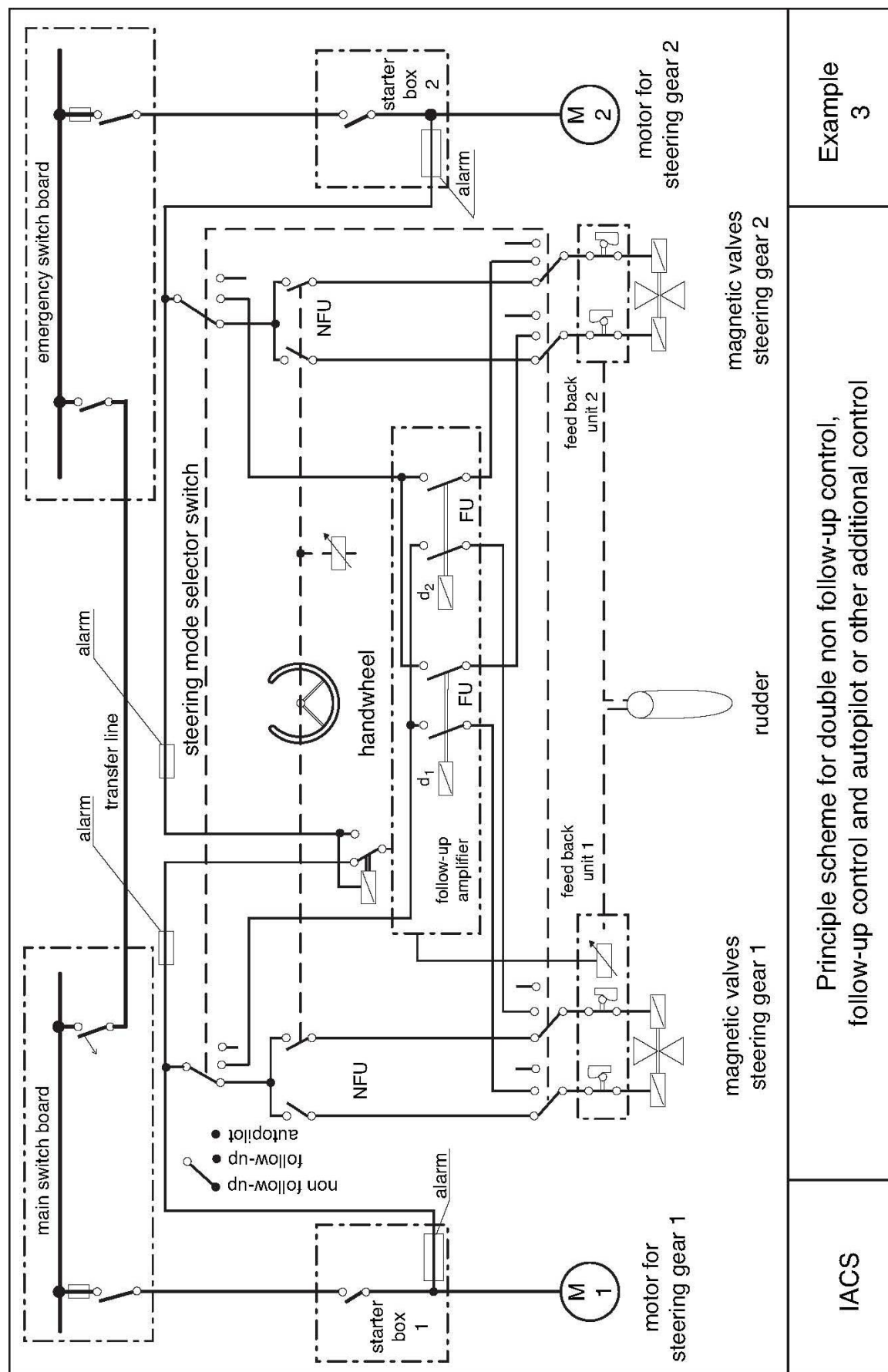
The most probable failures, e.g., loss of power or loop failure, should result in the least critical of any new possible conditions.

Appendix

Reference should be made to the following examples 1, 2 and 3, which can be regarded as basic design.







ANNEX 3

DRAFT MSC CIRCULAR

GUIDANCE FOR WATERTIGHT DOORS ON PASSENGER SHIPS WHICH MAY BE OPENED DURING NAVIGATION

1 The Maritime Safety Committee, at its [eighty-eighth session (...)], with a view to assisting Administrations in considering watertight doors on passenger ships, when determining if a watertight door may remain open during navigation under SOLAS regulation II-1/22 (paragraph 4) (previous SOLAS regulation II-1/15, paragraph 9.3), approved the Guidance for watertight doors on passenger ships which may be opened during navigation, as set out in the annex, prepared by the Sub-Committee on Stability and Load Lines and on Fishing Vessels Safety at its fifty-second session and the Sub-Committee on Ship Design and Equipment at its fifty-fourth session.

2 The Guidance contains the following appendices:

- .1 Procedure for the determination of the impact of open watertight doors on passenger ship survivability (floatability assessment) (appendix 1);
- .2 Technical standards for watertight doors on passenger ships (appendix 2);
and
- .3 Flowchart on Guidance for permitting watertight doors on passenger ships to remain open during navigation (appendix 3).

3 Member Governments are invited to apply the annexed Guidance from [...] and bring it to the attention of recognized organizations, ship designers, shipbuilders, manufacturers, companies, shipowners, operators and any other parties concerned.

ANNEX

GUIDANCE FOR WATERTIGHT DOORS ON PASSENGER SHIPS WHICH MAY BE OPENED DURING NAVIGATION

1 Preamble

1.1 Watertight subdivision is vital to ship stability and survivability to protect life, property and the marine environment in cases of hull damage after collision or grounding. The number of openings in watertight bulkheads on passenger ships is to be kept to a minimum in accordance with SOLAS regulation II-1/13.1 (previous SOLAS regulation II-1/15.1).

1.2 In order to maintain watertight subdivision, while allowing for the safe and effective operation of the ship, all watertight doors are to be kept closed during navigation, except in certain limited circumstances. SOLAS regulation II-1/22.3 (previous SOLAS regulation II-1/15.9.2), allows a watertight door to be temporarily opened to permit the passage of passengers or crew, or when work in the immediate vicinity of the door necessitates it being opened. In this case, the door must be immediately closed when transit through the door is complete or the work is finished. Additionally, SOLAS regulation II-1/22.4 (previous SOLAS regulation II-1/15.9.3) permits certain watertight doors to remain open during navigation but only if considered absolutely necessary to the safe and effective operation of the ship's machinery or to permit passengers normally unrestricted access throughout the passenger area. This determination is made by the Administration after careful consideration of the impact on ship operations and survivability.

1.3 SOLAS chapter II-1 regulations, referred to in this Guidance, means SOLAS chapter II-1 regulations amended by resolution MSC.216(82) (entered into force on 1 January 2009); and previous SOLAS chapter II-1 regulations means regulations amended by resolution MSC.13(57) (entered into force on 1 February 1992) and by other amendments afterwards.

2 Introduction

This Guidance is intended to assist Administrations in carefully considering the impact of open watertight doors on ship operations and survivability when determining if a watertight door may remain open during navigation for the safe and effective operation of the ship's machinery or to permit passengers normally unrestricted access throughout the passenger area. Guidance is also provided on when watertight doors may be opened or should remain closed.

3 The importance of watertight doors

3.1 Failure to recognize the importance of watertight doors can have great impact on the watertight integrity of the ship and have catastrophic consequences. When structural damage occurs to a ship, especially during collision or grounding, there is potential risk for bulkheads and decks to be deformed, thus rendering watertight doors not able to be closed. The risk of progressive flooding following such deformation of the ship's structure may increase if watertight doors are either left open or unable to be closed.

3.2 Another potential risk to ship survivability is when large amounts of water flood a ship, especially after extensive structural damage. The rate of water ingress, which depends on the size of the damaged opening and the water pressure, can quickly flood a compartment. It is therefore essential that a ship has sufficient survivability in case of

damage, keeping in mind that when adjacent watertight doors are open, several compartments may be flooded as watertight doors have up to 60 seconds to close per SOLAS regulation II-1/13.5.1 (previous SOLAS regulation II-1/15.6.1).

4 Operation of watertight doors

Power-operated watertight doors are designed to be remotely closed in a short period of time with a force the magnitude of which is sufficient to overcome not only the weight of the door but also water flowing through its opening, both while a ship is listing 15° in either direction. The operation of watertight doors involves possible dangers to persons passing through a closing door and injury or loss of life is likely to occur to anyone trapped in the door's path. The audible alarm that sounds for a few seconds before the door starts moving, and continues sounding while the door is in motion, is intended to reduce the human element risk.

5 SOLAS regulation and technical standards for watertight doors

5.1 SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15) provides the technical standards for watertight doors in passenger ships constructed on or after 1 February 1992. The basis of this regulation is that all watertight doors shall be kept closed during navigation according to SOLAS regulation II-1/22.1 (previous SOLAS regulation II-1/15.9.1), except as follows:

- .1 watertight doors may be opened during navigation to permit the passage of passengers or crew, or when work in the immediate vicinity of the door necessitates it being opened. The door must be immediately closed when transit through the door is complete or when the task which necessitated it being open is finished; and
- .2 certain watertight doors may be permitted to remain open during navigation only if considered absolutely necessary according to SOLAS regulation II-1/22.4 (previous SOLAS regulation II-1/15.9.3); that is, being open is determined essential to the safe and effective operation of the ship's machinery or to permit passengers normally unrestricted access throughout the passenger area. Such determination shall be made by the Administration only after careful consideration of the impact on ship operations and survivability. A watertight door permitted to remain open shall be clearly indicated in the ship's stability information and shall always be ready to be immediately closed.

5.2 For passenger ships constructed before 1 February 1992, watertight doors that do not comply with SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations II-1/15.6.1 to 15.6.4) shall be closed before the voyage commences and shall be kept closed during navigation. In other words, such doors shall never be permitted to be opened during a voyage. Administrations may use the watertight door checklist in appendix 2 to assess pre-1992 ships for potential compliance with SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations 15.6.1 to 15.6.4), which also includes the requirements in paragraph 7 of SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15).

6 Categories of watertight doors

In order to assist Administrations in determining to what extent watertight doors may remain open during navigation, watertight doors may be categorized into one of four different types of doors:

.1 Category A doors:

A watertight door that fulfils the technical requirements in SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations II-1/15.6.1 to 15.6.4), which also includes the requirements in paragraph 7 of SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15), and has been permitted to remain open during navigation by the Administration according to SOLAS regulation II-1/22.4 (previous SOLAS regulation II-1/15.9.3).

.2 Category B doors:

A watertight door that fulfils the technical requirements in SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations II-1/15.6.1 to 15.6.4), which also includes the requirements in paragraph 7 of SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15), and may be opened during navigation when work in the immediate vicinity of the door necessitates it being opened, according to SOLAS regulation II-1/22.3 (previous SOLAS regulation II-1/15.9.2). The door must be immediately closed when the task which necessitated it being open is finished.

.3 Category C doors:

A watertight door that fulfils the technical requirements in SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations II-1/15.6.1 to 15.6.4), which also includes the requirements in paragraph 7 of SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15), and may be opened during navigation to permit the passage of passengers or crew, according to SOLAS regulation II-1/22.3 (previous SOLAS regulation II-1/15.9.2). The door must be immediately closed when transit through the door is complete.

.4 Category D doors:

.1 A watertight door that does not comply with SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations II-1/15.6.1 to 15.6.4), which also includes the requirements in paragraph 7 of SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15), shall be closed before the voyage commences and shall be kept closed during navigation according to SOLAS regulation II-1/22.1 (previous SOLAS regulation II-1/15.6.5 (refer to paragraph 5.2)).

.2 Additionally, watertight doors fitted in watertight bulkheads dividing cargo between deck spaces in accordance with SOLAS regulation II-1/13.9.1 (previous SOLAS regulation II-1/15.10.1), shall be closed before the voyage commences and shall be closed during navigation according to SOLAS regulation II-1/22.6 (previous SOLAS regulation II-1/15.10.2). Such a watertight door is not eligible for upgrade to another category.

7 Permission for category A watertight doors to remain open

7.1 When applying to the Administration for permission for a watertight door to be qualified as a category A watertight door, the Company, as defined in SOLAS regulation IX/1.2, should conduct a risk assessment and consider the ship's survivability as a primary issue. The scope of the risk assessment should be balanced against operational needs.

7.2 The Administration, when permitting watertight doors to remain open, should take into account the outcome of the risk assessment conducted by the Company, which includes the procedure for the determination of the impact of open watertight doors on passenger ship survivability, set out in appendix 1 (hereinafter "floatability assessment").

7.3 The Administration may continue to permit those watertight doors (refer to paragraph 6.1), which have been permitted to remain open during navigation prior to this Guidance becoming effective, to remain open during navigation. However, this does not restrict an Administration from reconsidering whether any category A watertight doors should remain open when operating under the conditions described in paragraph 9.

7.4 The necessity for a watertight door to remain open during navigation should be demonstrated by the Company. The Company should satisfy the Administration with relevant information, such as operational needs, number of passages through the watertight door per time unit, alternative passageways around the watertight door and results from the risk assessment. The Company should also submit a copy of the relevant sections of their safety management procedures relating to the operation of watertight doors during navigation, as well as related information such as restrictions or limitations on when watertight doors may remain open.

7.5 Before permitting a watertight door to remain open during navigation, the Administration should evaluate the information described in 7.1 and 7.4 and verify that:

- .1 the watertight door meets the technical requirements of SOLAS regulations II-1/13.5.1 to 13.5.3 and 13.6 (previous SOLAS regulations II-1/15.6.1 to 15.6.4), which also includes the requirements in paragraph 7 of SOLAS regulation II-1/13 (previous SOLAS regulation II-1/15);
- .2 the floatability assessment (appendix 1) has been taken into account; and
- .3 the proposed category A watertight door meets the criteria specified in SOLAS regulation II-1/22.4 (previous SOLAS regulation II-1/15.9.3).

7.6 The flowchart in appendix 3 and the checklist for the technical standards of the watertight doors in appendix 2 may be used as guidance in the evaluation.

7.7 It is also important for an Administration to envisage the conditions under which adjacent watertight doors of category B or C may be opened during navigation for certain limited periods of time as permitted by SOLAS regulation II-1/22.3 (previous SOLAS regulation II-1/15.9.2), with a view towards preserving watertight subdivision and enhancing survivability. Additional factors, such as the area in which the ship is operating, should also be assessed to consider any additional risks or potentially hazardous situations (see list in paragraph 9 for consideration of such risks).

7.8 All category A doors shall be clearly indicated in the ship's stability information and shall always be ready to be immediately closed. Instructions regarding these watertight doors should be incorporated in the ship's safety management system and included in the ship's operational limitations in accordance with SOLAS chapter V requirements.

7.9 A watertight door should not be permitted to remain open during navigation in potentially hazardous situations, if the ship does not meet the floatability criteria given in section 3 in appendix 1 for each associated extent of flooding.

7.10 A watertight door may be permitted to remain open when operating under normal situations as defined in paragraph 10.3, if the ship does not meet the floatability criteria when the overall risk assessment indicated a level of safety acceptable to the Administration.

8 Considerations to be made on categories B and C watertight doors which may be opened for limited periods, or for passage

A watertight door of category B or C should be clearly indicated in the ship's stability information and shall always be ready to be immediately closed. Category D doors should also be clearly indicated in the ship's stability information.

9 Factors restricting the operation of watertight doors

Certain operating conditions, or combinations of several factors, should necessitate categories A, B and C doors being closed during navigation to preserve survivability. In particular, the area in which the ship is operating should be continually evaluated for associated risks with any potentially hazardous conditions. Except for category A doors for which the ship satisfies the floatability assessment criteria, it is recommended that categories A, B and C doors are kept closed during navigation while the ship is operating:

- .1 in waters with high traffic density;
- .2 near coastal waters;
- .3 in heavy weather;
- .4 in dangerous ice conditions;
- .5 in waters where soundings are unreliable;
- .6 during periods of restricted visibility;
- .7 within port limits or compulsory pilotage waters;
- .8 when loose objects are nearby, which could potentially prevent the watertight door from being closed; or
- .9 under any condition when the ship's master considers the situation to necessitate all watertight doors to be closed.

10 Operational instructions, markings and postings

10.1 Operational instructions

Operational instructions for watertight doors should be included in the ship's stability information and address the situations described in paragraphs 10.2 and 10.3. Additionally:

- .1 a copy of the operational instruction should be located at the central operating console at the navigation bridge so as to be readily available to the officer in charge of the navigation watch;

- .2 the operational instructions should state the means of verifying the correct position of all watertight doors; and
- .3 the operational instructions should cover procedures for operating watertight doors to permit safe passage of passengers, in particular, that watertight doors should only be operated by qualified persons and not by passengers.

10.2 Operational instructions in potentially hazardous situations

10.2.1 A potentially hazardous situation is defined as a situation when the ship is on a voyage and operating in conditions as described in paragraph 9.

10.2.2 The operational instructions should specify that, while the ship is navigating in potentially hazardous situations, every watertight door of category A, B or C be closed except for category A doors for which the ship satisfies the floatability assessment criteria, or when a person is passing through it. If such doors are opened for passage then it should be closed immediately after passage.

10.3 Operational instructions in normal situations

10.3.1 A normal situation is defined as a non-hazardous situation when the ship is on a voyage and operating in conditions other than as described in paragraph 9.

10.3.2 The operational instructions should specify that while the ship is navigating in normal situations each watertight door of category A, B or C be operated in accordance with the assigned category (see paragraph 6).

10.4 Markings and postings

10.4.1 The assigned category and meaning of each category should clearly be marked on both sides of either the watertight door or the bulkhead adjacent to the door in order to ensure correct operation.

10.4.2 The assigned category for each door should be indicated on or near the central operating console located on the navigation bridge in order that the correct status of all doors can be ascertained.

Appendix 1

PROCEDURE FOR THE DETERMINATION OF THE IMPACT OF OPEN WATERTIGHT DOORS ON PASSENGER SHIPS SURVIVABILITY (FLOATABILITY ASSESSMENT)

1 Introduction

1.1 This floatability assessment is only for the purpose of determining the impact of open watertight doors on ship survivability under SOLAS regulation II-1/22.4 (previous SOLAS regulation II-1/15.9.3). It is intended that this floatability assessment be applied only after the need for a watertight door(s) to remain open during navigation is established.

1.2 Care should be exercised not to confuse the "floatability assessment" criteria used in this procedure (for determining the impact of open watertight doors on survivability) with the requirements in the SOLAS chapter II-1 damage stability regulations.

2 Damage and flooding extent for the floatability assessment

2.1 In every case in which a determination that keeping one or more watertight doors open during navigation is absolutely necessary, floatability assessment calculations should be performed.

2.2 The extent of damage to be assumed for the floatability assessment should be as defined in SOLAS regulation II-1/8.3. In addition, watertight compartments inboard of the transverse extent of damage should be assumed flooded, irrespective of whether any longitudinal bulkheads are fitted with watertight doors, if:

- .1 the inboard compartment is within the longitudinal damage extent; and
- .2 the inboard compartment is connected by the watertight door(s) under investigation which are proposed to remain open during navigation.

If any lesser damage extents than indicated above would result in a more severe condition with respect to the floatability criteria, then such damage extents should be assumed in the calculations. In this context, the damage extent should be assumed as both penetrating and not penetrating the double bottom.

2.3 The floatability assessment should account for the worst cases involving the additional flooding of compartments connected with watertight doors requested to remain open during navigation. The extent of flooding assumed for the floatability assessment calculations should be as follows: any watertight door that is requested to remain open during navigation may be considered closed in each case of flooding if it is in a watertight bulkhead that is located away from the damage extent by at least one undamaged transverse watertight bulkhead/door.

3 Criteria for the floatability assessment

3.1 For each assumed flooding case described in section 2, the floatability criteria described below should be met at the deepest subdivision draught at level trim. For this loading condition, the limiting KG or GM should be assumed in the calculations.

- .1 The bulkhead deck may be immersed provided that no progressive flooding occurs (i.e. weathertight openings may not be immersed; only watertight openings may be immersed).
- .2 The maximum positive righting lever should not be less than 0.05 m.
- .3 The range of positive righting levers should not be less than 7°.
- .4 The maximum equilibrium heel angle should not exceed 15°.

3.2 The Administration may accept alternative methodologies if it is satisfied that at least the same degree of safety as represented by this procedure is achieved (reference is made to SOLAS regulation II-1/4.2).

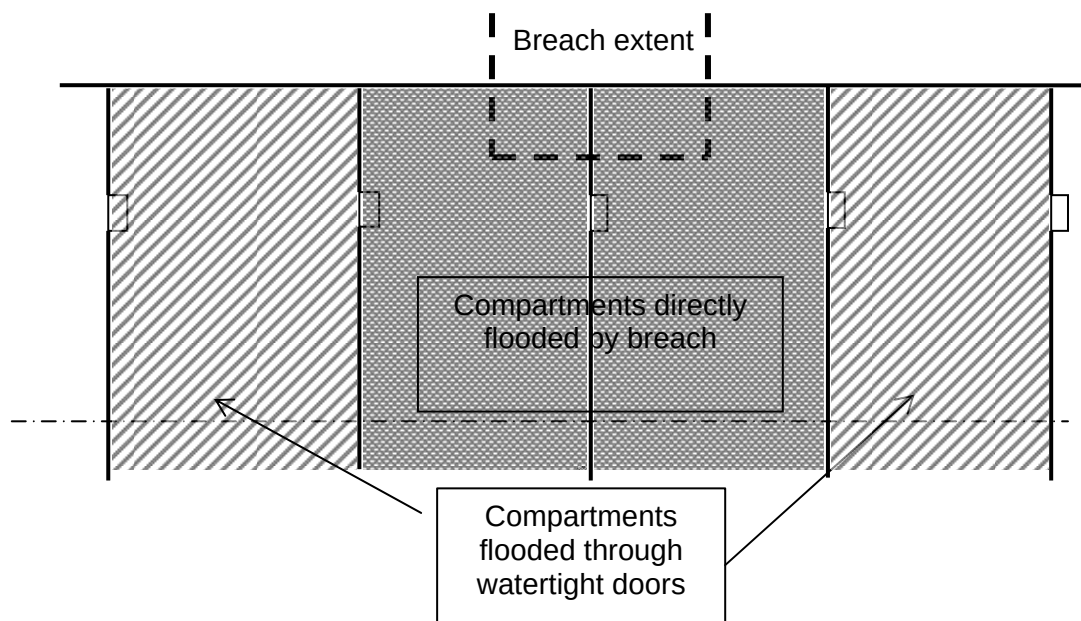
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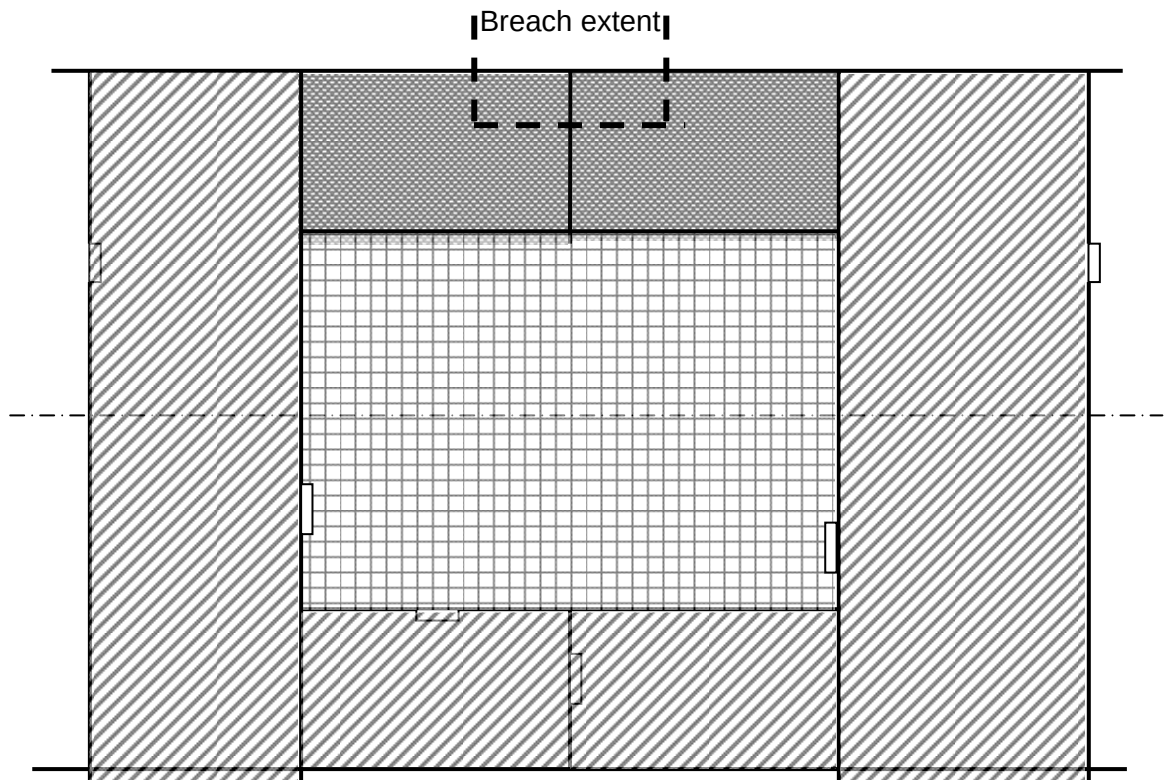
Explanatory sketches

Notes:

- 1 In the sketches below, all the doors are assumed "permitted to remain open during navigation".
- 2 In case of a ship carrying less than 400 persons, breach should only be considered between transverse bulkheads (if spaced by more than $0.03 \cdot L$).

-  Watertight door permitted to remain open during navigation
-  Direct flooding (§2.2)
-  Additional flooding according to §2.2
-  Additional flooding according to §2.3





Appendix 2

TECHNICAL STANDARDS FOR WATERTIGHT DOORS ON PASSENGER SHIPS

Only after careful consideration of the impact on ship operations and survivability should an Administration permit a watertight door to remain open during navigation. This watertight door checklist has been designed to assist an Administration in making such a determination through validation of each technical standard. Other non-technical considerations are contained in the main guidance document.

Ship	
Date:	
Door(s) No.	

Note: SOLAS regulations referred to in parenthesis are previous SOLAS chapter II-1 regulations.

Technical Standards	Yes	No	Comments
Passenger ship constructed on or after 1 February 1992 (Date of new amendments)			
SOLAS regulation II-1/13.5.1 (15.6.1) Can the door be closed simultaneously from navigation bridge in not more than 60 seconds?			
SOLAS regulation II-1/13.5.2 (15.6.2) Can the door be closed with the ship listed to 15° in either direction and with a static head of water 1 m above the sill?			
SOLAS regulation II-1/13.5.3 (15.6.3) Are controls located close to the door, such that if damage is sustained within one fifth of the breadth of the ship the door will continue to operate?			
SOLAS regulation II-1/13.6 (15.6.4) Is there an indicator to show all remote operating positions whether the door is open or closed at the navigation bridge and at the location where hand operation above deck is required?			
SOLAS regulation II-1/13.7.1.1 (15.7.1.1) Does the door have a vertical or horizontal motion?			
SOLAS regulation II-1/13.7.1.2 (15.7.1.2) Does the door have a maximum clear opening width of 1.2 m or less?			
SOLAS regulation II-1/13.7.1.2.1 (15.7.1.2.1) For doors greater than 1.2 m wide, has special consideration been given to the strength of the door and its closing appliance in order to prevent leakage?			
SOLAS regulation II-1/13.7.1.2.2 (15.7.1.2.2) For doors greater than 1.2 m wide, is it located outside the damage zone B/5?			
SOLAS regulation II-1/22.1 (15.7.1.2.3) For doors greater than 1.2 m wide, will it be kept closed when the ship is at sea except for limited periods when absolutely necessary?			
SOLAS regulation II-1/13.7.1.3 (15.7.1.3) Are the doors fitted with necessary equipment to close and open the door using electrical power, hydraulic power or any other form of power that is acceptable to the Administration?			

Technical Standards	Yes	No	Comments
SOLAS regulation II-1/13.7.1.4 (15.7.1.4) Is individual hand-operated mechanism provided for each door that permits it to be open or closed from either side and from above the bulkhead deck within 90 seconds?			
SOLAS regulation II-1/13.7.1.4 (15.7.1.4) Is direction of rotation or other movement clearly indicated and displayed at all operating positions?			
SOLAS regulation II-1/13.7.1.5 (15.7.1.5) Is the door provided with controls for opening and closing the door by power from both sides of the door and also for closing the door by power from the central operating console at the navigating bridge?			
SOLAS regulation II-1/13.7.1.6 (15.7.1.6) Is the door provided with an audible alarm, distinct from any other alarm in the area, which will sound whenever the door is closed remotely by power for at least 5 seconds, but no more than 10 seconds, before the door begins to move and shall continue sounding until the door is completely closed?			
SOLAS regulation II-1/13.7.1.6 (15.7.1.6) During remote hand operation, does the audible alarm sound when the door is moving?			
SOLAS regulation II-1/13.7.1.6 (15.7.1.6) Is the audible alarm supplemented by intermittent visual signal at the door in passenger areas of high ambient noise (if so required by Administration)?			
SOLAS regulation II-1/13.7.1.7 (15.7.1.7) Does the door have a uniform rate of closure under power that allows the door to be closed in no less than 20 seconds and no more than 40 seconds with the ship in the upright position?			
SOLAS regulation II-1/15.7.2 Is the electrical power supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck?			
SOLAS regulation II-1/13.7.2 (15.7.2) Are the associated control, indication and alarm circuits supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck and capable of being automatically supplied by the transitional source of emergency electrical power required by SOLAS regulation 42.3.1.3 in the event of failure of either the main or emergency source of electrical power?			
SOLAS regulation II-1/13.7.3.1 (15.7.3.1); Requires 13.7.3.1 or 3.2 or 3.3 (15.7.3.1 or 3.2 or 3.3) Is there a centralized hydraulic system with two independent power sources each consisting of a motor and pump capable of simultaneously closing all doors with hydraulic accumulators of sufficient capacity to operate all the doors at least three times, i.e. closed-open-closed, against an adverse list of 15°?			

Technical Standards	Yes	No	Comments
SOLAS regulation II-1/13.7.3.2 (15.7.3.2); Requires 13.7.3.1 or 3.2 or 3.3 (15.7.3.1 or 3.2 or 3.3) Is there an independent hydraulic system for each door with each power source consisting of a motor and pump capable of opening and closing the door with a hydraulic accumulator of sufficient capacity to operate the door at least three times, i.e. closed-open-closed, against an adverse list of 15°?			
SOLAS regulation II-1/13.7.3.3 (15.7.3.3); Requires 13.7.3.1 or 3.2 or 3.3 (15.7.3.1 or 3.2 or 3.3) Is there an independent electrical system and motor for each door with each power source consisting of a motor capable of opening and closing the door that is automatically supplied by the transitional source of emergency electrical power, as required by SOLAS regulation 42.4.2, in the event of failure of either the main or emergency source of electrical power and with sufficient capacity to operate the door at least three times, i.e. closed-open-closed, against an adverse list of 15°?			
SOLAS regulation II-1/13.7.3 (15.7.3) Are there alarms for low pressure/level or loss of electrical power?			
SOLAS regulation II-1/13.7.3 (15.7.3) Are the power systems separated from all other power systems such that a single failure in the electric or hydraulic power-operated systems excluding the hydraulic actuator shall not prevent the hand operation of any door?			
SOLAS regulation II-1/13.7.4 (15.7.4) Are controls handles provided at each side of the bulkhead at a minimum height of 1.6 m above the floor and arranged as to enable persons passing through the doorway to hold both handles in the open position without being able to set the power closing mechanism in operation accidentally?			
SOLAS regulation II-1/13.7.4 (15.7.4) Is the direction of movement of the handles in opening and closing the door in the direction of door movement and clearly indicated?			
SOLAS regulation II-1/13.7.5 (15.7.5) Are as far as practicable, electrical equipment and components for watertight doors situated above the bulkhead deck and outside hazardous areas and spaces?			
SOLAS regulation II-1/13.7.6 (15.7.6) Do the enclosures of electrical components necessarily situated below the bulkhead deck provide suitable protection against the ingress of water? (See footnote in SOLAS)			
SOLAS regulation II-1/13.7.7 (15.7.7) Are electric power, control, indication and alarm circuits protected against fault in such way that a failure in one door circuit will not cause a failure in any other door circuit?			

Technical Standards	Yes	No	Comments
SOLAS regulation II-1/13.7.7 (15.7.7) Are short circuits or other faults in the alarm or indicator circuits of a door protected from causing a loss of power operation of that door?			
SOLAS regulation II-1/13.7.7 (15.7.7) Does the arrangement prevent leakage of water into the electrical equipment located below the bulkhead?			
SOLAS regulation II-1/13.7.8 (15.7.8) Will a single electrical failure in the power operating or control system of a power-operated sliding watertight door be protected from causing a closed door to open?			
SOLAS regulation II-1/13.7.8 (15.7.8) Is the availability of the power supply continuously monitored at a point in the electrical circuit as near as practicable to each of the motors required by paragraph 7.3?			
SOLAS regulation II-1/13.7.8 (15.7.8) Does the loss of any such power supply activate an audible and visual alarm at the central operating console at the navigating bridge?			
SOLAS regulation II-1/13.8.1 (15.8.1)* Is the central operating console at the navigating bridge provided with a "master mode" switch with two modes of control that provide for a "local control" mode for any door to be locally opened and locally closed after use without automatic closure, and a "doors closed" mode to automatically close any door that is open?			
SOLAS regulation II-1/13.8.1 (15.8.1)* Does the "doors closed" mode permit doors to be opened locally and automatically re-close the doors upon release of the local control mechanism?			
SOLAS regulation II-1/13.8.1 (15.8.1)* Does the "master mode" switch normally remain in the "local control" mode, allowing the "doors closed" mode to only be used in an emergency or for testing purposes?			
SOLAS regulation II-1/13.8.2 (15.8.2)* Is the central operating console at the navigating bridge provided with a diagram showing the location of each door, with visual indicators to show whether each door is open or closed, such that a red light indicates a door is fully open and a green light indicates a door is fully closed?			
SOLAS regulation II-1/13.8.2 (15.8.2)* When the door is closed remotely, does the red light indicate the intermediate position by flashing?			
SOLAS regulation II-1/13.8.2 (15.8.2)* Is the indicating circuit independent of the control circuit for each door?			
SOLAS regulation II-1/13.8.3 (15.8.3)* Is the possibility to remotely open any door from the central operating console ruled out?			

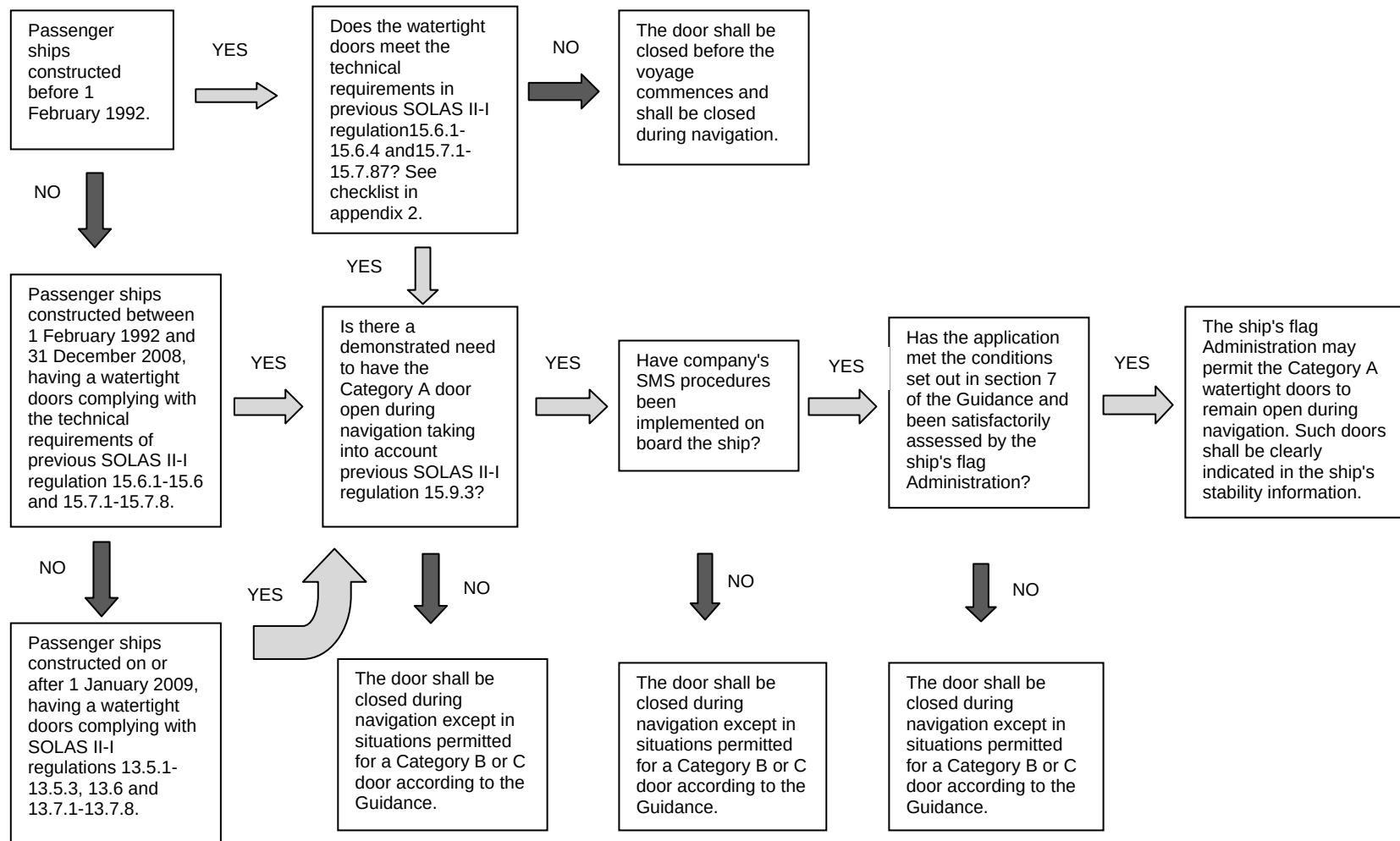
* These regulations are not required for upgrade in previous SOLAS regulation II-1/15.6.5.

* * *

Appendix 3

FLOWCHART

GUIDANCE FOR PERMITTING WATERTIGHT DOORS ON PASSENGER SHIPS TO REMAIN OPEN DURING NAVIGATION



ANNEX 4

DRAFT MSC-MEPC CIRCULAR

**UNIFIED INTERPRETATIONS ON THE APPLICATION OF SOLAS, MARPOL AND LOAD
LINE REQUIREMENTS TO CONVERSIONS OF SINGLE-HULL OIL TANKERS
TO DOUBLE-HULL OIL TANKERS OR BULK CARRIERS**

1 The Maritime Safety Committee at its [eighty-ninth session (11 to 20 May 2011)] and the Marine Environment Protection Committee at its [sixty-second session (11 to 15 July 2011)] approved the Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers, as set out in the annex to this circular. For interpretations on requirements not specified in unified interpretations approved by the Organization, the Administration concerned should be consulted.

2 Member Governments are invited to apply the annexed Unified interpretations, in accordance with paragraph 2 (Application) of the annex, in relation to conversions occurring on or after [*date of approval*], and bring them to the attention of all parties concerned.

ANNEX

UNIFIED INTERPRETATIONS ON THE APPLICATION OF SOLAS, MARPOL AND LOAD LINE REQUIREMENTS TO CONVERSIONS OF SINGLE-HULL OIL TANKERS TO DOUBLE-HULL OIL TANKERS OR BULK CARRIERS

1 General

The Unified interpretations on the application of SOLAS, MARPOL and Load Line requirements to conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers were developed from a holistic point of view, in order to assist Member Governments and all parties concerned when applying the relevant regulations to major conversions. The unified interpretations of SOLAS, MARPOL and Load Line requirements are contained in appendices 1 to 3, respectively.

2 Application^{*}

2.1 The date on which a conversion occurs for the purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enters into force should be:

- .1 the date on which the contract is placed for the conversion; or
- .2 in the absence of a contract, the date on which the work identifiable with the specific conversion begins; or
- .3 the completion date of the conversion, if that occurs more than 3 years after the date specified in subparagraph .1 above or 30 months after the date specified in subparagraph .2 above, either as applicable.

2.2 As for paragraph 2.1 above, the following applies:

- .1 Where the completion date of the conversion has been subject to delay beyond the period referred to in paragraph 2.1.3 above due to unforeseen circumstances beyond the control of the builder and the owner, the date on which contract is placed for the conversion or, if applicable, the date on which the work identifiable with the specific conversion begins may be accepted by the Administration in lieu of the completion date of the conversion. The treatment of such ships should be considered by the Administration on a case-by-case basis, bearing in mind the particular circumstances.
- .2 It is important that ships accepted by the Administration under the provisions of subparagraph .1 above should also be accepted as such by port States. In order to ensure this, the following practice is recommended to Administrations when considering an application for such a ship:

* Refer to the Unified interpretation of the application of regulations governed by the building contract date, the keel laying date and the delivery date for the requirements of the SOLAS and MARPOL Conventions (MSC-MEPC.5/Circ.4).

- .1 the Administration should thoroughly consider applications on a case-by-case basis, bearing in mind the particular circumstances. In doing so in the case of a ship converted in a foreign country, the Administration may require a formal report from the authorities of the country in which the ship was converted, stating that the delay was due to unforeseen circumstances beyond the control of the builder and the owner;
- .2 when a ship is accepted by the Administration under the provisions of subparagraph .1 above, information on the conversion date annotated on the relevant certificates should be footnoted to indicate that the ship is accepted by the Administration under the unforeseen delay in completion of the conversion provisions of this interpretation; and
- .3 the Administration should report to the Organization on the identity of the ship and the grounds on which the ship has been accepted under the unforeseen delay in the completion of the conversion provisions of this interpretation.

APPENDIX 1

UNIFIED INTERPRETATIONS ON THE APPLICATION OF SOLAS REQUIREMENTS TO CONVERSIONS OF SINGLE-HULL OIL TANKERS TO DOUBLE-HULL OIL TANKERS OR BULK CARRIERS

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

1 Regulation 1.3 – Application

For conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers, the following should apply:

- .1 Conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers should be regarded as modifications of a major character for the purposes of SOLAS chapter II-1.
- .2 Repairs, alterations and modifications of a major character include:
 - .1 Substantial alteration of the dimensions of a ship, for example lengthening of a ship by adding a new midbody. The new midbody should comply with SOLAS chapter II-1.
 - .2 A change of ship type, for example an oil tanker converted to a bulk carrier. Any structure, machinery and systems that are added or modified should comply with SOLAS chapter II-1, taking into account the interpretation of SOLAS chapter II-1 regulations as contained herein.

2 Regulations 3-2.2 and 3-2.4 – Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers

2.1 For single-hull oil tanker conversion into double-hull oil tanker, SOLAS regulation II-1/3-2 as adopted by resolution MSC.216(82) should apply to dedicated water ballast tanks if constructed with all structural members being entirely new. If converting existing spaces into water ballast tanks with part of the existing structural members remaining in place, revised SOLAS regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks should have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.

2.2 For single-hull oil tanker conversion into bulk carrier, SOLAS regulation II-1/3-2 as adopted by resolution MSC.216(82) should apply to dedicated water ballast tanks and double-side skin spaces of bulk carriers if constructed with all structural members being entirely new. If converting existing spaces into dedicated water ballast tanks or double-side skin space of bulk carriers with part of the existing structural members remaining in place, revised SOLAS regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks should have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.

3 Regulation 3-6 – Access to and within spaces in, and, forward of, the cargo area of oil tankers and bulk carriers

3.1 For single-hull oil tanker conversion into double-hull oil tanker

3.1.1 Permanent means of access contained in table 1 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures should comply with the regulation.

3.1.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

3.1.3 Additionally, an approved Ship Structure Access Manual should be provided.

3.2 For single-hull oil tanker conversion into bulk carrier

3.2.1 Permanent means of access contained in table 2 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures should comply with the regulation.

3.2.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side skin construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

3.2.3 Additionally, an approved Ship Structure Access Manual should be provided.

4 Regulation 3-8 – Towing and mooring equipment

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier

This regulation should be applied when equipment and fittings for mooring/towing are replaced, modified or the safe working load of the existing equipment and fittings is known. Where the latter cannot be ascertained, alternative compliance with SOLAS regulation II-1/3-8 should be sought (e.g., the equipment should be replaced, tested or modified).

5 Part B – Subdivision and stability

5.1 For single-hull oil tanker conversion into double-hull oil tanker

Oil tankers complying with damage stability requirements contained in Annex I to MARPOL 73/78 (except for combination carriers with type B freeboards) may be excluded from the damage stability requirements contained in SOLAS chapter II-1, part B-1.

5.2 For single-hull oil tanker conversion into bulk carrier

5.2.1 A bulk carrier which is assigned a B reduced freeboard complying with damage stability requirements contained in regulation 27 of the 1966 Load Line Convention, and resolutions A.320(IX) and A.514(13); or regulation 27 of the 1988 Load Line Protocol, may be excluded from the damage stability requirements contained in SOLAS chapter II-1, part B-1.

5.2.2 For a bulk carrier which is assigned a B freeboard, SOLAS chapter II-1, Parts B and B-1 should be applied.

SOLAS CHAPTER II-2 CONSTRUCTION – FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

6 Regulation 1.3 – Repairs, alterations, modifications and outfitting

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, new and converted parts should comply with the latest applicable requirements.

SOLAS CHAPTER III LIFE-SAVING APPLIANCES AND ARRANGEMENTS

7 Regulation 1.4.2 – Application

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, this should be considered as an alteration or modification of a major character.

8 Regulation 31.1.8 – Survival craft and rescue boats

8.1 For single-hull oil tanker conversion into double-hull oil tanker, this regulation is not relevant.

8.2 For single-hull oil tanker conversion into bulk carrier, it is recommended that SOLAS regulation III/31.1.8 should be met as for new ships, except where the space available for fitting and/or launching a free-fall lifeboat in accordance with regulation III/31.1.2.1 is not adequate, in which case the existing arrangements for lifeboats are acceptable subject to compliance with SOLAS regulation III/1.4.2.

SOLAS CHAPTER V SAFETY OF NAVIGATION

9 Regulation 22 – Navigation bridge visibility

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, the level of visibility possessed by the ship prior to the conversion at the ballast loading condition should be maintained after the conversion. Where a conversion involves the modification of structural arrangements used to establish the minimum bridge visibility under the provisions of SOLAS regulation V/22 it should comply with this regulation.

SOLAS CHAPTER XII ADDITIONAL SAFETY MEASURES FOR BULK CARRIERS

For single-hull oil tanker conversion into double-hull oil tanker, these regulations are not relevant.

For single-hull oil tanker conversion into bulk carrier, the provisions of chapter XII applicable for ships constructed on or after the date on which conversion occurs, should be applied as for a new ship to the entire bulk carrier, i.e. all new and existing parts and spaces, as follows.

10 Regulation 4 – Damage stability requirements applicable to bulk carriers

10.1 Regulation 4.1 should be applied.

10.2 Regulation 4.2 applies, based on the Unified interpretations of SOLAS regulations XII/4.2 and XII/5.2 (MSC.1/Circ.1178).

10.3 Regulation 4.3 should not be applied.

10.4 Regulation 4.4 should be applied.

10.5 Regulation 4.5 should not be applied.

10.6 Regulations 4.6 and 4.7 should be applied.

11 Regulations 5.1 and 5.2 – Structural strength of bulk carriers

Regulation 5.1 should apply. Regulation 5.2 should apply, based on the Unified interpretations of SOLAS regulations XII/4.2 and XII/5.2 (MSC.1/Circ.1178).

12 Regulation 6.1 – Structural and other requirements for bulk carriers

This regulation should not be applied.

13 Regulation 6.2 – Structural and other requirements for bulk carriers

This regulation should be applied.

14 Regulation 6.3 – Structural and other requirements for bulk carriers

This regulation should be applied.

15 Regulation 6.4 – Structural and other requirements for bulk carriers

This regulation should be applied.

16 Regulation 7.1 – Survey and maintenance of bulk carriers

This regulation should not be applied. However, SOLAS regulation XI-1/2 is applicable.

17 Regulation 7.2 – Survey and maintenance of bulk carriers

This regulation should be applied.

18 Regulation 8 – Information on compliance with requirements for bulk carriers

18.1 Regulation 8.1 should be applied.

18.2 Regulations 8.2 and 8.3 should not be applied.

19 Regulation 9 – Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds

This regulation should not be applied.

20 Regulation 10 – Solid bulk cargo density declaration

20.1 Regulation 10.1 should be applied.

20.2 Regulation 10.2 should not be applied.

21 Regulation 11 – Loading instrument

21.1 Regulation 11.1 should be applied.

21.2 Regulation 11.2 should not be applied.

21.3 Regulation 11.3 should be applied.

22 Regulation 12 – Hold, ballast and dry space water ingress alarms

22.1 Regulations 12.1 and 12.2 should be applied.

22.2 Regulation 12.3 should not be applied.

23 Regulation 13 – Availability of pumping systems

23.1 Regulations 13.1 should be applied.

23.2 Regulation 13.2 should not be applied.

24 Regulation 14 – Restrictions from sailing with any hold empty

This regulation should not be applied.

APPENDIX 2

UNIFIED INTERPRETATIONS ON THE APPLICATION OF MARPOL REQUIREMENTS TO CONVERSIONS OF SINGLE-HULL OIL TANKERS TO DOUBLE-HULL OIL TANKERS OR BULK CARRIERS

MARPOL ANNEX I

REGULATIONS FOR THE PREVENTION OF POLLUTION BY OIL

1 For single-hull oil tanker conversion into double-hull oil tanker

For the purpose of determining the application date for the requirements of regulation 20.4^{*} of MARPOL Annex I, where an oil tanker has undergone a major conversion, as defined in regulation 1 of MARPOL Annex I, that has resulted in the replacement of the forebody, including the entire cargo carrying section, the major conversion completion date of the oil tanker shall be deemed to be the date of delivery of the ship referred to in regulation 20.4 of MARPOL Annex I, provided that:

- .1 the oil tanker conversion was completed before 6 July 1996;
- .2 the conversion included the replacement of the entire cargo section and forebody and the tanker complies with all the relevant provisions of MARPOL Annex I applicable at the date of completion of the major conversion; and
- .3 the original delivery date of the oil tanker will apply when considering the 15 years of age threshold relating to the first CAS survey to be completed in accordance with regulation 20.6 of MARPOL Annex I.

2 For single-hull oil tanker conversion into bulk carrier

2.1 The relevant requirements of MARPOL Annex I should be applied to the entire bulk carrier.

2.2 With regard to conversions from single-hull oil tankers to bulk, regulation 12A of MARPOL Annex I should be applied to the entire bulk carrier, i.e. all new and existing fuel oil tanks.

*

Refer to Unified Interpretation 37 to MARPOL Annex I – Major conversion in respect of regulation 20.4, adopted by MEPC 55.

APPENDIX 3

UNIFIED INTERPRETATIONS ON THE APPLICATION OF LOAD LINE REQUIREMENTS TO CONVERSIONS OF SINGLE-HULL OIL TANKERS TO DOUBLE-HULL OIL TANKERS OR BULK CARRIERS

Article 10 – Repairs, alterations and modifications

- 1 For single-hull oil tankers converted to double-hull oil tankers:
 - .1 the ship should meet the requirements of the regulations contained in chapter III (Freeboards) of Annex I of the Convention in effect at the date of conversion. In cases where there are no changes to the parameters which result in changing of the minimum freeboard or where there is no decrease of magnitude of freeboard assigned after conversion, the converted ship should continue to comply with at least the requirements previously applicable to the ship; and
 - .2 any structure and/or equipment such as doors, hatches, and cable lockers, etc., which is newly added, replaced, or modified is to comply with the requirements of the regulations contained in chapter II (Conditions of assignment of freeboard) of Annex I of the Convention in effect at the date of conversion.
- 2 For single-hull oil tankers converted to bulk carriers:
 - .1 any such conversion should be regarded as a modification of a major character and the ship should meet all the requirements of the regulations annexed to the Convention (including regulation 39) in effect at the date of conversion; and
 - .2 notwithstanding the above, the requirements of the regulations contained in chapter II (Conditions of assignment of freeboard) of Annex I of the Convention in effect at the date of conversion, should be applied only to the structure and/or equipment, which is newly added, replaced, or modified.

ANNEX 5

**DRAFT REVISED GUIDELINES ON THE ENHANCED PROGRAMME OF INSPECTIONS
DURING SURVEYS OF BULK CARRIERS AND OIL TANKERS (ESP GUIDELINES)
(RESOLUTION A.744(18))**

The text of the draft revised ESP Guidelines is contained in document DE 54/23/Add.1.

ANNEX 6

DRAFT MSC RESOLUTION

**ADOPTION OF AMENDMENTS TO THE REVISED RECOMMENDATION ON TESTING
OF LIFE-SAVING APPLIANCES (RESOLUTION MSC.81(70))**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.689(17) entitled "Testing of life-saving appliances", by which the Assembly, at its seventeenth session, adopted the Recommendation on testing of life-saving appliances,

RECALLING FURTHER that the Assembly, when adopting resolution A.689(17), authorized the Committee to keep the Recommendation on testing of life-saving appliances under review and to adopt, when appropriate, amendments thereto,

NOTING resolution MSC.81(70), by which, at its seventieth session, it adopted the Revised recommendation on testing of life-saving appliances, recognizing the need to introduce more precise provisions for the testing of life-saving appliances based on the requirements of the International Life-Saving Appliances (LSA) Code,

RECOGNIZING the need to harmonize amendments to the Revised recommendation on testing of life-saving appliances as adopted by resolutions MSC.200(80) and MSC.226(82),

HAVING CONSIDERED, at its [eighty-ninth] session, proposed amendments to the Revised recommendation on testing of life-saving appliances, prepared by the Sub-Committee on Ship Design and Equipment at its fifty-fourth session,

1. ADOPTS amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)), as amended, the text of which is set out in the Annex to the present resolution;
2. RECOMMENDS Governments to apply the annexed amendments when testing life-saving appliances.

ANNEX

**AMENDMENTS TO THE REVISED RECOMMENDATION ON
TESTING OF LIFE-SAVING APPLIANCES
(RESOLUTION MSC.81(70), AS AMENDED)**

**PART 1
PROTOTYPE TESTS FOR LIFE-SAVING APPLIANCES**

2 – LIFEJACKETS

1 In paragraph 2.4, in the footnote, the term ":2006" is added after the referenced standard "ISO 12402-7".

2 Paragraph 2.10.4.1 is deleted and the following paragraphs are renumbered accordingly.

3 In the renumbered paragraph 2.10.4.1, the referenced ISO standards are amended as follows:

- .1 ISO 2411:1991 is replaced by ISO 2411:2000;
- .2 ISO 188 is replaced by ISO 188:2007;
- .3 ISO 4674:1977 is replaced by ISO 4674-1:2003 and ISO 4674-2:1998;
- .4 ISO 7854:1984 is replaced by ISO 7854:1995;
- .5 ISO 1421:1977 is replaced by ISO 1421:1998;
- .6 ISO 105-B02:1988 is replaced by ISO 105-B02:1994;
- .7 ISO 105-X12:1995 is replaced by ISO 105-X12:2001; and
- .8 ISO 105-E02:1978 may be replaced by ISO 105-E02:1994.

4 In the renumbered paragraph 2.10.4.3.2, in the fourth sentence, the word "show" is inserted after the word "should".

5 In the renumbered paragraph 2.10.4.5.1, the referenced standard "ISO 9227:1990" is replaced by the standard "ISO 9227:2006".

6 In the renumbered paragraph 2.10.4.6.1, in the sixth sentence, the word "points" is replaced by the words "be pointed".

7 In the renumbered paragraph 2.10.4.6.3, in the chapeau, the words "should be" are inserted after the word "lifejacket" and the word "access" is replaced by the word "assess".

3 – IMMERSION SUITS, ANTI-EXPOSURE SUITS AND THERMAL PROTECTIVE AIDS

8 The heading "*Flotation test*" is inserted before paragraph 3.1.7.

- 9 In paragraph 3.1.18:
- .1 in the first sentence, the reference to paragraph number "2.6.1" is replaced by "2.5.1" and the words "to the parts other than the lifting loop" are added at the end; and
 - .2 the following new sentence is inserted between the existing first and second sentences:

"For the lifting loop strength test, a force of not less than 3200 N should be applied."

10 In paragraph 3.3.9, in the second sentence, the word "conductivity" is replaced by the word "conductance" and the term "0.25 W/(m·K)" is replaced by "7,800 W/(m²·K)".

4 – PYROTECHNICS – ROCKET PARACHUTE FLARES, HAND FLARES AND BUOYANT SMOKE SIGNALS

- 11 In paragraph 4.8.3:
- .1 in subparagraph 4.8.3.1, the word "blown" in the first sentence is replaced by the word "drawn" and the following sentence is inserted at the end of the subparagraph:

"Smoke density should be at least 70% throughout the minimum emission time.";
 - .2 in subparagraph 4.8.3.2 and in the Note to the paragraph, the term "8.75 YR 6/14" is replaced by "8.75 R 6/14".

5 – LIFERAFTS – RIGID AND INFLATABLE

- 12 Paragraph 5.11 is replaced by the following:

"5.11 Swamp test

It should be demonstrated that the liferaft, when fully swamped, is capable of supporting its full equipment and the number of persons for which it is to be approved. It should also be demonstrated that the liferaft does not seriously deform in this condition."

- 13 In section 5.17, the referenced ISO standards are amended as follows:

- .1 ISO 1421 is replaced by ISO 1421:1998;
- .2 ISO 2411 is replaced by ISO 2411:2000;
- .3 ISO 4892-4:1994 is replaced by ISO 4892-4:2004;
- .4 ISO 4892-2 is replaced by ISO 4892-2:2006 with amendment 1:2009;
- .5 ISO 4675 is replaced by ISO 4675:1990;
- .6 ISO 7854 is replaced by ISO 7854:1995;

.7 ISO 5978 is replaced by ISO 5978:1990; and

.8 ISO 3011 is replaced by ISO 3011:1997.

6 – LIFEBOATS

14 In paragraph 6.2.2, the references to paragraph numbers "2.7" and "2.7.6.3" are replaced by "2.6" and "2.6.6.3", respectively.

15 In paragraph 6.2.5, the references to paragraph numbers "2.7.5" and "2.7.8" are replaced by "2.6.5" and "2.6.7", respectively.

7 – RESCUE BOATS AND FAST RESCUE BOATS

16 In paragraph 7.2.11, the words "full tank" are replaced by the words "fully filled fuel tank".

8 – LAUNCHING AND EMBARKATION APPLIANCES

17 In paragraph 8.2.3, the referenced standard "ISO 3768:1976" is replaced by "ISO 9227:2006 – Corrosion tests in artificial atmospheres – Salt spray tests".

10 – POSITION INDICATING LIGHTS FOR LIFE-SAVING APPLIANCES

18 In paragraph 10.1.2, the last sentence is amended to read as follows:

"The interior lights should provide an arithmetic mean luminous intensity of not less than 0.5 cd when measured over the entire upper hemisphere to permit reading of survival instructions and equipment instructions for a period of not less than 12 h."

19 In paragraph 10.2.2:

.1 in the first sentence, the word "and" after the term "-1°C" is deleted and the words ", and the other should be taken from ordinary room condition and operated immersed in fresh water at ambient temperature" are added at the end of the sentence; and

.2 at the beginning of the second sentence, the words "Both lights" are replaced by the words "All of the lights".

20 In section 10.4, the referenced standard "IEC 945: 3rd edition (November 1996)" is replaced by the standard "IEC 60945:2002".

13 – SEARCHLIGHTS FOR LIFEBOATS AND RESCUE BOATS

21 In paragraphs 13.1 to 13.3, the referenced standards "IEC 945" and "IEC 447" are replaced by the standards "IEC 60945:2002" and "IEC 60447:2004", respectively.

ANNEX 7

JUSTIFICATION FOR A NEW UNPLANNED OUTPUT ON "REVISION OF TESTING REQUIREMENTS FOR LIFEJACKET RTDs"

Proposal

To review the amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)) concerning the introduction of a reference test device (RTD) for lifejackets, adopted by resolution MSC.200(80).

IMO's objectives

The proposal is within the objectives of IMO and in line with the High-level Action Plan of the Organization for the 2010-2011 biennium, in particular high-level action 5.1.2 on "Development and review of safe evacuation, survival, recovery and treatment of people following maritime casualties or in case of distress".

Compelling need

Member Governments informed the DE Sub-Committee that several test houses and lifejacket manufacturers found that the lifejacket reference test device referred to in the Revised recommendation on testing of life-saving appliances has introduced a number of variances and inconsistencies in the testing process that have had a detrimental effect on the design and development of lifejackets.

Analysis of the issue and implications

The variances and inconsistencies reported can be addressed through amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)). This would require testing facilities to adjust the lifejacket RTD accordingly.

Benefits

The proposed amendments would remove any variances and inconsistencies in the testing of lifejackets globally.

Industry standards

Relevant European standards (EN) and ISO standards for the testing of lifejackets are available and could be consulted, but this matter can only be resolved by amending the Revised recommendation.

Output

Development of amendments to the Revised recommendation on testing of life-saving appliances (resolution MSC.81(70)) on provisions related to lifejacket RTDs.

Priority/urgency

Since this issue affects the testing of lifejackets worldwide, it should be afforded the highest priority and placed in the Sub-Committee's biennial agenda. It is expected that it would take the DE Sub-Committee two sessions to finalize the amendments. If agreed, work would start at DE 55 with a target completion year of 2012.

ANNEX 8

DRAFT MEPC RESOLUTION

**GUIDELINES AND SPECIFICATIONS FOR ADD-ON EQUIPMENT FOR UPGRADING
RESOLUTION MEPC.60(33)-COMPLIANT OIL FILTERING EQUIPMENT**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Committee,

NOTING resolution MEPC.107(49), adopted on 18 July 2003, by which the Marine Environment Protection Committee adopted, at its forty-ninth session, the current revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships and invited Governments to adopt and apply them to the maximum possible extent which they found reasonable and practicable and to report to the Organization the results of such application,

NOTING FURTHER the provisions of regulation 14.6 of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 thereto (MARPOL), in which reference is made to the above-mentioned revised Guidelines and Specifications,

HAVING CONSIDERED, at its [sixty-second] session, the Guidelines and Specifications for add-on equipment for upgrading resolution MEPC.60(33)-compliant oil filtering equipment, developed by the Sub-Committee on Ship Design and Equipment,

1. ADOPTS the Guidelines and Specifications for add-on equipment for upgrading resolution MEPC.60(33)-compliant oil filtering equipment, the text of which is set out in the annex to this resolution;
2. INVITES Governments to:
 - (a) consider the Guidelines and Specifications and encourage their application so that add-on equipment voluntarily installed on board ships to upgrade existing oil filtering equipment compliant with the provisions of the revised Guidelines and Specifications for Pollution Prevention Equipment for Machinery Space Bilges of Ships adopted by resolution MEPC.60(33) meets these Guidelines and Specifications for add-on equipment; and
 - (b) provide the Organization with information on experience gained from their application and, in particular, on successful testing of equipment against the Specifications;
3. REQUESTS the Secretariat, on the basis of information received, to maintain and update a list of approved equipment and to make it available through the Global Integrated Shipping Information System (GISIS);
4. FURTHER INVITES Governments to issue an appropriate "Certificate of type approval" as referred to in paragraph 4.2.1 of the Specifications and to recognize such certificates issued under the authority of other Governments as having the same validity as certificates issued by them.

ANNEX

**GUIDELINES AND SPECIFICATIONS FOR ADD-ON EQUIPMENT
FOR UP-GRADING RESOLUTION MEPC.60(33)-COMPLIANT
OIL FILTERING EQUIPMENT**

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1 INTRODUCTION

1.1 General

1.1.1 In 2003, the Marine Environment Protection Committee adopted the Revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships (resolution MEPC.107(49)). The main purpose of this revision of the specifications of oil filtering equipment was to improve their capability of treating emulsified oil.

1.1.2 The present Guidelines have been developed to provide further assistance for upgrading systems installed on board ships prior to 1 January 2005, and of which oil filtering equipment was approved under resolution MEPC.60(33).

1.1.3 It has been recognized that the best measure to prevent pollution resulting from oily bilge water is installation of Integrated Bilge Water Treatment System (IBTS) in accordance with MEPC.1/Circ.642 as may be amended. IBTS prevents generation of oily bilge water. Although it may not be easy or practicable to fit complete IBTS on existing ships, pre-cleaning of oily bilge water, e.g., provision of a primary tank between bilge wells and bilge tank, should be seriously considered in order to remove impurities in bilge through surfacing or sedimentation, which is an effective way of preventing clogging of bilge separators.

1.2 Scope

These guidelines apply to add-on post-treatment equipment for resolution MEPC.60(33)-compliant oil filtering equipment in order to improve their capabilities of treating emulsified oil so that emulsion-breaking performance of oily bilge separators to be achieved by installation of add-on equipment could be equivalent to that of resolution MEPC.107(49)-compliant equipment.

1.3 Up-grading options

Equipment for upgrading existing oil filtering equipment are the following two types;

- .1 equipment which could upgrade specific make of oil filtering equipment. Such equipment should be tested in accordance with Part 1 of the test specifications contained in the annex hereto, connected to a resolution MEPC.60(33) oil filtering equipment and type approved for use in conjunction with that specific make of oil filtering equipment tested, subject to: 1) environmental testing contained in Part 3 of the annex to resolution MEPC.107(49) and 2) the limiting conditions of the certification of the upgraded equipment.
- .2 equipment which could upgrade any make of resolution MEPC.60(33)-compliant oil filtering equipment. Such equipment should be tested in accordance with Part 2 of the test specifications contained in the annex hereto and type approved for use in conjunction with any make of oil filtering equipment, subject to: 1) environmental testing contained in Part 3 of the annex to resolution MEPC.107(49) and 2) the limiting conditions of the certification of the upgraded equipment.

2 DEFINITIONS

Unless otherwise specified, definitions of the terms used in the Revised guidelines and specifications for pollution prevention equipment for machinery space bilges of ships (resolution MEPC.107(49)) apply to these Guidelines.

3 TECHNICAL SPECIFICATIONS

3.1 The add-on equipment should be strongly constructed and suitable for shipboard use, bearing in mind its intended location on the ship.

3.2 It should, if intended to be fitted in locations where flammable atmospheres may be present, comply with the relevant safety regulations for such spaces. Any electrical equipment which forms part of the add-on equipment should be based in a non-hazardous area, or should be certified by the Administration as safe for use in a hazardous area. Any moving parts which are fitted in hazardous areas should be arranged so as to avoid the formation of static electricity.

3.3 The add-on equipment should be so designed that it functions automatically in conjunction with the existing equipment.

3.4 The add-on equipment should require the minimum of attention to bring it into operation. In the case of equipment used for engine room bilges, there should be no need for any adjustment to valves and other equipment to bring the add-on equipment into operation. The equipment should be capable of operating for at least 24 hours of normal duty without attention.

3.5 It should be understood that the complete type approval with the test fluid C should be performed without interruption to attend, clean or maintain the bilge water separator. This test would be regarded as a simulation of the 24 hours of unattended operation not requiring any crew attention.

3.6 It should be understood that the 15 ppm bilge separator should operate continuously and automatically without any interruptions. It should be assured that back flushing if performed during the certification test does not cause:

- .1 dilution of the test fluid C, or
- .2 dilution of the test sample sent to the laboratory for analysis.

3.7 If input flow of test fluid C is interrupted during the performance of the test it should be assured that the total quantities of test fluid C processed automatically are not less than the nominal flow of the tested equipment multiplied by the specified test duration of 150 minutes (2.5 hours). While all the time, the tested equipment operates continuously and automatically without human intervention.

3.8 The continuous and automatic operation should apply to the performance tests with the test fluid C according to the test result diagrams in the appendix to appendix 1 of resolution MEPC.107(49) as it relates to test fluid C. However, if due to the separation process any interruption in feeding the test fluid with nominal flow rate, e.g., for back flushing, is deemed necessary, the time for these interruptions should be added to the required time of the test step which was interrupted during the performance test. While all the time, the tested equipment operates continuously and automatically without human intervention.

3.9 All working parts of the add-on equipment which are liable to wear or to damage should be easily accessible for maintenance.

4 SPECIFICATION FOR TYPE APPROVAL TESTING OF ADD-ON EQUIPMENT

4.1 Testing requirements

4.1.1 The production model of add-on equipment, for which the approval will apply, should be identical to the equipment, type-tested in accordance with the performance and test specifications contained in part 1 or 2 of the annex to these Guidelines. The equipment should also be type-tested in accordance with the specifications for environmental testing contained in part 3 of the annex to resolution MEPC.107(49).

4.1.2 Where a range of add-on equipment of the same design, but of different capacities, requires certification in accordance with these specifications, the Administration may accept tests in two capacities within the range, in lieu of tests on every size, providing that the two tests actually performed are from the lowest quarter and highest quarter of the range.

4.2 Approval and certification procedures

Add-on equipment which in every respect fulfils the provisions of these Guidelines may be approved by the Administration for fitting on board ships. The approval should take the form of a certificate of type approval specifying the main particulars of the apparatus and any limiting conditions on its usage necessary to ensure its proper performance. Such certificate should be issued in the format shown in part 3 of the annex.

5 INSTALLATION REQUIREMENTS

5.1 Before installation of add-on equipment, it is important to ascertain that the existing oil filtering equipment is well maintained and in good working condition and that the rated capacity match that of add-on equipment.

5.2 The add-on equipment should be installed between the existing oil filtering equipment and the sampling point provided for inspection purposes on board ship.

5.3 The add-on equipment should be fitted with a permanently attached plate giving any operational or installation limits considered necessary by the manufacturer or by the Administration.

5.4 A vessel fitted with an add-on equipment should, at all times, have on board a copy of the operating and maintenance manuals.

5.5 For inspection purposes on board ship, a sampling point should be provided in a vertical section of the water effluent piping as close as is practicable to the 15 ppm bilge separator and add-on equipment outlet. Re-circulating facilities should be provided, after and adjacent to the overboard outlet of the stopping device to enable the 15 ppm bilge separator system, including the 15 ppm bilge alarm and the automatic stopping device where fitted, to be tested with the overboard discharge closed.

5.6 Where fitted, the bilge alarm should be approved according to resolution MEPC.107(49).

ANNEX

TEST AND PERFORMANCE SPECIFICATIONS FOR TYPE APPROVAL OF ADD-ON EQUIPMENT FOR UPGRADING RESOLUTION MEPC.60(33)-COMPLIANT OIL FILTERING EQUIPMENT

PART 1

ADD-ON EQUIPMENT TO BE FITTED TO SPECIFIC OIL FILTERING EQUIPMENT APPROVED UNDER RESOLUTION MEPC.60(33)

1 General

1.1 These test and performance specifications for type approval relate to add-on equipment for oil filtering equipment type approved in accordance with resolution MEPC.60(33) (hereinafter referred to as "oil filtering equipment"). In addition, the electrical and electronic systems of the add-on equipment should be tested in accordance with the specifications for environmental testing contained in part 3 of resolution MEPC.107(49).

1.2 The test of add-on equipment should be carried out in combination with oil filtering equipment to which add-on equipment being tested is intended to be added on.

2 Test specifications

2.1 These specifications relate to add-on equipment for oil filtering equipment. A set of oil filtering equipment and add-on equipment should be capable of producing an effluent for discharge to the sea containing not more than 15 ppm of oil, when 3,000 ppm oil in water emulsions are fed.

2.2 The test rig must be so constructed as to include not only oil filtering equipment and add-on equipment, but also the pumps, valves, pipes and fittings as shown in figure 1:

- .1 for the testing of oil filtering equipment having no integral pump, the centrifugal pump "A" (figure 1) is used to feed oil filtering equipment with valves 2 and 4 open, and valve 3 closed. The rate of flow from the centrifugal pump "A" is matched to the design throughput of oil filtering equipment by adjustment of the centrifugal pump's discharge valve;
- .2 a centrifugal pump "B" should be fitted to re-circulate the test fluid "C" in the tank to ensure that the test fluid "C" is maintained in a stable condition throughout the testing;
- .3 to ensure a good mix of the test fluid and the water, a conditioning pipe as specified in paragraph 2.4 should be fitted immediately before oil filtering equipment;
- .4 other valves, flow meters and sample points should be fitted to the test rig as shown in figure 1; and
- .5 the pipe work should be designed for a maximum liquid velocity of 3 metres/second.

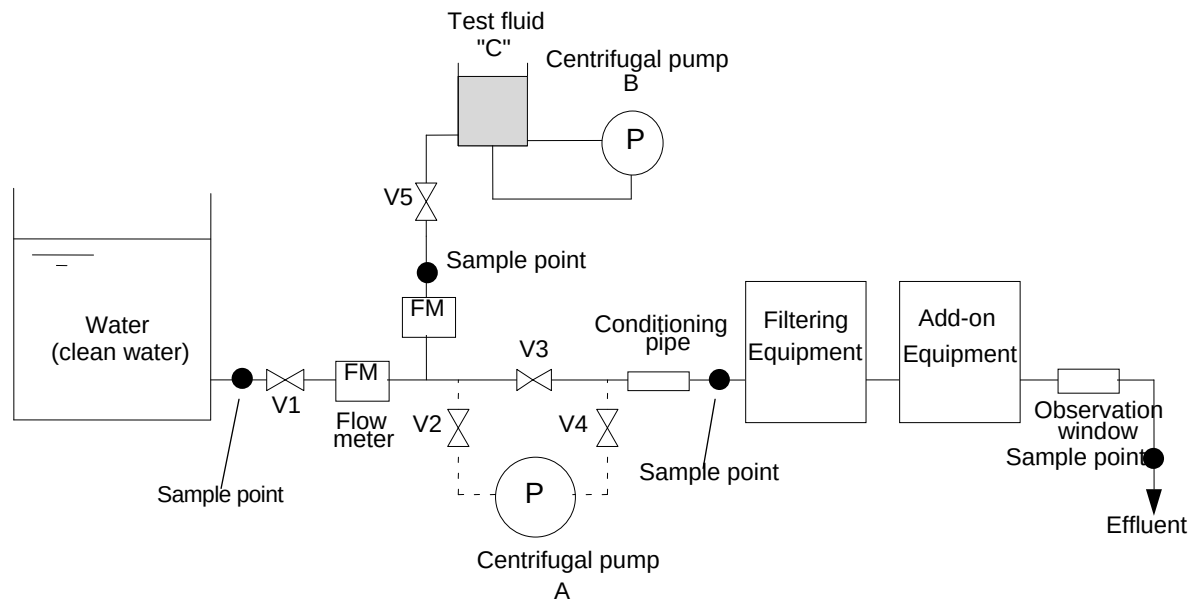


Figure 1 – Test rig

2.3 Tests should be performed using test fluid "C" as defined in resolution MEPC.107(49).

2.4 If oil filtering equipment includes an integrated feed pump, oil filtering equipment and add-on equipment should be tested with that pump supplying the required quantity of test fluid and water to oil filtering equipment at its rated capacity. If oil filtering equipment is to be fed by the ship's pumps, then the unit will be tested by supplying the required quantity of test fluid and water mixture to the inlet of a centrifugal pump operating at not less than 1,000 rpm (see dotted line in figure 1). This pump should have a delivery capacity of not less than 1.1 times the rated capacity of oil filtering equipment at the delivery pressure required for the test. If a centrifugal pump is used, the excess pump capacity should be controlled by a throttle valve on the discharge side of the pump. In all cases, to ensure uniform conditions, the piping arrangements immediately prior to oil filtering equipment should be such that the influent to oil filtering equipment should have a Reynolds number of not less than 10,000 as calculated in fresh water, a liquid velocity of not less than 1 metre per second and the length of the supply pipe from the point of test fluid injection to oil filtering equipment should have a length not less than 20 times its diameter. A mixture inlet sampling point and a thermometer pocket should be provided near oil filtering equipment inlet and an outlet sampling point and observation window should be provided on the discharge pipe.

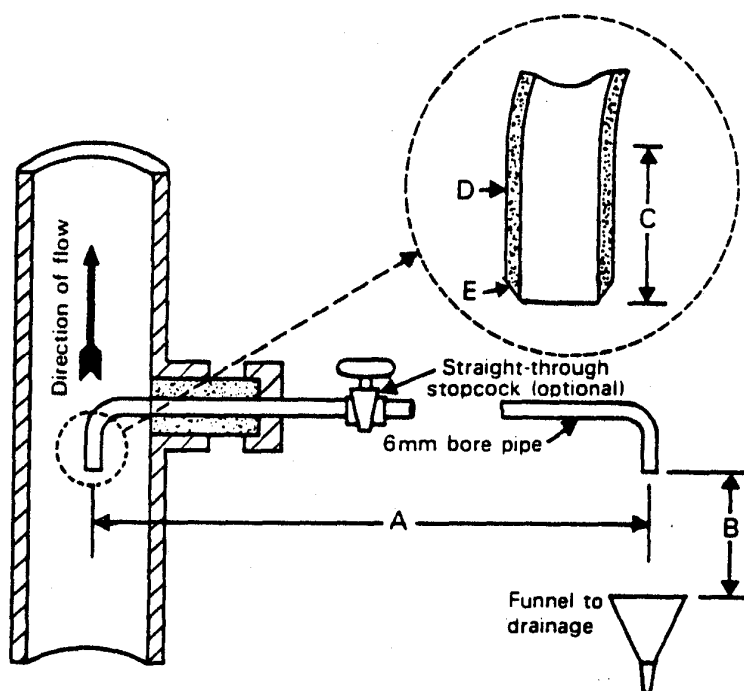


Figure 2 – Diagram of sampling arrangements

- A Distance A, not greater than 400 mm
- B Distance B, sufficient to insert sampling bottle
- C Dimension C, straight length should not be less than 60 mm
- D Dimension D, pipe thickness should not be greater than 2 mm
- E Detail E, chisel-edged chamfer (30°)

2.5 In order to approach isokinetic sampling – i.e. the sample enters the sampling pipe at stream velocity – the sampling arrangement should be as shown in figure 2 and, if a cock is fitted, free flow should be effected for at least one minute before any sample is taken. The sampling points should be in pipes running vertically.

2.6 In the case of oil filtering equipment and add-on equipment depending essentially on gravity, the feed to the system of the test water and test fluid mixture should be maintained at a temperature not greater than 40°C, and heating and cooling coils should be provided where necessary. The water shall have a density of not more than 1.015 at 20°C. In other forms of separation where the dependence of separation efficiency on temperature is not established, tests should be carried out over a range of influent temperatures representing the normal shipboard operating range of 10°C to 40°C or should be taken at a temperature in this range where the separation efficiency is known to be worst.

2.7 In those cases where, for oil filtering equipment and add-on equipment, it is necessary to heat water up to a given temperature and to supply heat to maintain that temperature, the tests should be carried out at the given temperature.

2.8 The tests with test fluid "C" should be carried out as follows:

- .1 prior to the test with test fluid "C", oil filtering equipment and add-on equipment should be filled up with water (density of not more than 1.015 at 20°C);
- .2 oil filtering equipment and add-on equipment should be fed with a mixture composed of 6% test fluid "C" and 94% water to have emulsified oil content of 3,000 ppm in the test water until steady conditions have been established. Steady conditions are assumed to be the conditions established after pumping through oil filtering equipment and add-on equipment a quantity of test fluid "C"/water mixture not less than twice the volume of oil filtering and add-on equipment; and
- .3 the test should then proceed for 2.5 h. Samples should be taken at the effluent outlet at 50 minutes and 100 minutes after conditioning. At the end of this test, an air cock should be opened on the suction side of the pump and, if necessary, the test fluid "C" and water valves should be slowly closed together, and a sample taken at the effluent discharge as the flow ceases (this point can be checked from the observation window).

2.9 Sampling should be carried out as shown in figure 2 so that the sample taken will suitably represent the fluid issuing from the effluent outlet of add-on equipment.

2.10 Samples should be taken in accordance with ISO 9377-2:2000. The sample is to be extracted on the same day of collection, and be sealed and labelled in the presence of a representative of the national authority and arrangements should be made for analysis as soon as possible and in any case within seven days, provided the samples are being kept between 2°C and 6°C at laboratories approved by the Administration.

2.11 The oil content of the samples should be determined in accordance with part 4 of the annex to resolution MEPC.107(49).

2.12 When accurate and reliable oil content meters are fitted at inlet and outlet of add-on equipment, one sample at inlet and outlet taken during each test will be considered sufficient if they verify, to within $\pm 10\%$, the meter readings noted at the same instant.

PART 2

ADD-ON EQUIPMENT TO BE FITTED TO ANY OIL FILTERING EQUIPMENT

3 General

These test and performance specifications for type approval relate to add-on equipment for any oil filtering equipment type-approved in accordance with resolution MEPC.60(33). In addition, the electrical and electronic systems of the add-on equipment should be tested in accordance with the specifications for environmental testing contained in part 3 of resolution MEPC.107(49).

4 Test specifications

4.1 These specifications relate to add-on equipment. The add-on equipment should be capable of producing an effluent for discharge to the sea containing not more than 15 ppm of oil when 3,000 ppm oil in water emulsions are fed.

4.2 The test rig must be so constructed as to include not only add-on equipment but also the pumps, valves, pipes and fittings as shown in figure 3:

- .1 for the testing centrifugal pump "A" (figure 3) is used to feed the add-on equipment. The rate of flow from the centrifugal pump "A" is matched to the design throughput of the add-on equipment by the adjustment of the centrifugal pump's discharge valve;
- .2 a centrifugal pump "B" should be fitted to re-circulate the test fluid C in the tank to ensure that the test fluid C is maintained in a stable condition throughout the testing;
- .3 to ensure a good mix of the test fluid and the water, a conditioning pipe as specified in paragraph 4.4 should be fitted immediately before add-on equipment;
- .4 other valves, flow meters and sample points should be fitted to the test rig as shown in figure 3; and
- .5 the pipe work should be designed for a maximum liquid velocity of 3 metres/second.

4.3 Tests should be performed using test fluid "C" as defined in resolution MEPC.107(49).

4.4 The add-on equipment is tested by supplying the required quantity of test fluid and water mixture to the inlet by a centrifugal pump operating at not less than 1,000 rpm. This pump should have a delivery capacity of not less than 1.1 times the rated capacity of add-on equipment at the delivery pressure required for the test. The excess pump capacity should be controlled by a throttle valve on the discharge side of the pump. In all cases, to ensure uniform conditions, the piping arrangements immediately prior to add-on equipment should be such that the influent to add-on equipment should have a Reynolds number of not less than 10,000 as calculated in fresh water, a liquid velocity of not less than 1 metre per second and the length of the supply pipe from the point of test fluid injection to add-on equipment should have a length not less than 20 times its diameter. A mixture inlet sampling point and a thermometer pocket should be provided near add-on equipment inlet and an outlet sampling point and observation window should be provided on the discharge pipe.

4.5 In order to approach isokinetic sampling – i.e. the sample enters the sampling pipe at stream velocity – the sampling arrangement should be as shown in figure 2 and, if a cock is fitted, free flow should be affected for at least one minute before any sample is taken. The sampling points should be in pipes running vertically.

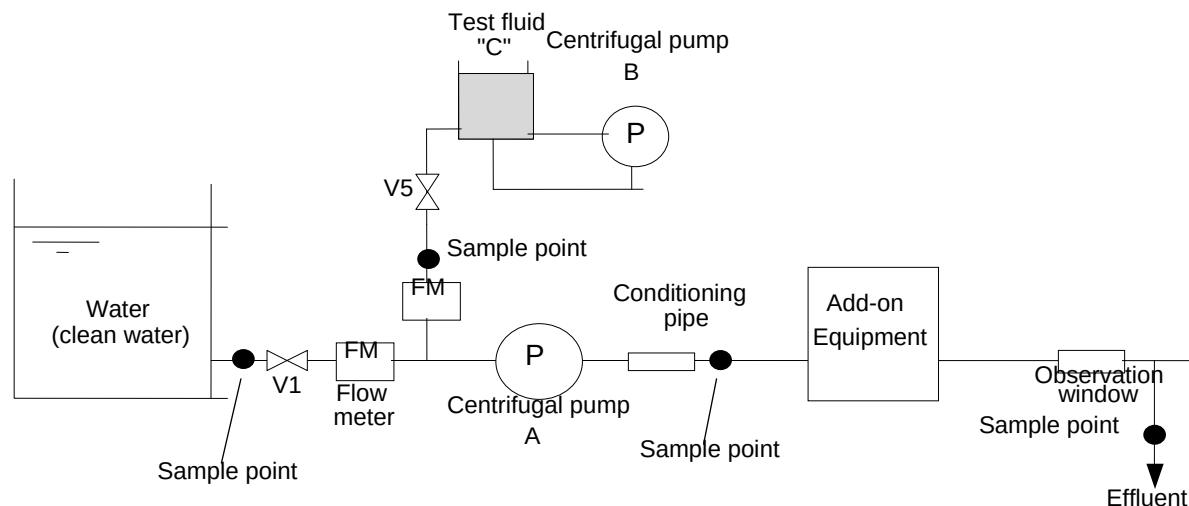


Figure 3 – Test rig

4.6 In the case of add-on equipment depending essentially on gravity, the feed to the add-on equipment of the test water and test fluid mixture should be maintained at a temperature not greater than 40°C, and heating and cooling coils should be provided where necessary. The water should have a density of not more than 1.015 at 20°C. In other forms of separation where the dependence of separation efficiency on temperature is not established, tests should be carried out over a range of influent temperatures representing the normal shipboard operating range of 10°C to 40°C or should be taken at a temperature in this range where the separation efficiency is known to be worst.

4.7 In those cases where, for add-on equipment, it is necessary to heat water up to a given temperature and to supply heat to maintain that temperature, the tests should be carried out at the given temperature.

4.8 The tests with test fluid "C" should be carried out as follows:

- .1 prior to the test with test fluid "C", add-on equipment should be filled up with water (density of not more than 1.015 at 20°C);
- .2 add-on equipment should be fed with a mixture composed of 6% test fluid "C" and 94% water to have emulsified oil content of 3,000 ppm in the test water until steady conditions have been established. Steady conditions are assumed to be the conditions established after pumping through add-on equipment a quantity of test fluid "C"/water mixture not less than twice the volume of add-on equipment; and
- .3 the test should then proceed for 2.5 h. Samples should be taken at the effluent outlet at 50 minutes and 100 minutes after conditioning. At the end of this test, an air cock should be opened on the suction side of the pump and, if necessary, the test fluid "C" and water valves should be slowly closed together, and a sample taken at the effluent discharge as the flow ceases (this point can be checked from the observation window).

4.9 Sampling should be carried out as shown in figure 2 so that the sample taken will suitably represent the fluid issuing from the effluent outlet of add-on equipment.

4.10 Samples should be taken in accordance with ISO 9377-2:2000. The sample is to be extracted on the same day of collection, and be sealed and labelled in the presence of a representative of the national authority and arrangements should be made for analysis as soon as possible and in any case within seven days, provided the samples are being kept between 2°C and 6°C at laboratories approved by the Administration.

4.11 The oil content of the samples should be determined in accordance with part 4 of the annex to resolution MEPC.107(49).

4.12 When accurate and reliable oil content meters are fitted at inlet and outlet of add-on equipment, one sample at inlet and outlet taken during each test will be considered sufficient if they verify, to within $\pm 10\%$, the meter readings noted at the same instant.

PART 3

DOCUMENTATION OF APPROVAL

5.1 Satisfactory compliance with all the test requirements enumerated in part 1 or 2 of this annex should be shown in the certificate of type approval issued by the Administration in the format specified in paragraph 5.2 below. An Administration may issue a certificate of type approval based on separate testing or on testing already carried out under supervision by another Administration.

5.2 A certificate of type approval should be in the format shown in the appendix to this annex. The Certificate should identify the type and model of the add-on equipment to which it applies and identify equipment assembly drawings, duly dated. Each drawing should bear the model specification numbers or equivalent identification details. The certificate should include the full performance test protocol on which it is based. If a certificate of type approval is issued by an Administration based on a certificate previously issued by another Administration, the certificate should identify the Administration which conducted the test on add-on equipment and a copy of the original test results should be attached to it.

BADGE
OR
CIPHER

Appendix 1

Certificate of type approval for add-on equipment

Name of Administration

This is to certify that the add-on equipment listed below has been examined and tested in accordance with the requirements of the specifications of the annex to the Guidelines contained in resolution MEPC....(.). This certificate is valid only for add-on equipment referred to below.

Add-on equipment supplied by

Under type and model designation
and incorporating:

*Add-on equipment manufactured by
to specification/assembly drawing No date
*Coalescer/Absorbent/Membrane/Filter manufactured by
to specification/assembly drawing No
*Control equipment manufactured by
to specification/assembly drawing No date
*Other means
to specification/assembly drawing No

*For installation on oil filtering equipment supplied by

Under type and model designation

Maximum throughput of system m³/h ____

Limiting conditions imposed

Test date and results attached in the appendix.

Official stamp

Signed
Administration of
Date this day of 20

*
Delete as appropriate.

Appendix 2

Test data and results of tests conducted on add-on equipment in accordance with Part 1 or 2 of the annex to the Guidelines contained in resolution MEPC....(..)

Add-on equipment submitted by

Test location

Method of sample analysis

.....

.....

Samples analysed by

Environmental testing of the electrical and electronic sections of the add-on equipment has been carried out in accordance with part 3 of the annex to the Guidelines contained in resolution MEPC....(..). The equipment functioned satisfactorily on completion of each test specified on the environmental test protocol.

.....

.....

.....

Test fluid .C.

Surfactant – documentary evidence*

Iron oxides – documentary evidence*

Test water

Density at 20°C

Solid matter present

Test temperatures

Ambient °C

Test fluid .C. °C

Test water °C

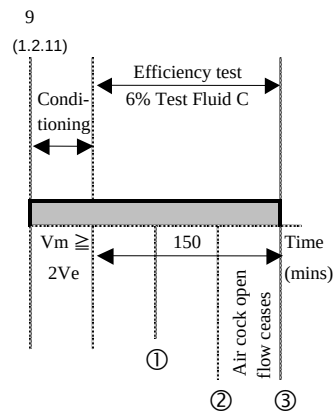
Diagram of test rig attached

Diagram of sampling arrangement attached

* Certificate or laboratory analysis.

TEST RESULTS (IN PPM) AND TEST PROCEDURES

Test fluid C



[Graph to be updated]

	1	2	3
Influent			
Effluent			

Signed DateOfficial stamp

(Official stamp or equivalent identification and the date of approval to be placed on all pages of the test protocol.)

ANNEX 9

DRAFT MEPC CIRCULAR

GUIDELINES FOR A SHIPBOARD OILY WASTE POLLUTION PREVENTION PLAN

1 The Marine Environment Protection Committee, at its [sixty-second session (.. to .. July 2011)], approved Guidelines for a shipboard oily waste pollution prevention plan and agreed to disseminate the Guidelines by means of an MEPC circular.

2 Member Governments are invited to encourage the use of the Guidelines, attached in the annex, by shipowners and operators when drawing plans for oil waste prevention for ships flying their flags and to bring the contents of the Guidelines to the attention of all interested parties.

ANNEX

GUIDELINES FOR A SHIPBOARD OILY WASTE POLLUTION PREVENTION PLAN

1 Introduction

1.1 These guidelines are intended to assist shipowners and operators in the development of shipboard oily waste pollution prevention plans for machinery spaces of ships to support the environmental objectives required by the ISM Code.

1.2 Key elements of the shipboard oily waste pollution prevention plan should include documented ship-specific company procedures as laid out in these Guidelines.

2 Initial assessment

These procedures should be based on an initial assessment of the company's existing arrangements, shipboard incinerator and oil filtering equipment and related oily waste and bilge water management systems, including minimizing waste generation directly associated with the maintenance, cleaning, and operation of all equipment and systems within a machinery space.

3 Shipboard oily waste pollution prevention plan

The shipboard oily waste pollution prevention plan should contain measures, including as provided for in paragraphs 4 to 14, in order to ensure proper oily waste disposal in accordance with relevant flag State and port State regulations. The measures could be directly incorporated in a shipboard oily waste pollution prevention plan or in the Safety Management System (SMS).

4 Storage, treatment and disposal

A specific company policy on the storage, treatment and disposal of oily waste and bilge water management.

5 Continuous review

A company policy to encourage improvement* in the management of oily waste. This policy may include procedural, maintenance, operational and system improvements.

6 Authority and accountability

Defined levels of authority and accountability to ensure proper oily waste management, including:

- .1 lines of communication between shore and ship personnel;
- .2 methods to assure shore side and shipboard accountability; and
- .3 compliance verification.

* Installation of add-on equipment or changes to installed type-approved equipment may require flag Administration approval

7 Identification of waste streams

Procedures for determining and documenting waste streams, by volume and types.

8 Minimizing wastes

Procedures to minimize oily waste generation, bilge contaminants and segregation of clean water,* including:

- .1 maintenance, procedures and operational controls; and
- .2 minimizing waste and contaminant generation directly associated with the maintenance, cleaning, and operation of equipment and systems within a machinery space.

9 Documentation and record-keeping

Document control procedures, including oil record book.

10 Reducing potential for human error

Arrangements and procedures to reduce any potential for human error and promote accuracy of record-keeping and integrity of equipment operation.

11 Reporting of accidents

Reporting procedures for accidents and non-conformities.

12 Responding to emergencies

Procedures for preparing for and responding to shipboard emergencies, specifically related to discharge of oily bilge water.

13 Equipment instructions

Procedures to ensure proper functioning of oily water separators, incinerators and bilge water management and treatment systems, including maintenance, troubleshooting and operation for controls and specialized equipment.

14 Training

Procedures for the evaluation of shipboard personnel competence, awareness and training, specifically relating to oily waste pollution prevention and bilge water treatment systems operation.

* Refer to the 2008 Revised guidelines for systems for handling oily wastes in machinery spaces of ships incorporating guidance notes for an integrated bilge water treatment system (IBTS) in MEPC.1/Circ.642, as may be amended.

ANNEX 10

DRAFT MEPC RESOLUTION

**AMENDMENTS TO THE REVISED GUIDELINES AND SPECIFICATIONS FOR OIL
DISCHARGE MONITORING AND CONTROL SYSTEMS FOR OIL TANKERS
(RESOLUTION MEPC.108(49))**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

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

NOTING that regulation 31 of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), specifies that oil tankers of 150 gross tonnage and above shall be fitted with an oil discharge and monitoring control system approved by the Administration and designed and installed in compliance with the Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers adopted by the Organization,

NOTING ALSO resolution MEPC.108(49) entitled "Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers" developed in implementation of the said regulation,

HAVING CONSIDERED, at its [sixty-second] session, the recommendation submitted by the Sub-Committee on Ship Design and Equipment,

1. ADOPTS amendments to the Revised Guidelines and Specifications for Oil Discharge Monitoring and Control Systems for Oil Tankers, the text of which is set out in the annex to this resolution,
2. INVITES Governments to implement the Revised Guidelines and Specifications, as amended, when approving oil discharge monitoring and control systems being installed on oil tankers on or after [...] in accordance with the requirements of paragraphs .2 and .3 of regulation 31 of MARPOL Annex I.

ANNEX

AMENDMENTS TO THE REVISED GUIDELINES AND SPECIFICATIONS

6 TECHNICAL SPECIFICATIONS

6.11 Manually operated alternatives in the event of equipment malfunction

Amend paragraph 6.11.1 to read as follows:

"6.11.1 The alternative means of obtaining information in the event of a failure in the monitoring system should follow the requirements in MARPOL Annex I, regulation 31.4 of the operational manual as approved by the Administrations and should be as follows:

- .1 oil content meter or sampling system: location and measurement of the oil/water interface using the equipment as required in regulation 32, visual observation of the surface of the water adjacent to the effluent discharge and recording the relevant data for the discharge accurately in the Oil Record Book Part II in sections H and I;
- .2 flow meter: pump discharge characteristics, etc.;
- .3 ship's speed indicating device: main engine rpm, etc.;
- .4 processor: manual calculation and manual recording; and
- .5 overboard discharge control: manual operation of pumps and valves."

ANNEX 11

BIENNIAL AGENDA OF THE DE SUB-COMMITTEE AND ITEMS ON THE COMMITTEE'S POST-BIENNIAL AGENDA UNDER THE PURVIEW OF THE SUB-COMMITTEE

BIENNIAL AGENDA *

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT (DE)					
PLANNED OUTPUTS 2010-2011 (resolution A.1012(26))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number	Description				
1.1.2.2	Consideration of IACS unified interpretations	MSC		DE	Continuous
2.0.1.6	Guidance to ensure a consistent policy for watertight doors to remain open during navigation	MSC	DE	SLF	2010
2.0.1.29	Interpretation of application of SOLAS, MARPOL and Load Line requirements for major conversions of oil tankers	MSC MEPC	DE		2010
2.0.1.[30]	Application of amendments to SOLAS chapter III and the LSA Code	MSC	DE		2010
5.1.1.1	Performance standards for recovery systems for all types of ships	MSC	DE		2010 2011
5.1.1.7	Safety provisions applicable to tenders operating from passenger ships	MSC	DE	FP, COMSAR, NAV, SLF, STW	2011
5.1.1.10	Guidelines for a visible element to general alarm systems on passenger ships	MSC	DE	FP	2012

* Items printed in bold have been selected for the draft provisional agenda for DE 55, shown in annex 2. Struck-out text indicates completed outputs and shaded text indicates proposed changes. Deleted outputs will be maintained in the report on the status of planned outputs.

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT (DE)					
PLANNED OUTPUTS 2010-2011 (resolution A.1012(26))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number	Description				
5.1.2.1	Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory	MSC	DE	FSI, NAV, STW	2010 2011
5.1.2.1	Guidelines for the standardization of lifeboat control arrangements	MSC	DE		2010 2011
5.1.2.4	Development of a new framework of requirements for life-saving appliances	MSC	DE		2012
5.2.1.1/ 5.3.1.1	Amendments to resolution A.744(18)	MSC	DE		2010 2011
5.2.1	Development of guidelines for use of fibre reinforced plastic (FRP) within ship structures	MSC	DE	FP	2013
5.2.1.8	Supporting guidelines for cargo oil tank coating and corrosion protection	MSC	DE		2010 2011
5.2.1.13	Development of safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	MSC	DE		2011
5.2.1.14	Thermal performance of immersion suits	MSC	DE		2010 2012
5.2.1.19	Development of a mandatory Code of ships operating in polar waters	MSC	DE		2012
5.2.1.24	Revision of resolution A.760(18)	MSC	DE		2010 2011
5.2.1.26	Protection against noise on board ships	MSC	DE		2010 2011

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT (DE)					
PLANNED OUTPUTS 2010-2011 (resolution A.1012(26))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number	Description				
5.2.1.27	Amendments to the Revised recommendation on testing of life-saving appliances	MSC	DE		2010 2011
5.2.1.28	Classification of offshore industry vessels and consideration of the need for a Code for offshore construction support vessels	MSC	DE		2010 2011
7.1.2.27	Test standards for type approval of add-on equipment	MEPC	DE		2011
7.1.2.28	Measures to promote integrated bilge water treatment systems	MEPC	DE		2011
7.1.2.29	Guidelines for a shipboard oil waste pollution prevention plan	MEPC	DE		2011
7.1.2.30	Manually operated alternatives in the event of pollution prevention equipment malfunctions	MEPC	DE		2011
[...]	Revision of resolution MEPC.159(55)*	MEPC	DE		2012
[...]	Revision of testing requirements for lifejacket RTDs**	MSC	DE		2012

* New unplanned output approved by MEPC 61.

** New unplanned output proposed by the Sub-Committee for consideration by MSC 88.

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

MARITIME SAFETY COMMITTEE								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Timescale (sessions)	Remarks
No.	Reference to Strategic Directions	Reference to High-level Actions	Description					
1	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	2.0.1		Performance standard for protective coatings for void spaces on all types of ships	MSC	DE		2	MSC 76/23, paragraphs 20.41.2 and 20.48; DE 50/27, section 4
3	2.0.1		Revision of the provisions for helicopter facilities in SOLAS and the MODU Code	MSC	DE		2	DE 52/21, paragraph 5.5; MSC 86/26, paragraph 23.39
4	2.0.1		General requirements on electrical installations	MSC	DE		2	MSC 86/26, paragraph 23.36
7	5.2.1	5.2.1.15	Amendments to the LSA Code for free-fall lifeboats with float-free capabilities	MSC	DE		1	MSC 76/23, paragraphs 20.41.3 and 20.48; DE 47/25, paragraph 19.2

MARITIME SAFETY COMMITTEE								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Timescale (sessions)	Remarks
No.	Reference to Strategic Directions	Reference to High-level Actions	Description					
8	5.2.1		Testing of watertight compartments	MSC	DE		2	MSC 86/26, paragraph 23.36
9	5.2.1		Recommendation on conditions for the approval of servicing stations for inflatable liferafts	MSC	DE		1	MSC 87/26, paragraph 24.30

ANNEX 12

PROVISIONAL AGENDA FOR DE 55

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Consideration of IACS unified interpretations
 - 4 Performance standards for recovery systems for all types of ships
 - 5 Safety provisions applicable to tenders operating from passenger ships
 - 6 Guidelines for a visible element to general alarm systems on passenger ships
 - 7 Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory
 - 8 Guidelines for the standardization of lifeboat control arrangements
 - 9 Development of a new framework of requirements for life-saving appliances
 - 10 Amendments to resolution A.744(18)
 - 11 Supporting guidelines for cargo oil tank coating and corrosion protection
 - 12 Development of a mandatory Code of ships operating in polar waters
 - 13 Revision of resolution A.760(18)
 - 14 Protection against noise on board ships
 - 15 Classification of offshore industry vessels and consideration of the need for a Code for offshore construction support vessels
 - 16 Measures to promote integrated bilge water treatment systems
 - 17 Revision of resolution MEPC.159(55)
 - 18 Revision of testing requirements for lifejacket RTDs
 - 19 Biennial agenda and provisional agenda for DE 56
 - 20 Election of Chairman and Vice-Chairman for 2012
 - 21 Any other business
 - 22 Report to the Maritime Safety Committee

ANNEX 13

REPORT ON THE STATUS OF PLANNED OUTPUTS OF THE HIGH-LEVEL ACTION PLAN OF THE ORGANIZATION AND PRIORITIES FOR THE 2010-2011 BIENNIUM RELEVANT TO THE SUB-COMMITTEE*

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2010-2011	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		DE 54/23, section 3; MSC 78/26, paragraph 22.12
2.0.1.6	Non-mandatory instruments: guidance to ensure a consistent policy for watertight doors to remain open during navigation	2010	MSC	DE	SLF	Completed		DE 54/23, section 4; SLF 52/19, section 7; MSC 82/24, paragraph 21.47
2.0.1.29	Interpretation of application of SOLAS, MARPOL and Load Line requirements for major conversions of oil tankers	2010 (DE)	MSC MEPC	DE		Completed		DE 54/23, section 5; MSC 85/26, paragraph 23.28
2.0.1.30	Application of amendments to SOLAS chapter III and the LSA Code	2010	MSC	DE		Completed		DE 54/23, section 6; MSC 86/26, paragraphs 3.18 and 23.31
5.1.1.1	Mandatory instruments: performance standards for recovery systems for all types of ship	2010 2011	MSC	DE		In progress		DE 54/23, section 7; MSC 81/25, paragraph 23.49.1

* It should be noted that some accepted outputs listed are contained in the High-level Action Plan for the 2010-2011 biennium. However, taking into account resolution A.1013(26), they have been moved to the post-biennial agenda as work on them is not envisaged to commence in this biennium.

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2010-2011	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
5.1.1.7	Non-mandatory instruments: safety provisions applicable to tenders operating from passenger ships	2011	MSC	DE	FP, COMSAR, NAV, SLF, and STW	In progress		DE 54/23, section 8; MSC 84/24, paragraph 22.50
5.1.1.8	Non-mandatory instruments: guidance on alternative arrangements for the bottom inspection requirements for passenger ships other than ro-ro passenger ships	2010 (DE) 2010 (MSC)	MSC	DE		Completed Completed		DE 53/26, section 12; MSC 84/24, paragraph 22.52
5.1.1.10	Non-mandatory instruments: guidelines for a visible element to general alarm systems on passenger ships	2012	MSC	DE	FP	In progress		DE 54/23, section 9; MSC 86/26, paragraph 23.35
5.1.2.1	Measures to prevent accidents with lifeboats Making the provisions of MSC.1/Circ.1206/Rev.1 mandatory	2010 2011	MSC	DE	FSI NAV STW	In progress		DE 53/26, section 3; MSC 74/24, paragraph 21.34
5.1.2.1	Measures to prevent accidents with lifeboats Guidelines for standardization of lifeboat control arrangements	2010 2011	MSC	DE	FSI NAV STW	In progress		DE 53/26, section 3; MSC 74/24, paragraph 21.34
5.1.2.2	Guidance on compatibility of life-saving appliances	2010 (DE) 2010 (MSC)	MSC	DE		Completed Completed		DE 53/26, section 15; MSC 78/26, paragraph 24.37.1
5.1.2.4	Development of a new framework of requirements for life-saving appliances	2012	MSC	DE		In progress		DE 54/23, section 10; MSC 82/24, paragraph 21.49

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2010-2011	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
5.2.1.1	Mandatory instruments: amendments to resolution A.744(18)	2010 2011	MSC	DE		In progress		DE 54/23, section 11
5.2.1.8	Non-mandatory instruments: supporting guidelines for cargo oil tank coating and corrosion protection	2010 2011	MSC	DE		In progress		DE 53/26, section 7; MSC 82/24, paragraphs 21.51 and 23.12
5.2.1.13	Mandatory instruments: development of safety objectives and functional requirements of the Guidelines on alternative design and arrangements for SOLAS chapters II-1 and III	2011	MSC	DE		Postponed		MSC 84/24, paragraphs 3.92 and 21.52
5.2.1.14	Mandatory instruments: amendments to the LSA Code for thermal performance of immersion suits	2010 2012	MSC	DE		In progress		DE 54/23, section 12; MSC 84/24, paragraph 22.48
5.2.1.15	Mandatory instruments: amendments to the LSA Code for free-fall lifeboats with float-free capabilities	1 session	MSC	DE		Postponed		MSC 76/23, paragraphs 20.41.3 and 20.48; DE 47/25, paragraph 19.2
5.2.1.19	Mandatory instruments: development of a mandatory Code of for ships operating in polar waters	2012	MSC	DE		In progress		DE 54/23, section 13; MSC 86/26, paragraph 23.32
5.2.1.24	Non-mandatory instruments: revision of resolution A.760(18)	2010 2011	MSC	DE		In progress		DE 53/26, section 5; DE 46/32, paragraph 31.23

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the H LAP for 2010-2011	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
5.2.1.26	Non-mandatory instruments: protection against noise on board ships	2010 2011	MSC	DE		In progress		DE 54/23, section 14; MSC 83/28, paragraph 25.41
5.2.1.27	Non-mandatory instruments: amendments to the Revised recommendation on testing of life-saving appliances	2010	MSC	DE		Completed		DE 54/23, section 15; MSC 84/24, paragraph 22.49
5.2.1.28	Non-mandatory instruments: classification of offshore industry vessels and consideration of the need for a code for offshore construction support vessels	2010 2011	MSC	DE		In progress		DE 53/26, section 15; MSC 85/26, paragraph 23.27
5.2.1.32	Non-mandatory instrument: Development of guidelines for use of Fibre Reinforced Plastic (FRP) within ship structures	2013	MSC	DE	FP	Postponed		MSC 87/26, paragraph 24.31
5.3.1.1	Amendments to the Guidelines on the enhanced programme of inspections during surveys of bulk carriers and oil tankers (resolution A.744(18))	2010 2011	MSC	DE		In progress		DE 54/23, section 11
7.1.2.27	Test standards for type approval of add-on equipment	2011	MEPC	DE		Completed		DE 54/23, section 16; MEPC 59/24, paragraph 20.20
7.1.2.28	Measures to promote integrated bilge water treatment systems	2011	MEPC	DE		In progress		DE 54/23, section 17; MEPC 59/24, paragraph 20.20

SUB-COMMITTEE ON SHIP DESIGN AND EQUIPMENT								
Planned output number in the HLAP for 2010-2011	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
7.1.2.29	Guidelines for a shipboard oil waste pollution prevention plan	2011	MEPC	DE		Completed		DE 54/23, section 18; MEPC 59/24, paragraphs 20.10 to 20.13 and 20.22
7.1.2.30	Manually operated alternatives in the event of pollution prevention equipment malfunctions	2011	MEPC	DE		Completed		DE 54/23, section 19; MEPC 59/24, paragraphs 10.29 to 10.31 and 20.21