

SUB-COMMITTEE ON NAVIGATION,
COMMUNICATIONS AND SEARCH AND
RESCUE

6th session

Agenda items 9, 11, 12, 15 and 19

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**UPDATING OF THE GMDSS MASTER PLAN AND GUIDELINES ON MSI (MARITIME
SAFETY INFORMATION) PROVISIONS**

**REVISION OF SOLAS CHAPTERS III AND IV FOR MODERNIZATION OF THE GLOBAL
MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS), INCLUDING RELATED AND
CONSEQUENTIAL AMENDMENTS TO OTHER EXISTING INSTRUMENTS**

**RESPONSE TO MATTERS RELATED TO THE RADIOCOMMUNICATION ITU-R STUDY
GROUP AND ITU WORLD RADIOCOMMUNICATION CONFERENCE**

**REVISED PERFORMANCE STANDARDS FOR EPIRBs OPERATING ON 406 MHZ
(RESOLUTION A.810(19)) TO INCLUDE COSPAS-SARSAT MEOSAR AND SECOND
GENERATION BEACONS**

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

Report of the Communications Working Group

GENERAL

1 The Communications Working Group, chaired by Mr. A. Schwarz (Germany), met from 17 to 24 January 2019.

2 The Group was attended by delegates from the following Member States:

ALGERIA
AUSTRALIA
BAHAMAS
BELGIUM
BRAZIL
CANADA
CHINA
CROATIA
CYPRUS
DENMARK

EGYPT
ESTONIA
FINLAND
FRANCE
GERMANY
GHANA
GEORGIA
GREECE
ICELAND
INDONESIA

IRAN (ISLAMIC REPUBLIC OF)	POLAND
IRELAND	PORTUGAL
ITALY	REPUBLIC OF KOREA
JAMAICA	ROMANIA
JAPAN	RUSSIAN FEDERATION
LATVIA	SINGAPORE
LIBERIA	SOUTH AFRICA
MALTA	SPAIN
MARSHALL ISLANDS	SWEDEN
MEXICO	THAILAND
MOROCCO	TURKEY
NETHERLANDS	UKRAINE
NEW ZEALAND	UNITED ARAB EMIRATES
NIGERIA	UNITED REPUBLIC OF TANZANIA
NORWAY	UNITED KINGDOM
PANAMA	UNITED STATES
PERU	
PHILIPPINES	

by representatives from the following United Nations and specialized agencies:

INTERNATIONAL TELECOMMUNICATION UNION (ITU)
WORLD METEOROLOGICAL ORGANIZATION (WMO)

by observers from the following intergovernmental organizations:

INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
EUROPEAN COMMISSION (EC)
LEAGUE OF ARAB STATES
INTERNATIONAL COSPAS-SARSAT PROGRAMME AGREEMENT
(COSPAS-SARSAT)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)

and by observers from the following non-governmental organizations:

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND
LIGHTHOUSE AUTHORITIES (IALA)
COMITÉ INTERNATIONAL RADIO-MARITIME (CIRM)
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
INTERNATIONAL ASSOCIATION OF MARITIME UNIVERSITIES (IAMU)
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
THE NAUTICAL INSTITUTE (NI)

TERMS OF REFERENCE

3 Taking into account decisions of, and comments and proposals made in plenary, the Group was instructed to:

Agenda item 9 - UPDATING OF THE GMDSS MASTER PLAN AND GUIDELINES ON MSI (MARITIME SAFETY INFORMATION) PROVISIONS

- .1 consider the matter of monitoring MSI broadcasts over different satellite systems, taking into account document NCSR 6/9/1, and advise the Sub-Committee, as appropriate;
- .2 consider the proposed amendments to the International SafetyNET Manual (MSC.1/Circ.1364/Rev.1), as set out in annexes 1 and 2 to document NCSR 6/9/2, and prepare draft amendments to MSC.1/Circ.1364/Rev.1, as appropriate, including the necessary amendments related to the deletion of the 12 months' notification requirement, for approval by the Sub-Committee;
- .3 consider the proposed supplementary information on Fleet Safety for inclusion in the International SafetyNET Manual, as set out in the annex to document NCSR 6/9/6, and prepare a draft MSC circular with the aim to circulate the information as interim guidance pending inclusion of it in the Manual, for approval by the Sub-Committee;
- .4 consider the draft amendments to resolution A.705(17), as amended, on *Promulgation of maritime safety information*, as set out in the annex to document NCSR 6/9/3, taking into account document NCSR 6/9/12, as appropriate, and prepare a draft MSC resolution containing the necessary amendments to this resolution for approval by the Sub-Committee;
- .5 consider the draft amendments to resolution A.706(17), as amended, on *IMO/IHO World-Wide Navigational Warning Service guidance document*, as set out in the annex to document NCSR 6/9/4, taking into account document NCSR 6/9/12, as appropriate, and prepare a draft MSC resolution containing the necessary amendments to this resolution for approval by the Sub-Committee; and
- .6 consider the draft amendments to resolution A.1051(27) on *IMO/WMO Worldwide Met-Ocean Information and Warning Service guidance document*, as set out in the annex to document NCSR 6/9/5, taking into account documents NCSR 6/9/11 and NCSR 6/9/12, as appropriate, and prepare a draft MSC resolution containing the necessary amendments to this resolution for approval by the Sub-Committee;

Agenda item 11 - REVISION OF SOLAS CHAPTERS III AND IV FOR MODERNIZATION OF THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS), INCLUDING RELATED AND CONSEQUENTIAL AMENDMENTS TO OTHER EXISTING INSTRUMENTS

- .7 consider the draft amendments to SOLAS chapters III and IV, as set out in the annex to document NCSR 6/11, taking into account documents NCSR 6/11/4, NCSR 6/11/5 and NCSR 6/12, as appropriate, and finalize the draft amendments to SOLAS chapters III and IV for approval by the Sub-Committee and future submission to the Committee;

- .8 consider any necessary actions by the HTW and SSE Sub-Committees in connection to the draft amendments to SOLAS chapters III and IV, including any consequential amendments to existing instruments, and advise the Sub-Committee, as appropriate;
- .9 consider the draft revisions or draft amendments to instruments related to the amendments to SOLAS chapter IV adopted by resolution MSC.436(99), as set out in appendices 6 to 10 of the annex to document NCSR 6/12, and advise the Sub-Committee, as appropriate;
- .10 consider the draft revisions or draft amendments to instruments related to the modernization of the GMDSS, as set out in appendices 9, and 11 to 16 of the annex to document NCSR 6/12 and in the annex of document NCSR 6/11/1, taking into account document NCSR 6/11/3, and prepare the draft circulars or resolutions containing the necessary revisions or draft amendments, as appropriate, for approval by the Sub-Committee and future submission to the Committee;
- .11 update the work plan for the review of existing instruments related to the modernization of the GMDSS, using appendix 19 of the annex to document NCSR 6/12 as the basis;
- .12 consider the need to re-establish the Correspondence Group on the Modernization of the GMDSS and, if so, prepare terms of reference for the Group; and
- .13 prepare relevant terms of reference for the Joint IMO/ITU Experts Group and the ICAO/IMO JWG in respect to the review of existing instruments related to the modernization of the GMDSS.

**Agenda item 12 - RESPONSE TO MATTERS RELATED TO THE
RADIOCOMMUNICATION ITU-R STUDY GROUP AND ITU WORLD
RADIOCOMMUNICATION CONFERENCE**

- .14 consider the draft IMO position on relevant WRC-19 agenda items, as set out in appendix 1 of the annex to document NCSR 6/12, taking into account document NCSR 6/12/4, and finalize the draft IMO position for approval by the Sub-Committee;
- .15 prepare amendments to Recommendation 316 (Rev.MOB-87) on *Use of ship earth stations within harbours and other waters under national jurisdiction* for approval by the Sub-Committee and subsequent submission to ITU;
- .16 during a combined meeting with the Navigation Working Group on Friday morning, 18 January, consider document NCSR 6/12/9, taking into account document NCSR 6/12/5, and provide comments and advice on a list of applications for group A and group B AMRD and information on whether these applications are conditional;
- .17 consider documents NCSR 6/12/5, NCSR 6/12/6 and NCSR 6/12/9 and, taking also into account the outcome of the combined meeting with the Navigation Working Group, finalize the draft liaison statement on Autonomous maritime radio devices and identities in the maritime mobile service to Working Party 5B, prepared by the Joint IMO/ITU Experts Group as given in appendix 4 of the annex to document NCSR 6/12;

- .18 consider document NCSR 6/12/1 containing the liaison statement from Working Party 5B on Protection criteria for aeronautical and maritime systems and prepare a liaison statement to WP 5B, as appropriate; and
- .19 prepare draft terms of reference for the fifteenth meeting of the Joint IMO/ITU Experts Group, scheduled to take place during the week of 8 to 12 July 2019, and advise on the number of days required for the meeting.

Agenda item 15 - REVISED PERFORMANCE STANDARDS FOR EPIRBs OPERATING ON 406 MHz (RESOLUTION A.810(19)) TO INCLUDE COSPAS-SARSAT MEOSAR AND SECOND GENERATION BEACONS

- .20 consider the proposed revision to resolution A.810(19) on *Performance standards for float-free satellite emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz*, as set out in the annex to document NCSR 6/15, and finalize the draft resolution containing the necessary amendments to, or revision of, resolution A.810(19) for approval by the Sub-Committee; and
- .21 consider the consequential amendments to Recommendation ITU-RM.633-4 on *Transmission characteristics of a satellite emergency position-indicating radio beacon (satellite EPIRB) system operating through a satellite system in the 406 MHz band*, as set out in appendix 2 of the annex to document NCSR 6/12 and finalize the draft consequential amendments to Recommendation ITU-R M.633-4 for approval by the Sub-Committee and subsequent submission to ITU-R Working Party 4C after the revised performance standards for EPIRBs have been adopted.

Agenda item 19 - UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT-RELATED CONVENTIONS

- .22 consider document NCSR 6/19/1 containing a unified interpretation of resolution MSC.149(77) relating to battery validity dates for survival craft portable two-way VHF radios, and advise the Sub-Committee, as appropriate; and
- .23 submit a report on Thursday, 24 January 2019.

Updating of the GMDSS master plan and guidelines on MSI (Maritime Safety Information) provisions – agenda item 9

EGC broadcasts monitoring

4 The Group considered the matter of monitoring EGC broadcasts over different satellite systems and noted a number of issues that should be addressed for an overall monitoring, as set out in annex 1.

5 In this regard, the Group agreed that Member States and international organizations should be invited to submit proposals at a future session to address the monitoring issues of EGC messages in a multi-provider environment.

International SafetyNET Manual

6 The Group reviewed the International SafetyNET Coordinating Panel Terms of Reference and Authorization and Certification Process in order to finalize amendments to the *International SafetyNET Manual* (MSC.1/Circ.1364/Rev.1).

7 In revising the International SafetyNET Manual, the Group agreed that the following issues, as identified in square brackets, required further consideration:

- .1 the name of the Panel, which would start with "IMO"; and
- .2 the certification process, in particular, whether an information provider should be issued with one Certificate of Authorization per recognized satellite service provider for information broadcasting or with one Certificate of Authorization valid for all recognized satellite service providers, as set out in paragraphs 2.1, 2.2 and 3.1 of appendix 2 to the annex to annex 2.

8 Furthermore, the Group noted the concerns expressed by the observer from IMSO that said Organization should be included within the list of entities to which the master list of registered information providers is circulated, as set out in paragraphs 2.1 and 2.2 of appendix 2 to the annex to annex 2.

9 The Group agreed on the draft Revised International SafetyNET Manual, and the associated draft MSC circular, except for the unresolved issues referred to in paragraph 7 above, as set out in annex 2.

Draft interim guidance on the technical requirements for Fleet Safety

10 The Group considered supplementary information on Fleet Safety for inclusion in the International SafetyNET Manual and prepared an interim guidance pending its inclusion in the Revised International SafetyNET Manual.

11 In this connection, having agreed that specifications for equipment installation should not be addressed in draft COMSAR/Circ.32 (under review as part of the amendments consequential to the modernization of the GMDSS), the Group agreed to the draft interim guidance on the technical requirements for Fleet Safety, including its installation specifications, and the associated draft MSC circular, as set out in annex 3.

Amendments to Recommendation on promulgation of Maritime Safety Information

12 The Group considered draft amendments to *Recommendation on promulgation of Maritime Safety Information* (resolution A.705(17), as amended), and the associated draft MSC resolution.

13 In this regard, the Group discussed in length whether or not SAR-related information should formally be part of the NAVTEX broadcast messages and it was noted that there might not be a common understanding of whether the term "distress traffic" included SAR-related information.

14 As a consequence, the Group agreed to keep the phrase "Search and Rescue related information" in square brackets in the definition of "International NAVTEX service" in draft SOLAS regulation IV/2.1.11.

15 Following the discussion, the Group agreed to the draft Revised recommendation on promulgation of Maritime Safety Information, as set out in annex 4, except for the name of the "IMO International Enhanced Group Call Coordinating Panel" in paragraph 6.5 of the draft Revised recommendation (see paragraph 7.1 above).

Amendments to World-Wide Navigational Warning Service

16 The Group considered draft amendments to *World-Wide Navigational Warning Service* (resolution A.706(17), as amended), and the associated draft MSC resolution.

17 Following consideration, the Group agreed to the draft Revised IMO/IHO Worldwide Navigational Warning Service guidance document, as set out in annex 5, except for the name of the "IMO International Enhanced Group Call Coordinating Panel" in paragraphs 3.2.2.2 and 7.4 of the draft Revised guidance document (see paragraph 7.1 above).

Amendments to IMO/WMO worldwide met-ocean information and warning service – Guidance Document

18 The Group considered draft amendments to *IMO/WMO worldwide met-ocean information and warning service – Guidance Document* (resolution A.1051(27)), and the associated draft MSC resolution.

19 Following consideration, the Group agreed to the draft Revised IMO/WMO World-Wide Met-Ocean information and Warning Service – guidance document, as set out in annex 6, except for the name of the "IMO International Enhanced Group Call Coordinating Panel" in paragraphs 3.2.2.2 and 8.4 of the draft Revised guidance document (see paragraph 7.1 above).

Revision of SOLAS chapters III and IV for modernization of the Global Maritime Distress and Safety System (GMDSS), including related and consequential amendments to other existing instruments – agenda item 11

Draft amendments to SOLAS chapters III and IV

20 The Group considered the draft amendments to SOLAS chapters III and IV, with a view to finalization at this session.

21 Following detailed consideration of the draft amendments, the Group agreed:

- .1 that any amendments to the Radio Regulations consequential to the amendments to SOLAS chapters III and IV adopted by the Organization could be considered by a World Radiocommunication Conference;
- .2 that the definition of EGC should include the use of this system for SAR functions, taking into account that the corresponding satellite service provider should broadcast any relevant SAR related information in all the areas concerned;
- .3 to include the conjunction "or" in regulation IV/3.2 (Exemptions), to connect sub-paragraphs .1 and .2 on the conditions to grant exemptions;

- .4 to include a new text for regulation IV/7.1.4 relating to the reception of MSI and SAR related information. In this connection, the concerns raised by the delegation of Norway about the stiffness of this provision were noted by the Group;
- .5 to use the terminology "recognized mobile satellite service ship earth station" in regulations IV/9.3.2, IV/10.1 and IV/12.4, and in the corresponding records of certificates, as provided in resolution MSC.436(99);
- .6 that the remaining work concerning the draft amendments to SOLAS chapters III and IV should focus on the following unresolved issues identified in square brackets:
 - .1 inclusion of the phrase "Search and Rescue related information" in the definition of "International NAVTEX service" in draft SOLAS regulation IV/2.1.11 (see paragraph 14);
 - .2 regulation IV/3.3 on submission to the Organization of exemptions granted by Contracting Governments. In this connection, the Group further agreed on the need for legal advice to be provided by the Secretariat on whether the requirement to give reasons for granting exemptions should be included in the referred regulation;
 - .3 inclusion of a new requirement in regulation IV/5 for Contracting Governments to provide notice to the Organization of any withdrawal of a terrestrial radiocommunication service;
 - .4 relocation of provisions on radiocommunication equipment for survival craft transferred from regulation III/6 to regulation IV/7 should not impact the original intent of the carriage requirements;
 - .5 regulation IV/10.1.3.3, where the main and secondary means for distress alerts can be ship earth stations operating in the same satellite service; and
 - .6 a provision in regulation IV/18 (Position-updating) to address the manual update of the ship's position if the automatic update was temporarily unavailable; and
- .7 that, in addition to the remaining work identified above, all footnotes in chapter IV needed revision.

22 In light of the aforementioned, the Group concurred that the draft amendments to SOLAS chapters III and IV set out in annex 7, other than the remaining work identified in paragraphs 21.5 and 21.6, could be agreed in principle by the Sub-Committee.

Actions by the HTW and SSE Sub-Committees

23 The Group considered any necessary actions by the HTW and SSE Sub-Committees in connection to the draft amendments to SOLAS chapters III and IV, including any consequential amendments to existing instruments.

24 Concerning any necessary actions by the SSE Sub-Committee, having recalled that the Secretariat had submitted document SSE 6/17/2 to SSE 6, providing information on the draft amendments to SOLAS chapters III and IV and, in particular, the intended relocation of the provisions of SOLAS regulation III/6.2 under SOLAS chapter IV, the Group agreed that:

- .1 in general, any actions agreed by the Sub-Committee in this regard should only be noted by the SSE Sub-Committee; and
- .2 advice should be sought from the SSE Sub-Committee with regard to any impact on the carriage requirements that could emanate from the provisions relocated from chapter III to chapter IV, in particular, regulations IV/7.2, IV/7.3 and IV/7.4, taking into account the decisions made by NCSR 4 (NCSR 4/29, paragraph 12.37 and annex 11).

25 With regard to the HTW Sub-Committee, the Group noted that:

- .1 minor amendments to section B-I/12 of the STCW Code should be considered with regard to the references to "INMARSAT"; and
- .2 any actions required with regard to training should be referred to the HTW Sub-Committee following consideration by the Sub-Committee when the modernization of the GMDSS was finalized.

Consequential amendments to existing instruments due to the amendments to SOLAS chapters III and IV

26 The Group, due to time constraints, could only consider a draft recommendation on performance standards for shipborne MF and MF/HF radio installations, together with the associated draft MSC resolution, as set out in document NCSR 6/11/1. Furthermore, the remaining consequential amendments were referred to the Correspondence Group to be established (see paragraph 48).

27 During the discussion, the Group highlighted that the draft performance standards should:

- .1 address the reception of HF MSI in accordance with the carriage requirements provided in SOLAS chapter IV; and
- .2 be met by means of technology neutral provisions.

28 Having noted that this draft recommendation required additional work, the Group agreed that performance standards for both MF and MF/HF installations should be encompassed in one instrument, as set out in annex 8.

Work plan for the review of existing instruments related to the amendments to SOLAS chapters III and IV

29 The Group updated the work plan in line with the progress made at this session, as set out in annex 9.

30 In this connection, the Group agreed to include in the draft work plan the following tasks to be conducted as a consequence of the amendments to SOLAS chapters III and IV:

- .1 review of the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code), as amended; the 1989 MODU Code, as amended; and the 1979 MODU Code, as amended;
- .2 review of the International Code for Ships Operating in Polar Waters; and
- .3 review/amendment by the Secretariat of the preambular paragraphs of any resolutions consequentially amended.

Response to matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference – agenda item 12

Draft IMO position on relevant WRC-19 agenda items and amendments to Recommendation 316 (Rev.MOB-87)

31 The Group considered the draft IMO position on relevant WRC-19 agenda items, including document NCSR 6/12/4 and amendments proposed by the observer from ITU on Recommendation 316 (Rev.MOB-87).

32 In considering the inclusion of items in the agenda for future WRCs, in particular the proposal in document NCSR 6/12/4, the Group identified a number of issues that required further development with regards to:

- .1 digitalization of voice communications in the VHF maritime mobile band; and
- .2 VDES R-Mode using signals independent of GNSS to support resilient position, navigation and timing.

33 Subsequently, the Group recognized that the aforementioned matters were not mature enough for inclusion in the agenda for WRC-23 and requested IALA to keep IMO informed of the progress made.

34 With regard to Recommendation 316 (Rev.MOB-87), having noted that any frequency bands to be included have to be allocated to radiocommunication services rather than systems, the Group was of the view that amendments on following matters were required:

- .1 old references should be updated;
- .2 frequency bands for both the maritime mobile-satellite service (ITU-R Radio Regulations, article 5) and GMDSS services (ITU-R Radio Regulations, appendix 15) should be addressed independently; and
- .3 Administrations should protect the operation of GMDSS Ship Earth Stations in harbours and other internal waters.

35 In light of the foregoing, the Group:

- .1 highlighted the need to amend Recommendation 316 (Rev.MOB-87) in the draft IMO position; and

- .2 agreed to the draft IMO position on WRC-19 agenda items concerning matters relating to maritime services, as set out in annex 10.

List of applications for group A and group B AMRD

36 The Navigation Working Group and the Communications Working Group met on Friday, 18 January to consider the list of applications for group A and group B AMRD and whether these applications could be conditional.

37 During its consideration, the Groups agreed that:

- .1 IMO should provide advice to ITU-R WP 5B on the categorization of group A and group B AMRD; and
- .2 the definition for AMRD, as set out by ITU-R WP 5B in the Working Document towards a preliminary draft new recommendation ITU-R M.[AMRD], was suitable to protect the GMDSS.

38 In light of the aforementioned, the Groups advised that:

- .1 the diagram on "AMRD FAMILY" set out in the annex to the annex to document NCSR 6/12/9, as provided by ITU-R WP 5B, satisfied the need for a proper categorization in the context of navigational and radiocommunication safety;
- .2 Administrations should be entitled to upgrade AMRD from group B to group A under certain conditions and circumstances; and
- .3 in order to minimize confusion of seafarers on the identification of upgraded AMRD, guidance on harmonized criteria for Administrations to upgrade group B AMRD to group A, as foreseen in the diagram "AMRD FAMILY" should be developed by the Organization, preferably before any amendments to the Radio Regulations adopted by WRC-19 enter into force.

Draft liaison statements to ITU-R Working Party 5B

39 Following the conclusions reached in paragraphs 37 and 38 above, the Group finalized a draft liaison statement on autonomous maritime radio devices and identities in the maritime mobile service, as set out in annex 11, for submission to ITU-R WP 5B, which addressed, in particular:

- .1 a list of applications for group A and group B AMRD;
- .2 identities in the maritime mobile service and the consequential revision of Recommendation ITU-R M.585-7, including the need to:
 - .1 avoid ambiguity in the numbering scheme, e.g. for class M MOB devices; and
 - .2 allocate a distinct number identity to MAtON; and
- .3 the problem related to freeform numbering of location aid devices (AIS-SART, MOB, EPIRB-AIS).

40 The Group also prepared a draft liaison statement on protection criteria for aeronautical and maritime systems for submission to ITU-R WP 5B, as set out in annex 12.

Revised performance standards for EPIRBS operating on 406 MHz (Resolution A.810(19)) to include Cospas-Sarsat MEOSAR and second generation beacons – agenda item 15

Performance standards for float-free EPIRBs (resolution A.810(19), as amended)

41 The Group considered a complete revision of the *Performance standards for float-free satellite emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz* (resolution A.810(19)).

42 Following consideration, having noted that provisions on battery validity dates for EPIRBs should be addressed when considering amendments to both MSC/Circ.1039 and MSC/Circ.1040 as part of the amendments consequential to the modernization of the GMDSS, the Group agreed on draft Performance standards for float free emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz, and the associated draft MSC resolution, as set out in annex 13, in particular:

- .1 to consolidate performance standards and type approval provisions in one instrument;
- .2 that provisions on the return link service did not need to be specified in the performance standards;
- .3 that the 121.5 MHz homing signal transmitting duty cycle should not be less than 50%;
- .4 that these new performance standards should be addressed by means of a new MSC resolution; and
- .5 on the application provisions of the new performance standards.

43 Furthermore, the Group was of the view that the Maritime Safety Committee should be invited to explore the possibility of adopting revised versions of resolutions by adding "Rev.Xx" and keeping the original notation in order to facilitate traceability.

Consequential amendments to Recommendation ITU-R M.633-4

44 As a result of the new draft performance standards for float-free emergency position-indicating radio beacons (EPIRBs), the Group considered consequential amendments to Recommendation ITU-R M.633-4.

45 In this context, after a lengthy discussion, the Group noted that consequential changes that might be required in ITU related documents might be far-reaching and not restricted to Recommendation ITU-R M.633-4 only.

46 In this connection, the Group prepared a draft liaison statement on transmission characteristics of Emergency Position-Indicating Radio Beacon (EPIRB) for submission to ITU-R WPs 4C and 5B, as set out in annex 14.

Draft terms of reference for the fifteenth meeting of the Joint IMO/ITU Experts Group

47 The Group agreed on the draft terms of reference for the fifteenth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters and advised that five days were required for the meeting, as set out in annex 15.

Establishment of a correspondence group

48 The Group, taking into account the progress made at this session, recommended that the Correspondence Group on the Modernization of the GMDSS be re-established, under the coordination of the United States,* with terms of reference set out in annex 16.

Unified interpretation of provisions of IMO safety, security, and environment-related Conventions – agenda item 19

49 Due to time constraints, the Group did not consider document NCSR 6/19/1 containing a unified interpretation relating to battery validity dates for survival craft portable two-way VHF radios.

Action requested of the Sub-Committee

50 The Sub-Committee is invited to approve the report in general and, in particular, to:

- .1 invite Member States and international organizations to submit proposals at a future session to address the issues related to the monitoring of EGC messages in a multi-provider environment (paragraphs 21.5 and 21.6; and annex 1);
- .2 consider the unresolved issues related to the name of the Coordinating Panel and the certification process provided in the draft Revised International SafetyNET Manual, and decide as appropriate (paragraph 7 and annex 2);
- .3 agree to the draft Revised International SafetyNET Manual, and the associated draft MSC circular, with a view to approval by MSC 101 (paragraph 9 and annex 2);
- .4 agree to the draft interim guidance on the technical requirements for Fleet Safety, and the associated draft MSC circular, with a view to approval by MSC 101 (paragraph 11 and annex 3);
- .5 approve the draft Revised recommendation on promulgation of Maritime Safety Information, and the associated draft MSC resolution, with a view to adoption by MSC 101 (paragraph 15 and annex 4);

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Coordinator:

Mr. Robert L. Markle
Markle Marine Safety Services
206 Johnston Farm Lane
Woodstock, GA 30188
United States
Tel./Text: +1 703 283-2266
Email: bob@markle.com

- .6 approve the draft Revised IMO/IHO Worldwide Navigational Warning Service guidance document, and the associated draft MSC resolution, with a view to adoption by MSC 101 (paragraph 17 and annex 5);
- .7 approve the draft Revised IMO/WMO World-Wide Met-Ocean information and Warning Service – guidance document, and the associated draft MSC resolution, with a view to adoption by MSC 101 (paragraph 19 and annex 6);
- .8 endorse the agreement of the Group that the remaining work concerning the draft amendments to SOLAS chapters III and IV should focus on unresolved issues identified in square brackets and the revision of all footnotes in SOLAS chapter IV (paragraphs 21.5 and 21.6, and annex 7);
- .9 agree, in principle, to the draft amendments to SOLAS chapters III and IV, other than the remaining work identified in paragraphs 19.5 and 19.6 (paragraph 22 and annex 7);
- .10 endorse the agreement of the Group with regard to the actions by the SSE Sub-Committee in connection with the draft amendments to SOLAS chapters III and IV, including any consequential amendments to existing instruments (paragraph 24);
- .11 note the consideration by the Group with regard to the actions by the HTW Sub-Committee in connection with the draft amendments to SOLAS chapters III and IV, including any consequential amendments to existing instruments (paragraph 25);
- .12 endorse the agreement of the Group that performance standards for both MF and MF/HF installations should be combined in one instrument (paragraph 28 and annex 8);
- .13 note the progress made by the Group on the consequential amendments to existing instruments related to the amendments to SOLAS chapters III and IV (paragraphs 26 to 28 and annex 8);
- .14 endorse the updated draft work plan for the review of existing instruments related to the amendments to SOLAS chapters III and IV (paragraphs 29 and 30 and annex 9);
- .15 approve the draft IMO position on WRC-19 agenda items concerning matters relating to maritime services (paragraphs 31 to 35 and annex 10);
- .16 approve the draft liaison statement to ITU-R WP 5B on autonomous maritime radio devices and identities in the maritime mobile service, and request the Secretariat to convey it to ITU (paragraphs 36 to 39 and annex 11);
- .17 approve the draft liaison statement to ITU-R WP 5B on protection criteria for aeronautical and maritime systems, and request the Secretariat to convey it to ITU (paragraph 40 and annex 12);
- .18 approve the draft Performance standards for float free emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz, and the associated draft MSC resolution, with a view to adoption by MSC 101 (paragraphs 41 and 42 and annex 13);

- .19 invite the Maritime Safety Committee to explore the possibility of adopting revised versions of resolutions by adding "Rev.Xx" to the original notation in order to facilitate traceability (paragraph 43);
- .20 approve the draft liaison statement to ITU-R WPs 4C and 5B on transmission characteristics of Emergency Position-Indicating Radio Beacon (EPIRB), and request the Secretariat to convey it to ITU (paragraphs 44 to 46 and annex 14);
- .21 approve the draft terms of reference for the 15th meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters and agree with the advice by the Group that five days were required for the meeting (paragraph 47 and annex 15);
- .22 endorse the re-establishment of the Correspondence Group on the Modernization of the GMDSS, under the coordination of United States, and approve its terms of reference (paragraph 48 and annex 16); and
- .23 note that, due to time constraints, the Group did not consider document NCSR 6/19/1 containing a unified interpretation relating to battery validity dates for survival craft portable two-way VHF radios.

ANNEX 1

MONITORING ~~MSI~~EGC BROADCASTS (English only)

1 Document NCSR 6/9/1 provides the outcome of the tenth session of the IHO World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC), which noted the matter of monitoring ~~MSI~~EGC broadcast in a multi-provider environment and the development of multiple system capable terminals.

2 In the context of the above document, Recognized Mobile Satellite Service (RMSS) providers and EGC information providers (NAV, MET, SAR and ICE) will be used.

3 Issues identified in relation to the monitoring of ~~MSI~~EGC broadcasts:

Multi-provider environment

4 Potentially jeopardizes ~~MSI~~EGC information provider participation.

Multi-provider broadcasting

5 Would require RMSS providers to offer multi interface solutions (Email, web interface and a common data interface standard). In this context, EGC information providers would utilize a common data interface standard. IMO/IHO/WMO will regulate development of common data interface standard.

6 Establishment and operational cost make a single point of distribution (NCSR 6/INF.3) undesirable.

7 A RMSS provider, an EGC information provider or others could acts as a single point of distribution (Earlier discussions between current RMSS providers proved this to be inviable).

8 Continue as is with no change is a viable option.

Multi-provider terminal/receiver

9 A terminal with two or more radios/transceivers will have implications for cost, manufacturer risk, complexity and antenna interference. Furthermore, it limits scalability when additional satellite providers are introduced.

10 Continue as is with no change is a viable option.

Monitoring in a multi-provider environment

11 Where an EGC information provider is inside the coverage area of their broadcast, the continued use of transceivers/terminals at all information providers to validate EGC (current solution), will require multiple terminals, training and it is specific to the unique satellite coverage of the RMSS provider. This may also require manual intervention for message management.

12 Where an EGC information provider is outside the coverage area of their broadcast, RMSS providers to develop a service to indicate successful broadcast of information at the EGC receiver side.

13 RMSS providers to develop a service to indicate successful broadcast of information through a broadcast management system.

14 Use of a centralized reception for each RMSS provider, with a forward capability of the information broadcast to the originator for validation, may require one or more terminals. Furthermore, this would require changes to EGC guidance documentation and 24/7 support from a RMSS provider. Guidance for the forward capability to include a minimum time and relevant information criteria will be required.

Multi-satellite service providers double or triple etc. cost to the ~~MSI~~ EGC information provider

15 Adopt a centralized billing model with recognized mobile satellite service providers which distributes cost of world-wide MSI [and SAR related information] broadcast amongst all IMO Member States. (Burden sharing model)

16 Revision of resolution A.707(17) to state a fixed and common MSI cost structure.

17 Purchase, maintenance and upkeep of equipment.

Multi-satellite service providers increase operational workload to the ~~MSI~~ EGC information provider

18 Additional staff and training.

Considerations towards implementation

19 Revision of SafetyNet Manual will be submitted to NCSR 7.

20 Expected document of an interim operational Iridium [EGC] Manual will be submitted to MSC 101.

21 Expected document of a full operational Iridium [EGC] Manual will be submitted to NCSR 8.

22 Update of resolutions A.706(17), A.707(17), A.1001(25) and A.1051(27) required.

23 Update to the Joint IMO/IHO/ WMO Maritime Safety Information Manual required.

24 Update to the *Guidance on minimum communication needs of MRCC* (COMSAR/Circ.37) required.

Additional considerations

25 The agreement of the IHO/WMO/IMSO/ITU and the active participation of other bodies including the RMSS providers should be sought on these concepts.

ANNEX 2

DRAFT MSC.1/Circ.1364/Rev.2

REVISED INTERNATIONAL SAFETYNET MANUAL

1 The Maritime Safety Committee, at its [...] session, approved the *Revised international SafetyNET manual*, as set out in the annex, prepared by the Sub-Committee on Navigations Communications and Search and Rescue (NCSR) at its [sixth] session [(16 to 25 January 2019)].

2 Member States are invited to use the annexed revised Manual, as appropriate, and to bring it to the attention of all parties concerned.

3 Member States are also invited to note that the annexed revised Manual should become effective on [...].

4 This circular supersedes MSC.1/Circ.1364/Rev.1.

ANNEX

DRAFT REVISED INTERNATIONAL SAFETYNET MANUAL

(Non-amended text to be reproduced)

~~ANNEX~~ Appendix 1

~~IMO~~ International ~~SafetyNET~~ ~~[Enhanced Group Call]~~¹ Coordinating Panel~~]~~

1 Terms of reference

To coordinate the development and use of the International ~~Enhanced Group Call (EGC)~~ services ~~SafetyNET Service~~, and in particular to:

- .1 develop operating methods for the effective use of the ~~EGC services~~ ~~SafetyNET service~~, including consideration of the need for scheduled broadcasts;
- .2 develop documentation in support of the ~~EGC services~~ ~~SafetyNET service~~, in particular the ~~International SafetyNET Manual~~ IMO manuals of ~~the~~ recognized mobile satellite service providers;
- .3 advise ~~Land Earth Station (LES) operators~~ recognized mobile satellite service providers and potential registered information providers on all aspects of the ~~EGC services~~ ~~Service~~, including system access and effective operation;
- .4 develop criteria and establish means for the approval and registration of potential information providers to ensure ~~[optimal]~~ world-wide coverage is achieved and maintained;
- .5 coordinate the registration of potential information providers; and
- .6 promote a proper understanding of the benefits and use of the ~~International SafetyNET Service among~~ ~~EGC services amongst~~ the wider maritime community.

2 Contact address

The ~~IMO~~ International ~~SafetyNET~~ ~~Enhanced Group Call~~ Coordinating Panel~~]~~ can be contacted at the following address:

The Chair~~man~~
International ~~SafetyNET~~ ~~Enhanced Group Call~~ Coordinating Panel
International Maritime Organization
4 Albert Embankment
London SE1 7SR
United Kingdom
Telephone: +44 (0)20 7735 7611, Fax: +44 (0)20 7587 3210

¹ ~~Enhanced Group Call (EGC) means the broadcast of coordinated Maritime Safety Information [and Search and Rescue related information], to a defined geographical area using a recognized mobile satellite service.~~

Email: ncsr@imo.org (in subject line add: for Chair, [IMO International [SafetyNET](#) [Enhanced Group Call] Coordinating Panel])

3 Panel membership

3.1 The [IMO International [SafetyNET](#) [Enhanced Group Call] Coordinating Panel] is open to membership by all Member Governments and also includes one member nominated by each of the following international organizations:

- .1 International Maritime Organization (IMO)
- .2 ~~World Meteorological Organization (WMO)~~ International Hydrographic Organization (IHO)
- .3 ~~International Hydrographic Organization (IHO)~~ World Meteorological Organization (WMO)
- .4 International Mobile Satellite Organization (IMSO)

3.2 The following may be represented as observers on the panel:

- .1 IHO World-Wide Navigational Warning Service Sub-Committee
- .2 IMO NAVTEX Coordinating Panel
- .3 ~~World-Wide Met-Ocean Information and Warning Service Committee (WWMIWS-C) of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM). Expert Team on Maritime Safety Services (ETMSS) of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) WMO World-Wide Met-Ocean Information and Warning Service Committee~~
- .4 ~~Inmarsat plc~~ Single representative from each IMO recognized mobile satellite service provider

~~ANNEX~~ Appendix 2

Authorization, certification and registration of ~~SafetyNET~~ Enhanced ~~G~~roup ~~C~~all information providers

Two distinct and separate processes, Authorization and Certification, ~~should~~must be completed before an information provider will be granted Registration to access the ~~SafetyNET~~ the International Enhanced Group Call (EGC) service. They have been established to protect the integrity of the ~~SafetyNET~~ EGC information service and clearly establish a qualification to the special ~~SafetyNET~~ EGC tariff.

1 Authorization

1.1 Authorization is carried out by IMO in consultation with IHO and WMO as appropriate.

1.2 In order to obtain authorization to broadcast maritime safety information and/or search and rescue related information through the International ~~SafetyNET Service~~ Enhanced Group Call service, an information provider ~~should~~must apply to the relevant international organization for approval to participate in the internationally coordinated service:

Hydrographic authorities – to IHO;
Meteorological authorities – to WMO;
~~Hydrographic authorities – to IHO;~~
Search and rescue authorities – to IMO;
The International Ice Patrol – to IMO;
Others – to IMO.

1.3 In considering such applications, the relevant international organizations will take into account:

- .1 the established and expected availability of other information sources for the area concerned; and
- .2 the need to minimize duplication of information as much as possible.

1.4 The relevant international organization will inform IMO of endorsed applications.

2 Certification

2.1 On receipt of IMO authorization, the ~~IMO~~ International ~~SafetyNET~~ ~~Enhanced Group Call~~ Coordinating Panel will issue a Certificate of Authorization to ~~P~~articipate in the International ~~SafetyNET Service~~ Enhanced Group Call service directly to the information provider with a copy to IMO or IHO or WMO ~~or IMO~~, as well as to ~~Inmarsat C-LES operators~~ the all recognized mobile satellite service providers concerned. A specimen Certificate of Authorization is shown at the end of this ~~appendix~~annex.

2.2 ~~IMO~~ International ~~SafetyNET~~ ~~Enhanced Group Call~~ Coordinating Panel will maintain the master list of all registered information providers and circulate it to IMO, IHO and WMO Secretariats, and all the ~~Inmarsat C-LES operators~~ recognized mobile satellite service providers concerned.

3 Registration

3.1 After receiving a Certificate of Authorization, an information provider ~~may~~ ~~should~~ ~~shall~~ conclude an agreement with ~~any Inmarsat C-LES operator(s)~~ [all recognized mobile satellite service providers ~~concerned~~], serving the required ~~ocean region~~ sea area(s), to obtain access to the system.

3.2 This will involve, in addition to the contractual aspects, registration of the information provider's identity which ~~should~~ ~~must~~ be programmed into the LES control equipment of the recognized mobile satellite service provider.

3.3 ~~LES operators~~ Recognized mobile satellite service providers will only register information providers who have received a Certificate of Authorization from the [IMO International [Enhanced Group Call] Coordinating Panel].

4 Contact addresses

International Maritime Organization

The Chair ~~man~~

[IMO International SafetyNET [Enhanced Group Call] Coordinating Panel]

4 Albert Embankment

London SE1 7SR

United Kingdom

Telephone: +44 (0)20 7735 7611

Fax: +44 (0)20 7587 3210

Email: ncsr@imo.org (in subject line add: for Chair, IMO International SafetyNET Enhanced Group Call Coordinating Panel)

International Hydrographic Organization

4b quai Antoine 1er

BP445

MC98011 Monaco Cedex

Principauté de MONACO

Telephone: +377 93 10 81 00

Fax: +377 93 10 81 40

Email: info@iho.int

World Meteorological Organization

7bis, avenue de la Paix

Case postale 2300

CH-1211 Geneva 2

Switzerland

Telephone: + 41(0) 22 730 81 11

Fax: + 41(0) 22 730 81 81

Email: mmo@wmo.int

5 Sample Certificate of Authorization

[Sample to be developed, as appropriate]

4 Albert Embankment, London SE1 7SR United Kingdom	99 City Road, London EC1Y 1AX United Kingdom

[Name of authority/country]

Date: 01 Jan 2017

Certificate of Authorization to Participate as an Information Provider in the International SafetyNET Service

This is to certify that the [Name of authority/country] is authorized by the International Maritime Organization to provide navigational warning services for broadcast in the International SafetyNET Service in accordance with annex 2 of the International SafetyNET Manual.

PETER M. DOHERTY

Chairman

International SafetyNET Coordinating Panel

Certificate No.	"XX"
-----------------	------

International Maritime Organization (IMO)	International Mobile Satellite Organization (IMSO)
Telephone: National (207) 735-7611 International +44 (207) 735-7611 Facsimile +44 (207) 587-3210	Telephone: National (207) 728-1249 International +44 (207) 728-1249 Facsimile +44 (207) 728-1172

ANNEX 3

DRAFT MSC.1/Circ.[...]

INTERIM GUIDANCE ON THE TECHNICAL REQUIREMENTS FOR FLEET SAFETY

1 The Maritime Safety Committee (MSC), [at its one hundred and first session (5 to 14 June 2019)], approved *Interim Guidance on the Technical Requirements for Fleet Safety*, as set out in the annex, prepared by the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) at its [sixth] session (16 to 25 January 2019).

2 Member States are invited to use the annexed Interim Guidance until its inclusion in the *Revised International SafetyNET Manual* (MSC.1/Circ.1364), as may be revised, and to bring it to the attention of all parties concerned.

ANNEX

TECHNICAL REQUIREMENTS FOR FLEET SAFETY ENHANCED GROUP CALL RECEIVERS FOR SOLAS-COMPLIANT MOBILE EARTH STATIONS (MES)

1 **MSI** SafetyNET receivers for SOLAS installations

1.1 Background

The Global Maritime Distress and Safety System (GMDSS) is a radiocommunication system based on satellite and terrestrial technology, designed to improve communications relating to distress and safety of life at sea. It was adopted by the International Maritime Organization (IMO) in 1988, in the form of Amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974 and came into effect on 1 February 1992. Implementation was completed on 1 February 1999.

IMO's Maritime Safety Committee at its ninety-ninth session recognized the maritime mobile satellite service provided by the Inmarsat Fleet Safety Service for use in the GMDSS. Although Fleet Safety works globally, it is, as yet only recognized for use in the GMDSS in the coverage area under the Inmarsat-4 Middle East and Asia (MEAS) region satellite as shown in figure 1.

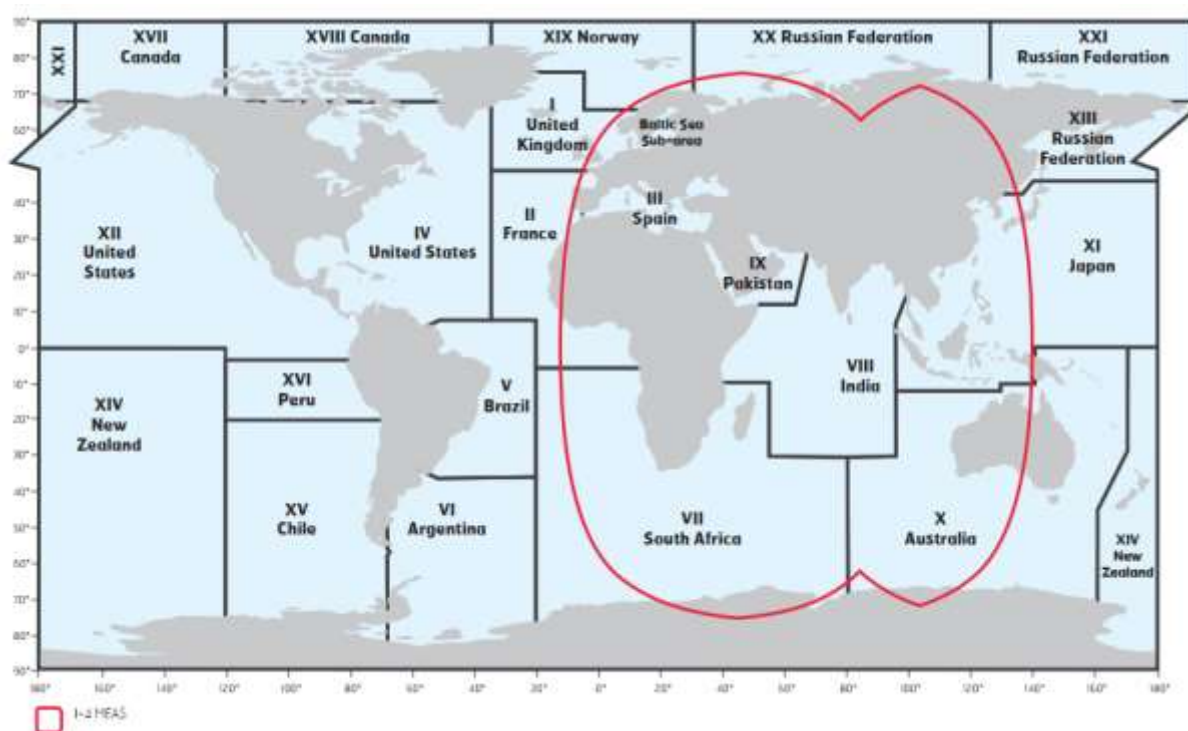


Figure 1 – Fleet Safety GMDSS approved area until Inmarsat 6 satellite constellation
deployed

It is the responsibility of national Administrations to determine whether a radio installation on board a ship meets the SOLAS requirements. This is done by national Type Acceptance or Approval testing of the sub-systems included in the installation and by inspection of the complete installation by a radio surveyor.

National Type Acceptance testing for SOLAS equipment is usually based on GMDSS specifications and procedures prepared by IMO and the International Electrotechnical Commission (IEC) on their behalf, although other national or regional specifications may be

invoked as well.

IMO and IEC documents, which are identified in section 1.2, do not only summarize the general requirements for GMDSS equipment, but also the special requirements for EGC receivers for use in SOLAS installations, as specified by IMO/IEC.

A number of the Inmarsat specifications have been completely revised to reflect the latest IMO/IEC requirements, for example, electromagnetic compatibility and environmental requirements.

1.2 Principal relevant documents

For Inmarsat Fleet Safety GMDSS compliant ship earth stations (SES) with MSI functions EGC capability, the principal relevant documents in addition to the Inmarsat Broadband Global Area Network (BGAN) System Definition Manual (SDM) are:

- .1 Performance Standards for Enhanced Group Call Equipment - Annex: Recommendation on Performance Standards for Enhanced Group Call Equipment, published by IMO as (resolution A.664(16), as amended).
- .2 Amendments to the Revised Performance Standards for Enhanced Group Call (EGC) equipment, published by IMO as (resolution MSC.431(98), as amended).
- .3 General Requirements for Shipborne Radio Equipment Forming Part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids, published by IMO as (resolution A.694(17)).
- .4 Performance standards for a Ship Earth Station for use in the GMDSS, published by IMO as (resolution MSC.434(98), as amended).
- .5 Shipborne Radio Equipment forming part of the Global Maritime Distress and Safety System and Marine Navigational Equipment, published by the IEC as IEC 60945 standard.
- .6 Global Maritime Distress and Safety System (GMDSS) – Part 4: Inmarsat-C Ship Earth Station and Inmarsat Enhanced Group Call Equipment – Operational and Performance Requirements, Methods of Testing and Required Test Results, published by the IEC as IEC 61097-4 standard.
- .7 Maritime Design and Installation Guidelines (DIGs), Annex B, issue 6 of April 2008 published by Inmarsat at: <http://www.inmarsat.com/Maritimesafety/DIGs.pdf>

2 Introduction

2.1 EGC (Enhanced Group Call)

Enhanced Group Calls is the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service. a message broadcast service transmitted over the Inmarsat communication system. The service Inmarsat SafetyNET (II) system allows terrestrial information providers to broadcast pass messages or data to an approved Inmarsat SES with EGC receivers through the Inmarsat SafetyNET (II) system.

2.2 EGC receiver

An EGC receiver is defined as a receiver function in the Maritime Safety Terminal (MST) connected to the FleetBroadband User Terminal (UT) via the MSTI interface (MSTI). This MST provides an MSI EGC capability in addition to ship to-ship and ship-to-shore messaging capabilities.

2.3 Inmarsat type approval

The Inmarsat BGAN SDM presents the technical requirements and recommendations for an MST receiver. These requirements should must be satisfied before the equipment can be utilized in the Inmarsat system. Procedures for type approval by Inmarsat of a manufacturer's design are provided in a complementary document, entitled, FleetBroadband Alpha Beta Testing, produced by Inmarsat.

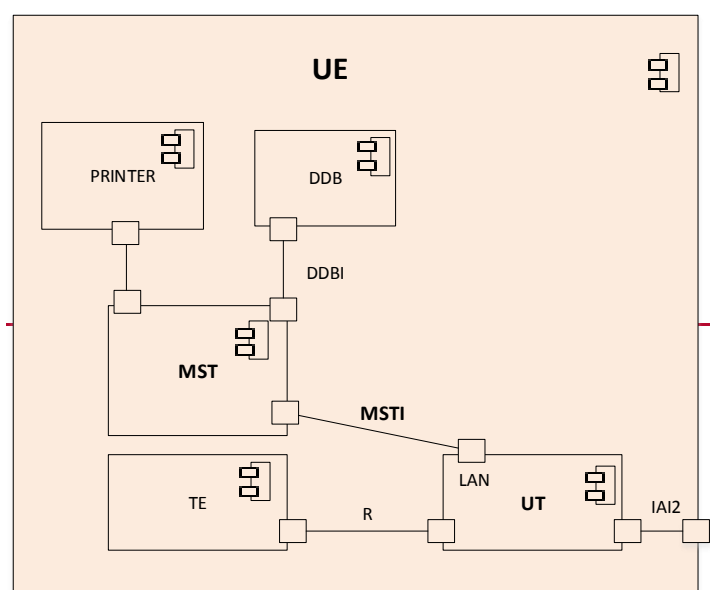


Figure 24 – Extended Architecture of a Fleet Safety GMDSS-compliant ship earth station (SES) with MSI functions the User Equipment (FleetBroadband Terminal)

3 General requirements

3.1 Mandatory capabilities

The mandatory capabilities of EGC receivers for SOLAS applications are:

- .1 continuous reception of broadcast channel and processing of the information according to the EGC message protocol;
- .2 automatic recognition of messages directed to fixed and defined absolute geographical areas and service codes as selected by the receiver operator or based upon input(s) from navigational equipment;
- .3 SafetyNET receivers which meet the requirements of IEC 61097-4 and IEC 60945 standard; and

- .4 where automatic updates are not available, provision is made for a visual indication if the ship's position has not been updated during the last 12 hours. It is only possible to reset this indication by revalidating the ship's position.

4 Broadcast channel selection

4.1 General

EGC receivers are a function of the ~~Maritime Safety Terminal~~ MST that is connected to a FleetBroadband terminal. FleetBroadband terminals UTs continuously permanently monitor the broadcast system information based on a for dynamic allocation of channel frequencies.

4.2 Global broadcast scanning

Automatic scanning of the system information and automated satellite selection is a mandatory feature of all ~~Fleet Safety user equipment~~ FleetBroadband User Terminal (UTs). In the event of loss of forward carrier connectivity from the satellite exceeding 30s, the UT attempts to retune to another satellite and re-establish the link to the ground automatically.

5 Message-processing requirements

5.1 General

Acceptance or rejection of the EGC service code types is under operator control, except that receivers always receive; navigational warnings; meteorological warnings and forecast; SAR related information and shore-to-ship distress alerts; directed to a fixed or defined absolute geographical area within which the receiver is situated. The user can also select additional areas, see 5.9 below.

5.2 Display devices

5.2.1 Message display

The display is capable of presenting at least 40 characters per line of text. The EGC receiver ensures that if a word cannot be accommodated in full on one line it is transferred to the next line.

5.2.2 Status display

The MST is able to ~~indicate~~ provide indication on the link status, (i.e. various level of connectivity to the Inmarsat network,) which could trigger alarms to the users.

5.3 Printer requirements

A printer is required for an ~~SOLAS~~ EGC receiver. Received EGC messages may be stored for later printing with an indication to the operator that the message has been received. However, distress or urgency priority calls are directly printed as well as stored. Means are also provided not to print or store the same ~~MSI~~ EGC message after it has been received error-free and printed.

Messages are not printed until completely received.

A local audible alarm is sounded to give advance warning of a printer "paper-low" condition.

All EGC SafetyNET messages are annotated with the date and time (UTC) of reception. This information is displayed or printed with the message.

5.4 Character codes

For the EGC service, the International Reference Version of the International Alphabet 5 (IA5), also known as ASCII (a standard alphanumerical character set based on 7-bit codes) is used.

5.5 Operator control

The following control functions and displays are provided as a minimum:

.1 selection of EGC carrier frequency:

For SOLAS SafetyNET receivers:

.2 means of inputting the following information:

- .1 mobile earth stations' (MES) MES's position coordinates;
- .2 current and planned (additional) NAVAREA(s)/METAREA(s);
- .3 current and planned coastal warning area (B1 Code); and
- .4 coastal warning subject indicator character (B2 Code).

Receivers are fitted with operator controls to allow the operator to select desired geographical areas and message categories. Details of the geographical areas and message categories which have been selected for reception by the operator are readily available.

5.6 MSI EGC receiver memory capacity requirements

The MSI EGC receiver should shall be capable of storing safety related activity and messages. Information stored should include:

- .1 Date/time of activity;
- .2 Activity type (message received, etc. plus priority);
- .3 Message/MSI header information;
- .4 Message/MSI size and contents;
- .5 Date/time of operator acknowledgement for received Distress and Urgency messages/MSI;
- .6 Date/time when operator read received messages/MSI (no date/time means not read); and
- .7 Message history.

The database can record at least 500 messages (received/MSI) of average 500 characters (printable and non-printable). It is not should not be possible for the user to erase messages

from the memory. If the database becomes full the oldest messages are overwritten by new messages.

The user can tag individual messages for permanent retention. These messages may occupy up to 25% of the available database and should not be overwritten by new messages. When no longer required, the user is should be able to remove the tag on these 'saved' messages which may then be overwritten in the normal manner.

5.7 MSI EGC receiver addressing

The five basic methods of addressing EGC receivers are:

1. All-mobiles call (Inmarsat only);
2. Inmarsat system message addressing (Inmarsat only);
3. Fixed geographical area (NAV/METAREA);
4. defined geographical area Temporary area determined by MSI the information provider - circular or rectangular; and
5. Coastal warning area.

The type of address used in the header of an the information provided MSI packet is uniquely determined by the "C₂" service code field.

5.8 Message identification

All messages are transmitted with a unique reference number and originating ID. Each subsequent transmission of the message contains the original sequence number. This facility allows multiple printing of repeated messages to be inhibited.

5.9 Geographical area addressing

Geographical area addressing refers to messages transmitted to UTs EGC receivers in a particular area. The area may be expressed in terms of a fixed, pre-defined area such as the NAVAREA/METAREA, or satellite coastal warning area, or in terms of an defined absolute geographical address expressed as latitude and longitude coordinates on the surface of the earth. An defined absolute geographical address is a representation of a closed boundary on the surface of the earth given in the address field of the message header. The EGC receiver recognizes two forms of defined absolute geographical addressing: rectangular and circular. Each form is specified in terms of an absolute position in latitude and longitude and further parameters that completely specify the boundary.

In order to process a geographical area address, the EGC receiver should shall be provided with the UT's its current position. The position may be entered automatically from an integrated or external navigation aid or entered manually. The EGC receiver provides notification to the operator when the position has not been updated for four hours. If the UT's position has not been updated for more than 12 hours or is unknown, ~~ALL~~ ~~ALL~~ MSI EGC messages will be printed or stored in the memory.

A geographical area address is considered valid for a particular UT EGC receiver if its current

position falls inside or on the boundary specified by the address. It is a mandatory requirement that the operator be able to select more than one area, so that messages directed to other area(s) of interest can be provided. It is recommended that the operator be able to select at least four areas.

6 Link performance monitoring

The EGC receiver continuously monitors the received bulletin board whenever it is tuned and synchronized to the Satellite Access Station (SAS). The EGC receiver stores at least 500 messages (received MSI) of average length 500 characters (printable and non-printable) in this database. It should not be possible for the user to erase messages from the memory. If the database becomes full, the oldest messages should be overwritten by new messages.

7 Alarms and indications

The following alarms and indications are provided at a SOLAS MSI EGC receiver and meet the operational requirements for alarms stated in IEC 61097-4 standard.

7.1 Distress/Urgency priority call alarm

For SOLAS EGC receivers:

Provision is made for a specific audible alarm and visual indication at the position from which the ship is normally navigated to indicate receipt of MSI EGC messages with distress or urgency priority. It is not possible to disable this alarm and it is only possible to re-set it manually, and then only from the position where the message is displayed or printed.

7.2 Other alarms and indications

1. Users SIM card not present
2. Registration Failure
3. Loss of Signal
4. Packet Switch connection failure
5. Circuit Switch connection failure
6. Distress Voice Call Failure
7. Printer Failure

Additional alarms and indications may be provided at the manufacturer's discretion.

8 Electromagnetic compatibility

The interference and electromagnetic compatibility requirements of IEC 60945 standard applies.

9 Environmental conditions

SOLAS EGC receivers should shall operate satisfactorily under the environmental conditions specified in the SDM. The latest issues of IEC 61097-4 and IEC 60945 standards apply.

10 Navigational interface

~~All FleetBroadband UTs have an integrated navigational receiver. However, to update a receiver's position automatically from an alternative source, receivers may be equipped with an interface to vessel navigational equipment. A suggested standard interface is in IEC 61162, Part 1 Maritime navigation and radiocommunication equipment and systems – Digital interfaces (equivalent to NMEA 0183).~~

~~In order that an EGC receiver's position may be automatically updated, receivers may be equipped with an interface to navigational instruments. A suggested standard interface is in IEC 61162 standard, Part 1 (NMEA 0183) Standard for Interfacing Electronic Marine Navigational Devices.~~

Note: ~~All FleetBroadbands have an integrated navigational receiver.~~

APPENDIX

TECHNICAL REQUIREMENTS FOR FLEET SAFETY RADIO INSTALLATIONS ON BOARD SOLAS SHIPS

1 Satellite communication antennas

1.1 General

- .1 In general, satellite antennas should be located so that they have a 360° free view for the satellite at all times. In practice terms this can be difficult to achieve due to shadow sectors from nearby structures.
- .2 For Fleet Safety (BGAN antenna) it is recommended that communication should be maintained with the satellite down to an elevation of minus 5° in the fore and aft direction and minus 15° in the port and starboard direction.

1.2 Satellite communication antenna installation

The following guidelines should be observed in order to fulfil the above recommendations:

- .1 The antenna should be located at the top of the radar mast; or
- .2 On a pedestal, in the radar mast, or on the top deck so that:
 - .1 for directive antenna; shadows from constructions, especially within a distance of 10 metres, is maximum 6°; and
 - .2 for omnidirectional antennas; shadows from constructions, especially within a distance of 1 metre, is maximum 2°.
- .3 Antenna should be installed in a readily accessible location.
- .4 Satellite antenna should not be located in an area where they can be damaged by heat and smoke.
- .5 The satellite antenna should not be located on the same plane as the ships' radar antenna.
- .6 GNSS antenna should not be located close to or on the same plane as the Inmarsat antenna.
- .7 Consideration should be given to installing the Inmarsat antenna on a suitable pedestal.

(Resolutions A.663(16), A.698(17), A.807(19), as amended, A.808(19) and MSC.130 (75) and Inmarsat Design and Installation Guidelines)

Note: The mast/or pedestal should be constructed so that vibrations are reduced as much as possible.

1.3 Safe antenna distances

The following "safe distance" from Inmarsat antennas to other antennas and to the compass are recommended:

- .1 Distance to the HF antenna should be more than 5 metres.
- .2 Distance to VHF antennas should be more than 4 metres.
- .3 Distance to the magnetic compass should be more than 3 metres.

(The installation manual for the equipment and Inmarsat guidelines)

1.4 Fleet Safety

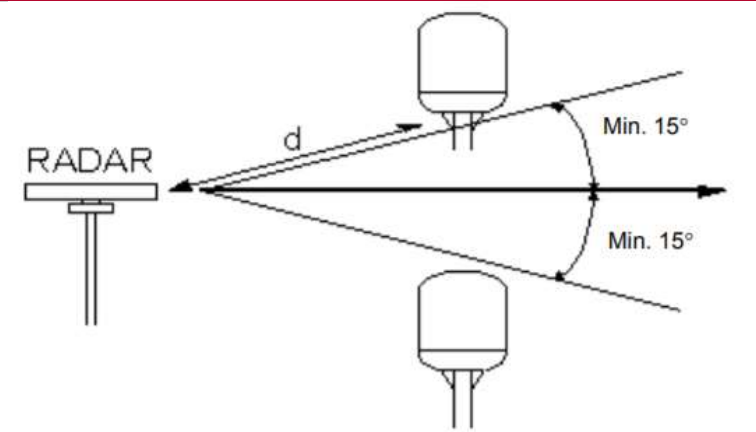
1.4.1 Antenna

Fleet Safety antenna are 2-axis stabilized BGAN antenna varying in size and throughput: FleetBroadband 150, FleetBroadband 250, FleetBroadband 500 and Fleet One.

All FleetBroadband antenna rotate 360° and down to -25° in pitch and roll, to allow for continuous pointing even in heavy sea conditions. Any obstructions within this volume can cause signal degradation.

1.4.2 Obstructions

The antenna should be mounted as far away as possible from the ship's radar and high power radio transmitters (including other Inmarsat based systems), because they may compromise the antenna performance. RF emission from radars might actually damage the antenna. Since a radar radiates a fan beam with a horizontal beam width of a few degrees and a vertical beam width of up to +/- 15°, the worst interference can be avoided by mounting the antenna at a different level, i.e. the antenna is installed minimum 15° above or below the radar antenna.



The FleetBroadband antenna itself may also interfere with other radio systems. Especially other Inmarsat systems and GNSS receivers with poor frequency discrimination are vulnerable to the radiation generated by the FleetBroadband antennas.

1.4.3 Antenna cable

A coaxial cable for connection between the antenna and terminal is delivered with the system. The manufacturers specifications regarding total attenuation and maximum DC resistance (short-circuit in one end) should be complied with. The maximum allowed RF-loss in the antenna cable is 20 dB at 1660 MHz. This is to ensure the performance of the system.

1.5 Antennas for voluntary radio equipment

Antennas for voluntary radio equipment may be located on deck, provided its use does not interfere with antennas of mandatory radio equipment. When mobile telephone is installed on board ships, special attention should be made to the facts that some types of mobile telephones (especially GSM telephone equipment) may interfere with the ship's navigational equipment (especially GNSS) and other electronic equipment.

ANNEX 4

DRAFT RESOLUTION MSC.[...(..)]
(adopted on ...)

~~REVISION OF~~ PROMULGATION OF MARITIME SAFETY INFORMATION

(RESOLUTION A.705(17), AS AMENDED)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that, by resolution A.705(17), the Assembly adopted the *Recommendation on promulgation of Maritime Safety Information*,

RECALLING FURTHER that the Committee, at its eighty-fifth and ninety-second sessions, approved MSC.1/Circ.1287 and Rev.1, respectively, on *Amendments to resolution A.705(17) – Promulgation of Maritime Safety Information*,

NOTING that the Assembly, at its seventeenth session, resolved that the procedures for the provision and promulgation of maritime safety information should be in accordance with resolution A.705(17) on the *Recommendation on promulgation of Maritime Safety Information*,

NOTING ALSO that said Assembly resolution urged Member States to co-operate in providing maritime safety information in accordance with the structure established by the aforementioned Recommendation,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue at its [sixth] session,

1 ADOPTS the *Revised recommendation on promulgation of Maritime Safety Information* set out in the annex to the present resolution;

2 RESOLVES that the procedures for the provision and promulgation of maritime safety information should be in accordance with the *Revised recommendation on promulgation of Maritime Safety Information* set out in the annex to the present resolution;

3 DETERMINES that the *Revised recommendation on promulgation of Maritime Safety Information* should become effective on 1 January 2020.~~THE MARITIME SAFETY COMMITTEE,~~

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

~~RECOGNIZING the importance of maintaining procedures for the provision and promulgation of maritime safety information, set out in the annex of resolution A.705(17), as amended,~~

~~TAKING INTO ACCOUNT the decision of the Sub-Committee on Navigation, Communications and Search and Rescue, at its [...] session, to revise the *Recommendation on promulgation of maritime safety information* and its amendment procedure,~~

~~HAVING CONSIDERED, at its [...] session, the proposed revised text of the *Promulgation of maritime safety information*, in accordance with the procedure set out in its section 7,~~

~~1 ——— ADOPTS the revised *Promulgation of maritime safety information*, the text of which is set out in the annex to the present resolution;~~

~~2 ——— DETERMINES that the revised *Promulgation of maritime safety information* shall be implemented from 1 January [2020];~~

~~3 ——— INVITES Governments promulgating maritime safety information to take account of the annexed revised [recommendation];~~

~~4 ——— INVITES ALSO Member States concerned to bring the contents of this resolution to the attention of all parties concerned;~~

~~5 ——— REVOKES MSC.1/Circ.1287/Rev.1.~~

ANNEX

RECOMMENDATION ON THE REVISED RECOMMENDATION ON PROMULGATION OF MARITIME SAFETY INFORMATION

1 INTRODUCTION

1.1 The purpose of this Recommendation document is to set out the organization, standards and methods which should be used for the promulgation and reception of Maritime Safety Information (MSI).

1.2 The Maritime Safety Information service of the Global Maritime Distress and Safety System (GMDSS) is the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation, received in-on ships by equipment which automatically monitors the appropriate transmissions, displays information which is relevant to the ship and provides a print capability. –This concept is illustrated in figure 1.

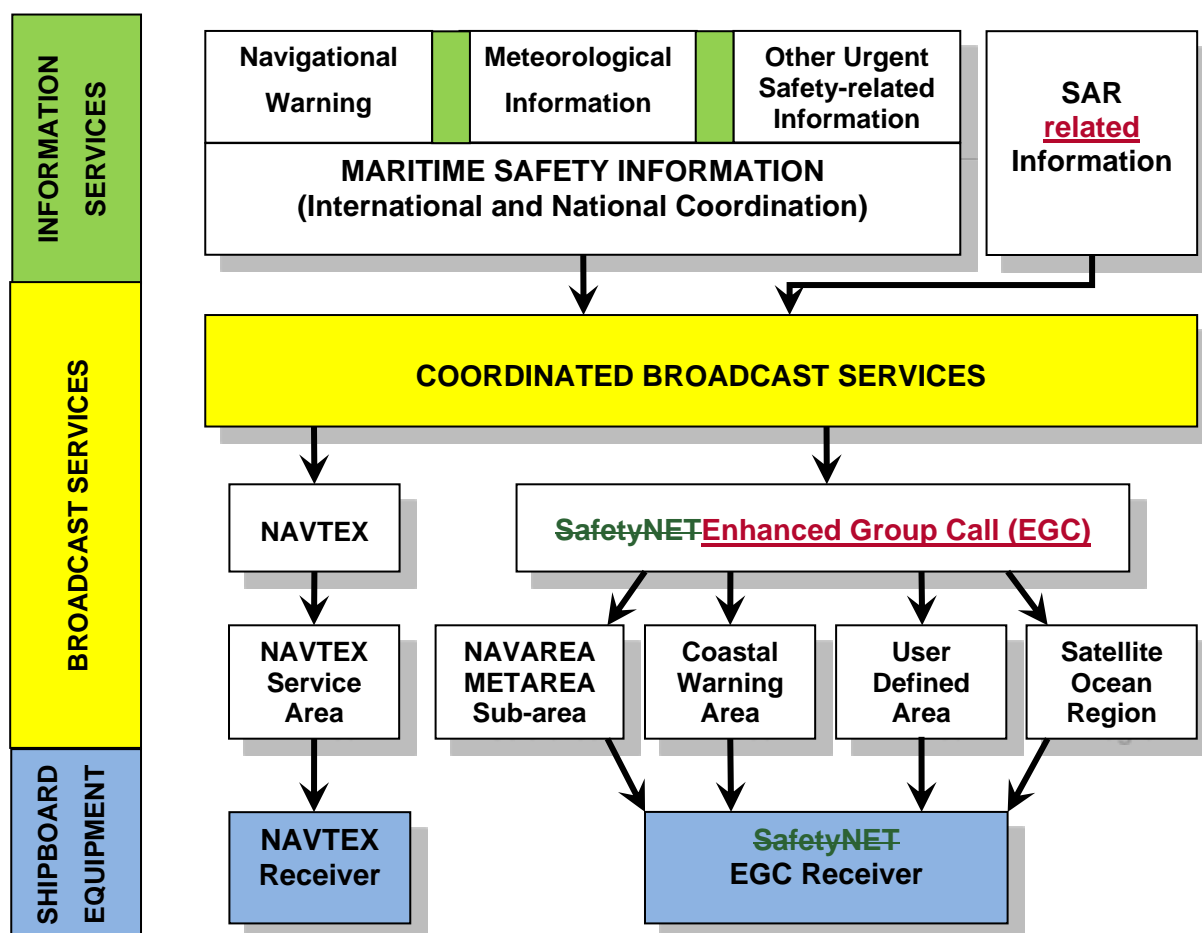


Figure 1 – The Maritime Safety Information service of the Global Maritime Distress and Safety System

1.3 Maritime ~~S~~safety ~~I~~information is of vital concern to all ships. -It is therefore essential that common standards are applied to the collection, editing and dissemination of this information. Only by doing so will the mariners be assured of receiving the information they need, in a form which they understand, at the earliest possible time.

2 DEFINITIONS

2.1 For the purposes of this ~~Recommendation~~document, the following definitions apply:

- .1 *Coastal warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a National Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas and/or by ~~the an~~ International ~~SafetyNET~~Enhanced Group Call—service to the coastal warning areas. —(In addition, Administrations may issue coastal warnings by other means).
- .2 *Coastal warning area* means a unique and precisely defined sea area within a NAVAREA/METAREA or Sub-area established by a coastal State for the purpose of coordinating the broadcast of coastal ~~M~~maritime—~~S~~safety ~~I~~information through ~~the an~~ International Enhanced Group Call ~~SafetyNET~~ service.
- .3 *Enhanced Group Call (EGC)* means the ~~system for the~~ broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.~~the system for broadcasting messages via a recognized mobile satellite service that supports the promulgation of Maritime Safety Information, navigational warnings, meteorological warnings and forecasts, Search and Rescue (SAR) information and other urgent safety-related messages to ships.~~
- .4 *Global Maritime Distress and Safety System (GMDSS)* means ~~a system that performs the functions set out in SOLAS regulation IV/4, as amended.~~ the global communications service based upon automated systems, both satellite and terrestrial, to provide distress alerting and promulgation of Mmaritime ~~S~~safety ~~I~~information for mariners.
- .54 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688, ~~as amended.~~
- .56 *In-force bulletin* means a list of serial numbers of those NAVAREA, Sub-area or coastal warnings in force issued and broadcast by the NAVAREA Coordinator, Sub-area Coordinator or National Coordinator.
- .7 *International Enhanced Group Call service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via ~~the~~ Enhanced Group Call ~~system~~, using the English language.
- .8 ~~*International Iridium service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via the Enhanced Group Call system, using the English language.~~

- ~~.698~~ *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of ~~M~~maritime ~~S~~safety ~~I~~information by means of narrow-band direct-printing telegraphy using the English language.¹
- ~~.710~~ *International SafetyNET service* means the coordinated broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information and ~~Search and Rescue related information via the Inmarsat Enhanced Group Call (EGC) system, using the English language, in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.~~
- ~~.8119~~ *Maritime ~~S~~safety ~~I~~information (MSI)²* means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- ~~.10129~~ *Maritime ~~S~~safety ~~I~~information service* means the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation.
- ~~.1130~~ *METAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular sea area. -The delimitation of such areas is not related to and ~~should~~~~shall~~ not prejudice the delimitation of any boundaries between States.
- ~~.1244~~ *Meteorological information* means the marine meteorological warning and forecast information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- ~~.1352~~ *National NAVTEX service* means the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- ~~.1463~~ *National ~~Enhanced Group Call~~~~SafetyNET~~ service* means the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information via the ~~Inmarsat~~ EGC system, using languages as decided by the Administration concerned.
- ~~.1574~~ *NAVAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of navigational warnings. -The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and ~~should~~~~shall~~ not prejudice the delimitation of any boundaries between States.
- ~~.1685~~ *Navigational warning* means a message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.

¹ As set out in the IMO NAVTEX Manual.

² As defined in ~~SOLAS~~ regulation IV/2 ~~of the 1974 SOLAS Convention, as amended.~~

³ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- .1796 NAVTEX means the system for the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information by means of narrow-band direct-printing telegraphy.
- .172018 NAVTEX coverage area means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in ~~IMO~~ resolution A.801(19), ~~annex 4~~as amended.
- .182419 NAVTEX service area means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which ~~M~~maritime ~~S~~safety ~~I~~information is provided from a particular NAVTEX transmitter. –It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in ~~IMO~~ resolution A.801(19), ~~as amended~~annex 4.
- .22049 Other urgent safety-related information means ~~M~~maritime ~~S~~safety ~~I~~information broadcast to ships that is not defined as a navigational warning or meteorological information. –This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- .213 Recognized mobile satellite service (RMSS) means any service which operates through a satellite system and is recognized by IMO, for use in the GMDSS.
- ~~.240 SafetyNET means the international service for the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information and Search and Rescue related information via the Inmarsat Enhanced Group Call system. SafetyNET Enhanced Group Call receiving capability is part of the mandatory equipment which is required to be carried by certain ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.~~
- .2254 Search and Rescue (SAR) related information means distress alert relays and other urgent search and rescue related information broadcast to ships.
- .2362 Sub-area means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of ~~M~~maritime ~~S~~safety ~~I~~information. –The delimitation of such areas is not related to and ~~should~~shall not prejudice the delimitation of any boundaries between States.
- .2473 User defined area means a temporary geographic area, either circular or rectangular, to which ~~M~~maritime ~~S~~safety ~~I~~information or Search and Rescue related information is addressed.
- .258 World-Wide Met-Ocean Information and Warning Service (WWMIWS)⁴ means the internationally coordinated service for the promulgation of meteorological warnings and forecasts.

⁴ As set out in resolution A.1051(27), as amended.

.2694 *World-Wide Navigational Warning Service (WWNWS)*⁵ means the internationally and nationally coordinated service for the promulgation of navigational warnings.

.272530 In the operating procedures, *coordination* means that the allocation of the time for data *broadcast* is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in *IMO* resolutions A.705(17), as amended, A.706(17), as amended,⁷ and A.1051(27), *as amended*.

3 BROADCAST METHODS

3.1 The *two* principal methods *are* used for broadcasting *maritime safety information MSI* in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended, in the areas covered by these methods, *are* as follows:

- .1 NAVTEX: broadcasts to coastal waters; and
- .2 *SafetyNET Enhanced Group Call*: broadcasts *to the geographical sea areas covered by an IMO recognized mobile satellite service, which cover all the waters of the globe except for Sea Area A4, as defined by resolution A.801(19), annex 3, as amended.*

3.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some duplication to allow a ship to change from one method to another, the majority of *warnings MSI* will be broadcast either on NAVTEX or *SafetyNET by EGC*.

3.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.4 *SafetyNET EGC* broadcasts should be made in accordance with the standards and procedures set out in the *IMO manuals of the recognized mobile satellite service provider International SafetyNET Manual*.

3.5 HF NBDP may be used to promulgate *maritime safety information MSI* in areas outside *EGC and NAVTEX Inmarsat* coverage (SOLAS regulation IV/7.1.5).

3.6 In addition, Administrations may also provide *maritime safety information MSI* by other means.

3.7 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. A NAVAREA/*METAREA* warning and a coastal warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

⁵ As set out in resolution A.706(17), as amended.

4 SHIPBOARD EQUIPMENT

4.1 Ships are required to be capable of receiving ~~maritime safety information~~ MSI broadcasts for the area in which they operate in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.

4.2 The NAVTEX receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.540, ~~as amended~~. ~~IMO Resolution MSC.148(77)~~ recommends Governments to ensure that NAVTEX receiver equipment, if installed on or after 1 July 2005, conforms to performance standards not inferior to those specified in ~~IMO~~ resolution MSC.148(77), and if installed before 1 July 2005, conforms to performance standards not inferior to those specified in the annex to ~~IMO~~ resolution A.525(13).

4.3 ~~The SafetyNET receiver should conform to the Maritime Design and Installation Guidelines (DIGs), annex B, issue 6 of April 2008 published by Inmarsat. IMO Performance standards for EGC equipment are provided in resolution MSC.306(87), as amended by resolution MSC.431(98), for equipment installed on or after 1 July 2019; resolution MSC.306(87) for equipment installed on or after 1 July 2012 and before 1 July 2019; and resolution A.664(16) for equipment installed before 1 July 2012. Resolution MSC.306(87) recommends Governments to ensure that EGC equipment, if installed on or after 1 July 2012, conforms to performance standards not inferior to those specified in the annex to IMO resolution MSC.306(87), and if installed before 1 July 2012, conforms to performance standards not inferior to those specified in the annex to IMO resolution A.664(16).~~

4.4 In sea area A4, outside of the coverage of NAVTEX, where MSI ~~is~~ may be received using HF NBDP, the HF NBDP receiver should operate in accordance with the technical specifications set out in Recommendation ITU-R M.688, ~~as amended~~, and should meet the performance standards adopted by the Organization by resolution A.700(17), as amended.

5 PROVISION OF INFORMATION

5.1 Navigational warnings should be provided in accordance with the standards, organization and procedures of WWNWS under the functional guidance of the International Hydrographic Organization (IHO) through its World-Wide Navigational Warning Service Sub-Committee (WWNWS-~~SC~~).

5.2 Meteorological information should be provided in accordance with the World Meteorological Organization (WMO) technical regulations, recommendations, and procedures defined for the World-Wide Met-Ocean Information and Warning Service (WWMIWS) ~~monitored and reviewed by the Expert Team on Maritime Safety Services~~ through the World-Wide Met-Ocean Information and Warning Service Committee (WWMIWS-C) of the Joint WMO-/IOC⁶ Technical Commission for Oceanography and Marine Meteorology (JCOMM).

5.3 Other urgent safety-related information should be provided by the relevant national or international authority responsible for managing the system or scheme. ~~SAR information should be provided by the various authorities responsible for coordinating maritime search and rescue operations in accordance with the standards and procedures established by the Organization.~~

⁶ IOC is the Intergovernmental Oceanographic Commission of UNESCO.

5.4 SAR related information should be provided by the various authorities responsible for coordinating maritime search and rescue operations in accordance with the standards and procedures established by the Organization.~~Other urgent safety-related information should be provided by the relevant national or international authority responsible for managing the system or scheme.~~

5.5 Relevant national or international authorities should take into account the need for contingency planning.

6 COORDINATION PROCEDURES

6.1 In order to make the best use of automated reception facilities, and to ensure that the mariner receives at least the minimum information necessary for safe navigation, careful coordination is required.

6.2 In general, this requirement for coordination will be met by the standard operational procedures of ~~the Organization~~IMO, IHO and WMO, International Telecommunication Union (ITU) and the International Mobile Satellite Organization (IMSO). Coordination issues ~~Cases of difficulty~~ should be referred, in the first instance, to the most appropriate parent body.

6.3 Administrations broadcasting ~~maritime safety information~~MSI should provide details of services to the Organization, which will maintain and publish this as part of the GMDSS Master Plan.

6.4 The coordination of changes to operational NAVTEX services and of the establishment of new stations is undertaken by the IMO NAVTEX Coordinating Panel on behalf of the Maritime Safety Committee.

6.5 The coordination of changes to operational ~~SafetyNET~~EGC services and of the authorization and registration of information providers is undertaken by the IMO International Enhanced Group Call~~SafetyNET~~ Co-ordinating Panel⁷ on behalf of the Maritime Safety Committee.

6.6 Administrations should design their broadcasts to suit specific service areas.⁷ The designation of service areas is an important part of the coordination process since it is intended that a ship should be able to obtain all the information relevant to a given area from a single source. The Maritime Safety Committee approves NAVAREAs/METAREAs and service areas for the International NAVTEX and ~~SafetyNET~~EGC services as advised by IHO and WMO.

7 ~~IMO~~ PROCEDURE FOR AMENDING THE MARITIME SAFETY INFORMATION SERVICE

7.1 Proposals for amendment or enhancement of the ~~maritime safety information service~~MSI service should be submitted for evaluation by the ~~appropriate Sub-Committee~~ on Navigation, Communications and Search and Rescue (NCSR Sub-Committee). Amendments will only be adopted after consideration and ~~approval of the Maritime Safety Committee (MSC)~~ by the NCSR Sub-Committee.

7.2 Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be

⁷ Coordination of HF NBDP broadcasts in the Arctic should be undertaken by relevant MSI service providers.

notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

7.3 The agreement of IHO, WMO, IMSO and ITU, as appropriate, and the active participation of other bodies ~~should~~shall be sought, according to the nature of the proposed amendments.

~~7.3 Amendments adopted by the Maritime Safety Committee will be notified to all concerned. At least 12 months' notice will be given before implementation and they will come into force on 1 January of the following year.~~

ANNEX 5

DRAFT RESOLUTION MSC.[...(..)]
(adopted on ...)

~~REVISION OF~~ WORLD-WIDE NAVIGATIONAL WARNING SERVICE
(RESOLUTION A.706(17), AS AMENDED)

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that, by resolution A.706(17), the Assembly adopted the *World-Wide Navigational Warning Service*,

RECALLING FURTHER that the Committee, at its eighty-fifth and ninety-second sessions, approved MSC.1/Circ.1288 and Rev.1, respectively, on *Amendments to resolution A.706(17) – World-Wide Navigational Warning Service*,

~~RECOGNIZING the importance of updating the *IMO/IHO World-Wide Navigational Warning Service (WWNWS) guidance document*, set out in the annexes of resolution A.706(17), as amended,~~

NOTING that the Assembly, at its seventeenth session, recommended that Member States implement the world-wide navigational warning service and authorized the Committee to amend the world-wide navigational warning service, as might be necessary,

~~TAKING INTO ACCOUNT the decision of the Sub-Committee on Navigation, Communications and Search and Rescue, at its [...] session, to revise the *IMO/IHO World-Wide Navigational Warning Service Guidance Document* and its amendment procedure,~~

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue at its [sixth] session, at its [...] session, the proposed revised text of the *guidance document*, in accordance with the procedure set out in annex 2 of resolution A.706(17), as amended,

1 ADOPTS the *Amendments to revised IMO/IHO World-Wide Navigational Warning Service Guidance Document*, the text of which is set out in the annex to the present resolution;

2 RECOMMENDS Member States to continue implementing the *World-Wide Navigational Warning Service*, taking into account the *Revised Guidance Document* set out in the annex to the present resolution;

3 DETERMINES that the *Amendments to World-Wide Navigational Warning Service* should become effective on 1 January 2020.

2 ~~DETERMINES that the revised *IMO/IHO World-Wide Navigational Warning Service Guidance Document* shall be implemented from 1 January [2020];~~

3 ~~INVITES Governments providing the *World-Wide Navigational Warning Service* to take account of the annexed revised guidance document;~~

~~4 INVITES ALSO Member States concerned to bring the contents of this resolution to the attention of all parties concerned;~~

~~5 REVOKES MSC.1/Circ.1288/Rev.1.~~

ANNEX

REVISED IMO/IHO WORLD-WIDE NAVIGATIONAL WARNING SERVICE REVISED GUIDANCE DOCUMENT

1 INTRODUCTION

1.1 The World-Wide Navigational Warning Service (WWNWS) is the internationally and nationally coordinated service for the promulgation of navigational warnings.

1.2 The purpose of this document is to provide specific guidance for the promulgation of internationally coordinated NAVAREA and coastal warnings. Its guidance does not apply to purely national warning services which supplement these internationally coordinated services.

1.3 The original resolution of the tenth International Hydrographic Conference in 1972 recommended the formation of an ad hoc joint IMO/IHO Commission to study the "establishment of a coordinated, efficient global radio navigational warning service". Subsequently, this became a purely IHO Commission known as the Commission on Promulgation of Radio Navigational Warnings, which in January 2009 became the IHO World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC) but nevertheless consults continuously with IMO. In its report to the eleventh International Hydrographic Conference in 1977, the Commission submitted a Draft Plan for the Establishment of a World-Wide Navigational Warning System, also referred to as Plan for the Establishment of a co-ordinated Radio Navigational Warning Service. -The title World-Wide Navigational Warning Service or WWNWS used for this revised edition of the document reflects the evolution of the system from a proposed action to an effective and fully operational co-ordinated service. This revised edition reflects the evolution of the WWNWS since the advent of the Global Maritime Distress and Safety System (GMDSS), as adopted by the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974, on the Global Maritime Distress and Safety System in November 1988, effective on 1 February 1992.

1.4 Future amendments to this guidance document will be considered formally and approved by both IHO and IMO in accordance with the procedures set out in ~~the section~~ annex 7. Proposed amendments ~~must shall~~ should be evaluated by the IHO WWNWS-SC, which includes an ex-officio representative of the IMO Secretariat, prior to any extensive IHO or IMO consideration.

2 DEFINITIONS

2.1 For the purposes of the WWNWS, the following definitions apply:

- .1 *Coastal warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a National Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas and/or by ~~the an International Enhanced Group Call International SafetyNET service~~ service to the coastal warning areas. (In addition, Administrations may issue coastal warnings by other means-).
- .2 *Coastal warning area* means a unique and precisely defined sea area within a NAVAREA/METAREA or Sub-area established by a coastal State for the purpose of coordinating the broadcast of coastal ~~M~~ maritime ~~S~~ safety ~~I~~ information through the Enhanced Group Call SafetyNET service.

- .3 *Enhanced Group Call (EGC)* means the system for the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.~~the system for broadcasting messages via a recognized mobile satellite service that supports the promulgation of Maritime Safety Information, navigational warnings, meteorological warnings and forecasts, Search and Rescue (SAR) information and other urgent safety-related messages to ships.~~
- .43 *Global Maritime Distress and Safety System (GMDSS)* means a system that performs the functions set out in SOLAS regulation IV/4, as amended.~~the global communications service based upon automated systems, both satellite and terrestrial, to provide distress alerting and promulgation of Maritime Safety Information for mariners.~~
- .54 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688,~~as amended.~~
- .65 *In-force bulletin* means a list of serial numbers of those NAVAREA, Sub-area or coastal warnings in force issued and broadcast by the NAVAREA Coordinator, Sub-area Coordinator or National Coordinator.
- .7 *International Iridium service* mean the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via the Enhanced Group Call system, using the English language.
- .8 *International Enhanced Group Call service* means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via the Enhanced Group Call system, using the English language.
- .69 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of Mmaritime Ssafety Iinformation by means of narrow-band direct-printing telegraphy using the English language.¹
- .710 *International SafetyNET services*~~s~~ means the coordinated broadcast and automatic reception of Mmaritime Ssafety Iinformation and Search and Rescue related information via the the Inmarsat Enhanced Group Call(EGC) system, using the English language,~~in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.~~
- .811 *Local warning* means a navigational warning which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority.
- .912 *Maritime Ssafety Iinformation (MSI)*² means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- .139 *Maritime Ssafety Iinformation service* means the internationally and nationally coordinated network of broadcasts containing information, which is necessary for safe navigation.

¹ As set out in the IMO NAVTEX Manual.

² As defined in regulation SOLAS regulation IV/2~~of the 1974 SOLAS Convention, as amended.~~

- .144 *METAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of marine meteorological information. –The term METAREA followed by a roman numeral may be used to identify a particular sea area. –The delimitation of such areas is not related to and ~~should~~~~shall~~ not prejudice the delimitation of any boundaries between States.
- .152 *National Coordinator* means the national authority charged with collating and issuing coastal warnings within a national area of responsibility.
- .163 *National NAVTEX service* means the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .174 *National ~~Safety~~NET Enhanced Group Call services* means the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information via the ~~Inmarsat~~ EGC system, using languages as decided by the Administration concerned.
- .185 *NAVAREA* means a geographical sea area³ established for the purpose of coordinating the broadcast of navigational warnings. –The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and ~~should~~~~shall~~ not prejudice the delimitation of any boundaries between States.
- .196 *NAVAREA Coordinator* means the authority charged with coordinating, collating and issuing NAVAREA warnings for a designated NAVAREA.
- .2017 *NAVAREA warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a NAVAREA Coordinator.
- .2148 *Navigational warning* means a message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .4922 *NAVTEX* means the system for the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~I~~information by means of narrow-band direct-printing telegraphy.
- .239 *NAVTEX Coordinator* means the authority charged with operating and managing one or more NAVTEX stations broadcasting ~~M~~maritime ~~S~~safety ~~I~~information as part of the International NAVTEX service.
- .244 *NAVTEX coverage area* means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in ~~IMO~~ resolution A.801(19), ~~annex 4~~as amended.
- .252 *NAVTEX service area* means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which ~~M~~maritime ~~S~~safety ~~I~~information is provided from a particular NAVTEX transmitter. –It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in ~~IMO~~ resolution A.801(19), ~~annex 4~~as amended.

³ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- ~~.26~~³ *Other urgent safety-related information* means ~~M~~maritime ~~S~~safety ~~i~~information broadcast to ships that is not defined as a navigational warning or meteorological information. –This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- ~~.27~~ *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by IMO, for use in the GMDSS.
- ~~.28~~⁴ *SafetyNET* means the international service for the broadcast and automatic reception of ~~M~~maritime ~~S~~safety ~~i~~information ~~and Search and Rescue related information~~ via the Inmarsat ~~Enhanced Group Call~~ system. ~~SafetyNET Enhanced Group Call~~ receiving capability is part of the mandatory equipment which is required to be carried by certain ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- ~~.28~~⁵ *Sub-area* means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of navigational warnings. The delimitation of such areas is not related to and ~~should~~^{shall} not prejudice the delimitation of any boundaries between States.
- ~~.29~~³⁰~~26~~ *Sub-area Coordinator* means the authority charged with coordinating, collating and issuing Sub-area warnings for a designated Sub-area.
- ~~.30~~¹²~~27~~ *Sub-area warning* means a navigational warning or in-force bulletin promulgated as part of a numbered series by a Sub-area Coordinator. Broadcast should be made by the International NAVTEX service to defined NAVTEX service areas or by the International ~~Enhanced Group Call~~ ~~SafetyNET~~ service (through the appropriate NAVAREA Coordinator).
- ~~.28~~³¹~~12~~ *User defined area* means a temporary geographic area, either circular or rectangular, to which ~~M~~maritime ~~S~~safety ~~i~~information ~~or Search and Rescue related information~~ is addressed.
- ~~.29~~³²~~23~~ In the operating procedures, *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in ~~IMO~~ resolutions A.705(17), as amended, A.706(17), as amended, and A.1051(27), ~~as amended~~.

3 NAVIGATIONAL WARNING BROADCASTS

3.1 Methods

3.1.1 ~~The t~~^{Two} principal methods ~~are~~^{are} used for broadcasting navigational warnings as part of MSI in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended, in the areas covered by these methods, ~~are~~^{are} as follows:

- .1 NAVTEX: broadcasts to coastal waters; and

- .2 ~~SafetyNET~~**Enhanced Group Call**: broadcasts to the geographical sea areas covered by an IMO recognized mobile satellite service, which cover all the waters of the globe except for sea area A4, as defined by IMO resolution A.801(19), annex 3, as amended.

3.1.2 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. -Although there will be some duplication to allow a ship to change from one method to another, the majority of warnings will be broadcast either on NAVTEX or by EGC~~SafetyNET~~.

3.1.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.1.4 ~~SafetyNET~~**EGC** broadcasts should be made in accordance with the standards and procedures set out in the IMO manuals of the recognized mobile satellite service provider~~International SafetyNET Manual~~.

3.1.5 HF NBDP may be used to promulgate ~~maritime safety information~~ MSI in areas outside ~~Inmarsat~~ EGC and NAVTEX coverage (SOLAS regulation IV/7.1.5).

3.1.6 In addition, Administrations may also provide navigational warnings by other means.

3.1.7 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. -A NAVAREA/**METAREA** ~~w~~**Warning** and a coastal ~~w~~**Warning**, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

3.2 Scheduling

3.2.1 Automated methods (NAVTEX/~~SafetyNET~~**Enhanced Group Call**)

3.2.1.1 Navigational warnings should be broadcast as soon as possible or as dictated by the nature and timing of the event. -Normally, the initial broadcast should be made as follows:

- .1 for NAVTEX, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings; and
- .2 for ~~SafetyNET~~**EGC**, within 30 minutes of receipt of original information, or at the next scheduled broadcast.

3.2.1.2 Navigational warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and in the International SafetyNET Manual IMO manuals of the recognized mobile satellite service provider, as appropriate.

3.2.1.3 At least two scheduled daily broadcast times are necessary to provide adequate promulgation of NAVAREA warnings. -When NAVAREAs extend across more than six time zones, more than two broadcasts should be considered to ensure that warnings can be received. When using ~~SafetyNET~~**EGC** in lieu of NAVTEX for coastal warnings, Administrations may need to consider an increase in the number of scheduled daily broadcasts compared with the requirement for NAVAREA warnings.

3.2.2 Schedule changes

3.2.2.1 Broadcast times for NAVTEX are defined by the B1 transmitter identification character of the station, allocated by the IMO NAVTEX Coordinating Panel.

3.2.2.2 Times of scheduled broadcasts under the ~~International SafetyNET~~ EGC service are coordinated through the IMO International [Enhanced Group Call] ~~SafetyNET~~ Coordinating Panel¹.

4 NAVIGATIONAL WARNINGS

4.1 General

4.1.1 There are four types of navigational warnings: NAVAREA warnings, Sub-area warnings, coastal warnings and local warnings. –The WWNWS guidance and coordination are involved with only three of them:

- .1 NAVAREA warnings;
- .2 Sub-area warnings; and
- .3 Coastal warnings.

4.1.2 Navigational warnings should remain in force until cancelled by the originating coordinator. –Navigational warnings should be broadcast for as long as the information is valid; however, if they are readily available to mariners by other official means, for example in Notices to Mariners, then after a period of six weeks they may no longer be broadcast.

4.1.3 The minimum information in a navigational warning which a mariner requires is "hazard" and "position". –It is usual, however, to include sufficient extra detail to allow some freedom of action in the vicinity of the hazard. –This means that the message should give enough extra data for the mariners to be able to recognize the hazard and assess its effect upon their navigation.

4.1.4 If known, the duration of the event causing a navigational warning should be given in the text.

4.1.5 Some of the subjects for navigational warnings listed in paragraph 4.2.1.3 (e.g. –drifting ice and tsunami warnings) may also be suitable for inclusion ~~in~~ as METAREA warnings or forecasts. –In this event, appropriate coordination between the relevant NAVAREA and METAREA Coordinators ~~should~~ must occur.

4.2 The four types of navigational warnings are:

4.2.1 NAVAREA warnings

4.2.1.1 NAVAREA warnings are concerned with the information detailed below which oceangoing mariners require for their safe navigation. –This includes, in particular, new navigational hazards and failures of important aids to navigation as well as information which may require changes to planned navigational routes.

4.2.1.2 Coastal warnings are broadcast by the International NAVTEX service, or by ~~the International SafetyNET service~~ International EGC service when implemented in lieu of NAVTEX. –They are not normally rebroadcast as NAVAREA warnings unless deemed of such significance that the mariner should be aware of them before entering a NAVTEX service area. The National Coordinator will evaluate the significance of the information for consideration as a NAVAREA warning while the NAVAREA Coordinator will make the final determination.

4.2.1.3 The following subjects are considered suitable for broadcast as NAVAREA warnings. This list is not exhaustive and should be regarded only as a guideline. –Furthermore, it presupposes that sufficiently precise information about the item has not previously been disseminated in a Notice to Mariners:

- .1 casualties to lights, fog signals, buoys and other aids to navigation affecting main shipping lanes;
- .2 the presence of dangerous wrecks in or near main shipping lanes and, if relevant, their marking;
- .3 establishment of major new aids to navigation or significant changes to existing ones, –when such establishment or change, might be misleading to shipping;
- .4 the presence of large unwieldy tows in congested waters;
- .5 drifting hazards (including derelict ships, ice, mines, containers, other large items over 6 metres in length, etc.);
- .6 areas where **S**earch and **R**escue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas);
- .7 the presence of newly discovered rocks, shoals, reefs and wrecks likely to constitute a danger to shipping, and, if relevant, their marking;
- .8 unexpected alteration or suspension of established routes;
- .9 cable or pipe-laying activities, the towing of large submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting potential dangers in or near shipping lanes;
- .10 the establishment of research or scientific instruments in or near shipping lanes;
- .11 the establishment of offshore structures in or near shipping lanes;
- .12 significant malfunctioning of radio-navigation services and shore-based **M**aritime **S**safety **I**information radio or satellite services;
- .13 information concerning events which might affect the safety of shipping, sometimes over wide areas, e.g. naval exercises, missile firings, space missions, nuclear tests **and**, ordnance dumping zones, **etc**. It is important that where the degree of hazard is known, this information is included in the relevant warning. Whenever possible such warnings should be originated not less than five days in advance of the scheduled event and reference may be made to relevant national publications in the warning;
- .14 operating anomalies identified within Electronic Chart Display and Information System (ECDIS) including Electronic Navigational Chart (ENC) issues;
- .154 acts of piracy and armed robbery against ships;

- .165 tsunamis and other natural phenomena, such as abnormal changes to sea level;
- .176 World Health Organization (WHO) health advisory information; and
- .187 security-related requirements.⁴

4.2.2 Sub-area warnings

4.2.2.1 Sub-area warnings broadcast information which is necessary for safe navigation within a Sub-area. They will normally include all subjects listed in 4.2.1.3 above, but will usually affect only the Sub-area.

4.2.3 Coastal warnings

4.2.3.1 Coastal warnings broadcast information which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station, and should not be restricted to main shipping lanes. Where the area is served by International NAVTEX, it should provide navigational warnings for the entire NAVTEX service area. Where the area is not served by International NAVTEX, it is necessary to include all warnings relevant to the coastal waters up to 250 miles from the coast in the ~~International SafetyNET service~~ International EGC service broadcast.

4.2.3.2 Coastal warnings should include at least the subjects in 4.2.1.3.

4.2.4 Local warnings

4.2.4.1 Local warnings broadcast information which cover inshore waters, often within the limits of jurisdiction of a harbour or port authority. They are broadcast by means other than NAVTEX or ~~SafetyNET EGC~~, and supplement coastal warnings by giving detailed information within inshore waters.

5 NAVIGATIONAL WARNING REQUIREMENTS

5.1 Guidance

5.1.1 Operational guidance for handling and formatting navigational warnings is given in the Joint IMO/IHO/WMO Manual on Maritime Safety Information, the IMO NAVTEX Manual and the ~~IMO International SafetyNET~~ manuals of the recognized mobile satellite service provider Manual.

5.2 Numbering

5.2.1 Navigational warnings in each series should be consecutively numbered throughout the calendar year, commencing with 1/YY at 0000 UTC on 1 January.

5.2.2 Navigational warnings should be transmitted in reverse numerical order on scheduled broadcasts.

⁴ In accordance with the requirements of the International Ship and Port Facility Security Code.

5.3 Language

5.3.1 All NAVAREA, Sub-area and coastal warnings should be broadcast only in English in the International NAVTEX and ~~SafetyNET~~ International EGC services.

5.3.2 In addition to the required broadcasts in English, NAVAREA, Sub-area and coastal warnings may be broadcast in a national language using ~~N~~ational NAVTEX and ~~SafetyNET~~ National EGC services and/or other means.

5.3.3 Local warnings may be issued in the national language and/or in English.

5.4 "No warnings" message

5.4.1 When there are no navigational warnings to be disseminated at a scheduled broadcast time, a brief unnumbered message should be transmitted to identify the broadcast and advise the mariner that there is no navigational warning message traffic on hand.

6 COORDINATOR RESOURCES AND RESPONSIBILITIES

6.1 NAVAREA Coordinator resources

6.1.1 The NAVAREA Coordinator ~~should~~must have:

- .1 the expertise and information sources of a well-established national hydrographic service;
- .2 effective communications, e.g.: telephone, e-mail, facsimile, ~~and~~ internet, ~~telex, etc.~~, with Sub-area and National Coordinators in the NAVAREA, with other NAVAREA Coordinators and with other data providers; and
- .3 access to broadcast systems for transmission to the navigable waters of the NAVAREA. As a minimum, this should include those described in paragraph 3.1.1. Reception should normally be possible at least 300 nautical miles beyond the limit of the NAVAREA.

6.2 NAVAREA Coordinator responsibilities

6.2.1 The NAVAREA Coordinator ~~should~~must:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within the NAVAREA;
- .2 assess all information immediately upon receipt for relevance to navigation in the NAVAREA;
- .3 select information for broadcast in accordance with the guidance given in paragraph 4.2.1 above;
- .4 draft NAVAREA warnings in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information;
- .5 direct and control the broadcast of NAVAREA warnings, in accordance with the provisions of the 1974 International SOLAS Convention, as amended for the Safety of Life at Sea, 1974, as amended;

- .6 forward NAVAREA warnings and relevant associated information which may require wider promulgation directly to adjacent NAVAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .7 ensure that NAVAREA warnings which remain in force for more than six weeks are made available immediately to NAVAREA Coordinators, other authorities and mariners in general, as appropriate;
- .8 ensure that information concerning all navigational warning subject areas listed in paragraph 4.2.1.3 that may not require a NAVAREA warning within their own NAVAREA is forwarded immediately to the appropriate National and NAVAREA Coordinators affected by the event;
- .9 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .10 promulgate the cancellation of NAVAREA warnings which are no longer valid;
- .11 act as the central point of contact on matters relating to navigational warnings within the NAVAREA;
- .12 promote and oversee the use of established international standards and practices in the promulgation of navigational warnings throughout the NAVAREA;
- .13 when notified by the authority designated to act on reports of piracy and armed robbery against ships, arrange for the broadcast of a suitable NAVAREA warning. Additionally, keep the national or regional piracy control centre informed of long-term broadcast action(s);
- .14 when notified by the appropriate authorities, arrange for the broadcast of suitable NAVAREA warnings to promulgate World Health Organization (WHO) health advisories, tsunami-related warnings, and other information which is necessary for safe navigation;
- .15 monitor the broadcasts which they originate, to ensure that the warnings have been correctly broadcast;
- .16 maintain records of source data relating to NAVAREA warnings in accordance with the requirement of the ~~n~~^National Administration of the NAVAREA Coordinator;
- .17 coordinate preliminary discussions between neighbouring Member States, seeking to establish or amend NAVTEX services, and with other adjacent Administrations, prior to formal application;
- .18 contribute to the development of international standards and practices through attendance and participation in the IHO World-Wide Navigational Warning Service Sub-Committee meetings, and also participate in relevant IMO, IHO and WMO fora as appropriate; and
- .19 take into account the need for contingency planning.

6.3 Sub-area Coordinator resources

6.3.1 The Sub-area Coordinator ~~should~~^{must} have or have access to:

- .1 the expertise and information sources of a well-established national hydrographic service;
- .2 effective communications, e.g. telephone, email, facsimile ~~and~~^{and}, Internet, ~~telex, etc.~~^{with National Coordinators in the Sub-area, with the NAVAREA Coordinator, and with other data providers; and}
- .3 broadcast systems for transmission to the entire Sub-area.

6.4 Sub-area Coordinator responsibilities

6.4.1 The Sub-area Coordinator ~~should~~^{must}:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within the Sub-area;
- .2 assess all information immediately upon receipt for relevance to navigation in the Sub-area;
- .3 select information for broadcast in accordance with the guidance given in paragraph 4.2.1 above;
- .4 draft Sub-area warnings in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information;
- .5 direct and control the broadcast of Sub-area warnings, in accordance with the provisions of the ~~International 1974 SOLAS Convention, as amended~~^{SOLAS Convention for the Safety of Life at Sea, 1974, as amended};
- .6 forward Sub-area warnings and relevant associated information which may require wider promulgation directly to their own NAVAREA Coordinator using the quickest possible means;
- .7 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .8 promulgate the cancellation of Sub-area warnings which are no longer valid;
- .9 act as the central point of contact on matters relating to navigational warnings within the Sub-area;
- .10 promote the use of established international standards and practices in the promulgation of navigational warnings within the Sub-area;
- .11 monitor the broadcasts which they originate to ensure that the warnings have been correctly broadcast;
- .12 maintain records of source data relating to Sub-area warnings in accordance with the requirement of the ~~n~~^National Administration of the Sub-area Coordinator;

- .13 contribute to the development of international standards and practices through attendance and participation in the IHO World-Wide Navigational Warning Service Sub-Committee meetings, and also participate in relevant IMO, IHO and WMO fora as appropriate; and
- .14 take into account the need for contingency planning.

6.5 National Coordinator resources

6.5.1 The ~~n~~National Coordinator ~~should~~must have:

- .1 established sources of information relevant to the safety of navigation within national waters;
- .2 effective communications, e.g., telephone, email, facsimile, ~~telex, etc.~~ and Internet, with the NAVAREA/Sub-area Coordinator and adjacent ~~n~~National Coordinators; and
- .3 access to broadcast systems for transmission to their area of national responsibility.

6.6 National Coordinator responsibilities

6.6.1 The ~~n~~National Coordinator ~~should~~must:

- .1 endeavour to be informed of all events that could significantly affect the safety of navigation within their area of national responsibility;
- .2 assess all information immediately upon receipt for relevance to navigation in their area of national responsibility;
- .3 select information for broadcast in accordance with the guidance given in paragraph 4.2.1 above;
- .4 draft coastal warnings in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information;
- .5 direct and control the broadcast of coastal warnings, in accordance with the provisions of the ~~International-1974 SOLAS Convention, as amended~~SOLAS Convention for the Safety of Life at Sea, 1974, as amended;
- .6 forward coastal warnings and relevant associated information which may require wider promulgation directly to their NAVAREA/Sub-area Coordinator and/or adjacent ~~n~~National Coordinators as appropriate, using the quickest possible means;
- .7 broadcast in-force bulletins not less than once per week at a regular scheduled time;
- .8 promulgate the cancellation of coastal warnings which are no longer valid;
- .9 act as the central point of contact on matters relating to navigational warnings within their area of national responsibility;

- .10 promote the use of established international standards and practices in the promulgation of navigational warnings within their area of national responsibility;
- .11 monitor the broadcasts which they originate to ensure that the warnings have been correctly broadcast;
- .12 maintain records of source data relating to coastal warnings in accordance with the requirement of the nNational Administration of the nNational Coordinator; and
- .13 take into account the need for contingency planning.

*****ANNEX 2**

7 ~~IMO~~ PROCEDURE FOR AMENDING THE WORLD-WIDE NAVIGATION WARNING SERVICE

7.1 Proposals for amendment or enhancement of the World-Wide Navigational Warning Service ~~must~~ should be submitted for evaluation by the ~~appropriate~~ Sub-Committee on Navigation, Communications and Search and Rescue (NCSR Sub-Committee). -Amendments will only be adopted after consideration and approval ~~of the Maritime Safety Committee (MSC)~~ by the NCSR Sub-Committee.

7.2 Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

~~7.2~~ ~~Amendments to the service should normally be adopted at intervals of approximately two years or at such longer periods as may be determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned, will provide at least 12 months' notification and will come into force on 1 January of the following year, or another date as decided by the Committee.~~

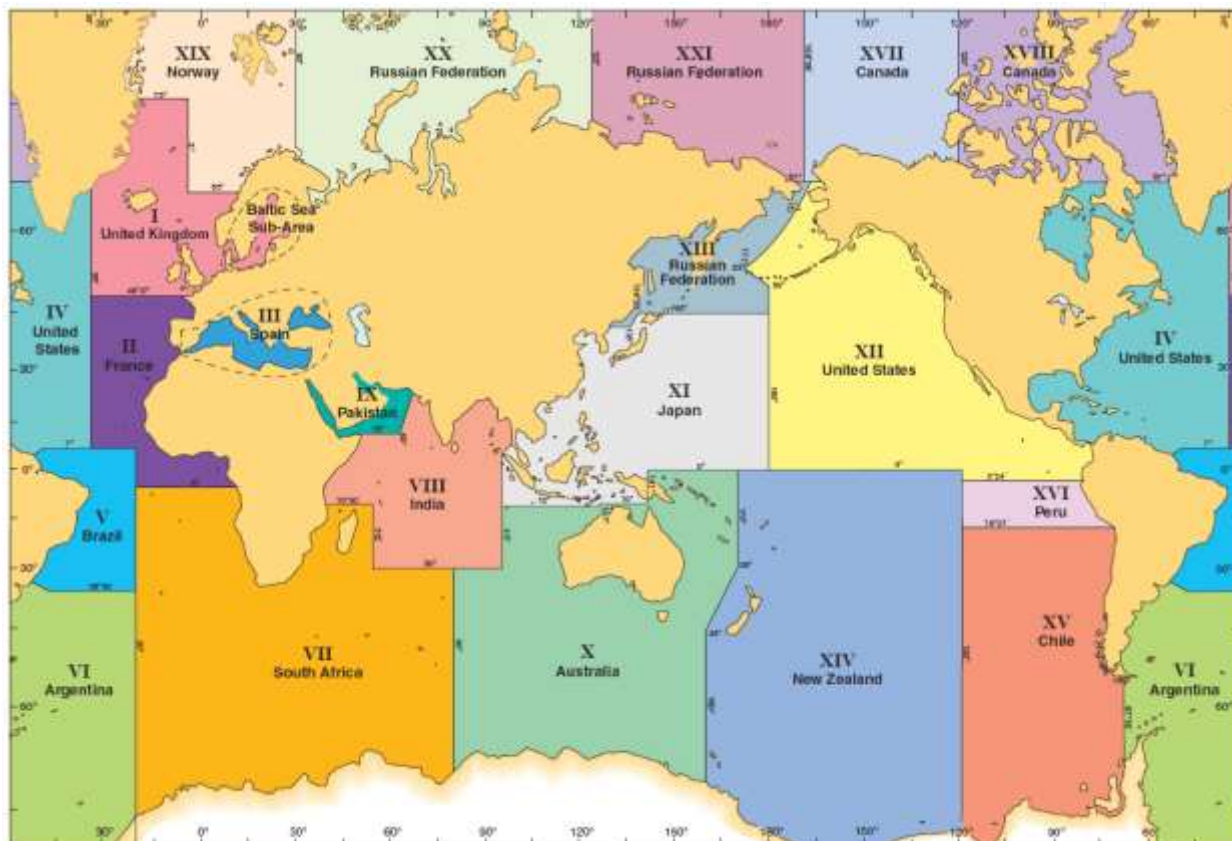
7.3 The agreement of the International Hydrographic Organization and the active participation of other bodies ~~must~~ shall should be sought according to the nature of the proposed amendments.

7.4 The schedule of broadcast times and frequencies for the WWNWS, being subject to frequent changes, will not be subject to these amendment procedures, but ~~must~~ shall should be coordinated through the IMO International [Enhanced Group Call] SafetyNET Coordinating Panel] or the IMO NAVTEX Coordinating Panel, as appropriate.

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APPENDIX

GEOGRAPHICAL AREAS FOR CO-ORDINATING AND PROMULGATING NAVAREA WARNINGS



The delimitation of these NAVAREAs is not related to and ~~should~~shall not prejudice the delimitations of any boundaries between States.

ANNEX 6

**DRAFT RESOLUTION MSC.[...(..)]
(adopted on ...)**

**REVISION OF
IMO/WMO WORLD-WIDE MET-OCEAN INFORMATION AND WARNING SERVICE –
GUIDANCE DOCUMENT (RESOLUTION A.1051(27))**

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO that, by resolution A.1051(27), the Assembly adopted the *IMO/WMO World-Wide Met-Ocean Information and Warning Service – Guidance Document*,

NOTING that the Assembly, at its twenty-seventh session, recommended that Member States implement the *IMO/WMO World-Wide Met-Ocean Information and Warning Service* and authorized the Committee to keep the aforementioned guidance document under review and update it as necessary in light of experience gained in its application,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue at its [sixth] session,

~~NOTING the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, in particular regulation V/5 (Safety of navigation – Meteorological services and warnings),~~

~~NOTING ALSO resolution A.1051(27) on *IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document*, in particular the Assembly's authorization of the Committee to keep the annexed guidance document under review and update it,~~

~~RECOGNIZING the importance of updating *IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document*,~~

~~TAKING INTO ACCOUNT the decision of the Sub-Committee on Navigation, Communications and Search and Rescue, at its [...] session, to revise the guidance document and its amendment procedure,~~

~~HAVING CONSIDERED, at its [...] session, the proposed revised text of the guidance document, in accordance with the procedure set out in its section 7,~~

1 ADOPTS the revised *Amendments to IMO/WMO World-w*W*ide Met-Ocean Information and Warning Service – Guidance Document*, the text of which is set out in the annex to the present resolution;

2 RECOMMENDS that Member States continue implementing the *IMO/WMO World-Wide Met-Ocean Information and Warning Service*, taking into account the *Revised Guidance Document*, as set out in the annex to the present resolution;

3 DETERMINES that the Amendments to IMO/WMO World-Wide Met-Ocean Information and Warning Service – Guidance Document should become effective on 1 January 2020.

~~2 DETERMINES that the revised IMO/WMO Worldwide Met-Ocean Information and Warning Service – Guidance Document shall be implemented from 1 January [2020];~~

~~3 INVITES Member States providing the Worldwide Met-Ocean Information and Warning Service to take account of the annexed revised guidance document;~~

~~4 INVITES ALSO Member States concerned to bring the contents of this resolution to the attention of all parties concerned;~~

~~5 RESOLVES that the provisions annexed to the present resolution supersede the provisions annexed to resolution A.1051(27).~~

ANNEX

REVISED IMO/WMO WORLD-WIDE MET-OCEAN INFORMATION AND WARNING SERVICE – ~~REVISED~~ GUIDANCE DOCUMENT

1 INTRODUCTION

1.1 The IMO/WMO World-Wide Met-Ocean Information and Warning Service (WWMIWS) is the internationally coordinated service for the promulgation of meteorological warnings and forecasts to vessels undertaking international or national voyages.

1.2 The purpose of this document is to provide specific guidance for the promulgation of meteorological warnings and forecasts. Its guidance does not apply to purely national services which supplement these internationally coordinated services.

1.3 WWMIWS coordinates the necessary meteorological information requirements outlined in the International Convention for the Safety of Life at Sea (SOLAS), 1974 (1974 SOLAS Convention), chapter V (Safety of Navigation), as amended (the SOLAS Convention, thereafter), regulation V/5 (Meteorological services and warnings), which states:

"2 In particular, Contracting Governments undertake to carry out, in cooperation, the following meteorological arrangements:

.10 To endeavour to obtain a uniform procedure in regard to the international meteorological services already specified, and, as far as is practicable, to conform to the Technical Regulations and recommendations made by the World Meteorological Organization, to which the Contracting Governments may refer for study and advice any meteorological question which may arise in carrying out the present Convention."

1.4 Resolution A.705(17), as amended, on the promulgation of ~~m~~Maritime ~~s~~Safety ~~i~~Information, sets out the organization, standards and methods which should be used for the promulgation and reception of ~~m~~Maritime ~~s~~Safety ~~i~~Information, including navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships, as documented in the 1974 1974-SOLAS Convention, as amended. The WMO Executive Council, at its sixty-first session (June 2009), requested WMO to establish and develop, in collaboration with IMO, terms of reference for the development of an IMO/WMO World-~~w~~Wide Met-Ocean Information and Warning Service ~~G~~guidance document (~~WWMIWS~~), to complement the existing IMO/IHO World-Wide Navigational Warning Services ~~G~~guidance ~~d~~document (~~WWNWS~~), provided in resolution A.706(17), as amended.

1.5 The regulatory framework for the provision of marine meteorological services within the new WMO GMDSS Marine Broadcast System was developed from Recommendation 3 (CMM-XI) in 1993, endorsed by the WMO Executive Council at its forty-fourth session. This new system reflects the evolution since the advent of the ~~Global Maritime Distress and Safety System (GMDSS)~~, as adopted by the Conference of Contracting Governments to the 1974 SOLAS Convention on the Global Maritime Distress and Safety System in November 1988, effective on 1 February 1992. The WMO GMDSS Marine Broadcast System is an integral part of WWMIWS.

1.6 Future amendments to this guidance document will be considered formally and approved by both WMO and IMO in accordance with the procedure set out in section 7.8. Proposed amendments should be evaluated by the World-Wide Met-Ocean Information and Warning Service Committee (WWMIWS-C) of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) ~~WMO Expert Team on Maritime Safety Services, Worldwide Met-Ocean Information and Warning Service Committee,~~ which includes an ex-officio representative of the IMO Secretariat, prior to any extensive WMO and IMO consideration.

2 DEFINITIONS

For the purposes of WWMIWS, the following definitions apply:

- .1 *Coastal and offshore ~~area waters~~* applies to areas for which WMO Members States issue weather and sea bulletins, governed by the procedures in the WMO No.558 — Manual on Marine Meteorological Services (WMO-No.558).
- ~~.22.~~ *Enhanced Group Call (EGC) means the system for the broadcast of coordinated Maritime Safety Information and Search and Rescue related information, to a defined geographical area using a recognized mobile satellite service.*
- ~~.23~~ *Global Maritime Distress and Safety System (GMDSS) means a system that performs the functions set out in SOLAS regulation IV/4, as amended. the global communications service based upon automated systems, both satellite and terrestrial, to provide distress alerting and promulgation of Maritime Safety Information for mariners.*
- ~~.34~~ *HF NBDP means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688.*
- ~~.5~~ *International Enhanced Group Call service means the coordinated broadcast of Maritime Safety Information and Search and Rescue related information, via the Enhanced Group Call system, using the English language.*
- ~~.6~~ *International Iridium service means the coordinated broadcast and automatic reception of Maritime Safety Information –and Search and Rescue related information via the Enhanced Group Call system, using the English language.*
- ~~.75~~ *International NAVTEX service means the coordinated broadcast and automatic reception on 518 kHz of Maritime Safety Information by means of narrow-band direct-printing telegraphy using the English language.¹*
- ~~.586~~ *International SafetyNET services means the coordinated broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information via the Inmarsat Enhanced Group Call (EGC) system, using the English language, in accordance with the provisions of the SOLAS International Convention for the Safety of Life at Sea, 1974, as amended.*

¹ As set out in the IMO NAVTEX Manual.

- ~~.697~~ *Issuing ~~s~~Service* means a National Meteorological and Hydrological Service (NMHS) or National Authority which has accepted responsibility for ensuring that meteorological warnings and forecasts for shipping are disseminated through the International Inmarsat SafetyNET EGC service to the designated ~~area~~ (METAREA) for which the Service NMHS or National Authority has accepted responsibility under the broadcast requirements of the GMDSS.²
- ~~.7108~~ *Maritime ~~s~~Safety ~~i~~Information (MSI)*³ means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- ~~.119~~ *Maritime ~~s~~Safety ~~i~~Information service* means the internationally and nationally coordinated network of broadcasts containing information, which is necessary for safe navigation.
- ~~.9120~~ *METAREA* means a geographical sea area⁴ established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should~~shall~~ not prejudice the delimitation of any boundaries between States.
- ~~.1031~~ *METAREA Coordinator* means the individual with the authority to coordinate ~~means the authority charged with coordinating M~~marine ~~M~~meteorological ~~i~~information broadcasts by one or more National Meteorological and Hydrological Services acting as Preparation or Issuing Services within the METAREA.
- ~~.142~~ *Meteorological information* means the marine meteorological warning and forecast information in accordance with the provisions of the International SOLAS Convention for the Safety of Life at Sea, 1974, as amended.
- ~~.1253~~ *National NAVTEX service* means the broadcast and automatic reception of Maritime Safety Information~~mMaritime ~~s~~Safety ~~i~~Information~~ by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- ~~.1364~~ *National ~~SafetyNET~~ Enhanced Group Call services*~~s~~ means sthe broadcasting and automated reception of Maritime Safety Information~~mMaritime ~~s~~Safety ~~i~~Information~~ via the ~~Inmarsat EGC~~system, using languages as decided by the Administration concerned.
- ~~.1754~~ *NAVAREA* means a geographical sea area⁵ established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should~~shall~~ not prejudice the delimitation of any boundaries between States.

² As defined in WMO-No 558.

³ As defined in regulation IV/2 of the International 1974 SOLAS Convention for the Safety of Life at Sea, 1974, as amended.

⁴ Which may include inland seas, lakes and waterways navigable by seagoing ships.

⁵ Which may include inland seas, lakes and waterways navigable by seagoing ships.

- ~~.1586~~ NAVTEX means the system for the broadcast and automatic reception of Maritime Safety Information ~~mMaritime sSafety iInformationMSI~~ by means of narrow-band direct-printing telegraphy.
- ~~.1697~~ NAVTEX Coordinator means the authority charged with operating and managing one or more NAVTEX stations broadcasting Maritime Safety Information ~~mMaritime sSafety iInformationMSI~~ as part of the International NAVTEX service.
- ~~.2048~~ NAVTEX coverage area means an area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in IMO resolution A.801(19), as amended.
- ~~.2149~~ NAVTEX service area means a unique and precisely defined sea area, wholly contained within the NAVTEX coverage area, for which Maritime Safety Information ~~Maritime Safety InformationMSI~~ is provided from a particular NAVTEX transmitter. It is normally defined by a line that takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region, as given in IMO resolution A.801(19), as amended.
- ~~.220~~ Other urgent safety-related information means Maritime Safety Information ~~Maritime Safety InformationMSI~~ broadcast to ships that is not defined as a navigational warning or meteorological information. This may include, but is not limited to, significant malfunctions or changes to maritime communications systems, and new or amended mandatory ship reporting systems or maritime regulations affecting ships at sea.
- ~~.2349~~ Preparation ~~s~~Service means a National Meteorological and Hydrological Service or National Authority which has accepted responsibility for the preparation of warnings and forecasts ~~and warnings~~ for parts of or an entire METAREA in the WMO system for the dissemination of meteorological forecasts and warnings to shipping under the GMDSS and for their transfer to the relevant Issuing Service for broadcast.
- ~~.242~~ Recognized mobile satellite service means any service which operates through a satellite system and is recognized by IMO, for use in the GMDSS.
- ~~.2153~~ SafetyNET means the international service for the broadcast and automatic reception of Maritime Safety Information and Search and Rescue related information ~~mMaritime sSafety iInformationMSI~~ via the Inmarsat EGC Enhanced Group Call system. SafetyNET International Enhanced Group Call receiving capability is part of the mandatory equipment which is required to be carried by certain ships in accordance with the provisions of the International SOLAS Convention for Safety of Life at Sea, 1974, as amended.
- ~~.25642~~ Sub-area means a subdivision of a NAVAREA/METAREA in which a number of countries have established a coordinated system for the promulgation of Maritime Safety Information ~~mMaritime sSafety iInformationMSI~~. The delimitation of such areas is not related to and should~~shall~~ not prejudice the delimitation of any boundaries between States.;
- ~~.26375~~ Sub-area Coordinator means the authority charged with coordinating, collating and issuing Sub-area warnings for a designated Sub-area.

~~.27486~~ User defined area means a temporary geographic area, either circular or rectangular, to which– Maritime Safety Information or Search and Rescue related information ~~in Maritime Safety Information MSI~~ is addressed.

~~.28597~~ UTC means Coordinated Universal Time which is equivalent to GMT (or ZULU) as the international time standard.

~~.2923068~~ In the operating procedures, coordination means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in ~~IMO~~ resolutions A.705(17), as amended, A.706(17), as amended, and A.1051(27), as amended.

3 METEOROLOGICAL INFORMATION BROADCASTS

3.1 Methods

3.1.1 ~~The~~ Two principal methods ~~are~~ used for broadcasting marine meteorological information as part of MSI in accordance with the provisions of the International SOLAS Convention for the Safety of Life at Sea, 1974, as amended, in the areas covered by these methods, are as follows:

- .1 NAVTEX: broadcasts to coastal ~~and offshore waters~~ areas; and
- .2 ~~SafetyNET~~ Enhanced Group Call: broadcasts to the geographical sea areas covered by an IMO recognised mobile satellite service. ~~which cover all the waters of the globe except for Sea Area A4, as defined by IMO resolution A.801(19), annex 3, as amended.~~

3.1.23 Information should be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above methods. Although there will be some duplication to allow a ship to change from one method to another, the majority of ~~messages~~ MSI will be broadcast either on NAVTEX or by EGC. ~~SafetyNET~~.

3.1.34 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.1.45 ~~SafetyNET~~ EGC broadcasts should be made in accordance with the standards and procedures set out in the IMO Manuals of the recognized mobile satellite service provider. ~~International SafetyNET Manual~~.

3.1.56 HF NBDP may be used to ~~promulgate-disseminate~~ promulgate ~~Maritime Safety meteorological information MSI~~ in areas outside ~~Inmarsat~~ EGC and NAVTEX coverage (SOLAS regulation IV/7.1.5).

3.1.76 In addition, Administrations may also provide ~~marine~~ meteorological warnings and forecasts ~~information~~ by other means. World Meteorological Organization WMO has organized

an Internet-based website portal to display MSI bulletins for each METAREA and some national services.

3.1.87 In the event of failure of normal transmission facilities, an alternative means of transmission should be utilized. A NAVAREA/METAREA warning and a coastal warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

3.2 Scheduling

3.2.1 Automated methods (NAVTEX/Enhanced Group Call)~~SafetyNET~~

3.2.1.1 At least two scheduled daily broadcast times are necessary to provide adequate promulgation for routine meteorological information.

3.2.1.42 Meteorological warnings are issued in a timely manner when hazardous conditions are expected to reach documented threshold values and updated, amended or cancelled, as appropriate, according to documented criteria~~should be broadcast as soon as possible or as dictated by the nature and timing of the event.~~ Normally, the initial broadcast should be made as follows:

- .1 for NAVTEX, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings; and
- .2 for ~~SafetyNET~~EGC, broadcast is immediate~~within 30 minutes of receipt of original information, or at the next scheduled broadcast.~~

3.2.1.23 Meteorological warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and in the IMO manuals of the recognized mobile satellite service provider~~International SafetyNET Manual, as appropriate.~~

~~3.2.1.3 At least two scheduled daily broadcast times are necessary to provide adequate promulgation of meteorological information.~~

3.2.2 Schedule changes

3.2.2.1 Broadcast times for NAVTEX are defined by the B1 character of the station, allocated by the IMO NAVTEX Coordinating Panel.

3.2.2.2 Times of scheduled broadcasts under the International ~~SafetyNET~~EGC service are coordinated through the [IMO International [Enhanced Group Call]~~SafetyNET~~] Coordinating Panel].

3.2.2.3 Information on broadcast schedules ~~and the content of~~for WMMIWS bulletins are contained in WMO-No. 9 (~~Weather Reports~~), Volume D, (Information for shipping).

3.3 Guidance

~~Operational guidance for handling and formatting meteorological information is given in the revised Joint IMO/IHO/WMO Manual on Maritime Safety Information, as approved under MSC.1/Circ.1310, as amended, the NAVTEX Manual, the International SafetyNET Manual and the Manual on Marine Meteorological Services (WMO No. 558).~~

3.4 — Language

~~3.4.1 — All meteorological information should be broadcast only in English in the International NAVTEX and SafetyNET EGC services.~~

~~3.4.2 — In addition to the required broadcasts in English, meteorological information may be broadcast in a national language using national NAVTEX and SafetyNET services and/or other means.~~

4 METEOROLOGICAL INFORMATION

4.1 General

4.1.1 Marine meteorological services are provided to satisfy the requirements for information on marine environmental conditions and phenomena, established by national practices and international conventions in relation to marine operations.

4.1.2 Marine meteorological services are designed for the safety of marine operations and to promote, where possible, the efficiency and economy of marine activities.

4.1.3 ~~There are three types of~~The WWMIWS guidance and coordination for marine meteorological ~~maritime safety information~~MSI messages issued on EGC, NAVTEX and HF NBDP communication systems covering the following areas:

- .1 warnings and forecasts ~~and warnings for the~~ hHigh sSeas~~;~~;
- .2 warnings and forecasts ~~and warnings for coastal~~ and offshore areas ~~and services~~ local waters (including for ports, lakes and harbour areas).

~~The Marine Meteorological Information guidance and coordination are involved with only two of them:~~

~~.1 — services for the High Seas, which will comprise:~~

~~.1 — warnings of gales and storms;~~

~~.2 — weather and sea bulletins, which have to include, in the order given hereafter:~~

~~Part I — Storm warnings;~~

~~Part II — Synopsis of major features of the surface weather chart and, to the extent possible, significant characteristics of corresponding sea surface conditions; and~~

~~Part III — Forecasts.~~

~~.2 — services for coastal and offshore areas, which will comprise warnings, synopses and forecasts.~~

4.1.4 Operational guidance for ~~handling and formatting~~ meteorological information is given in detail in the ~~Annex IV of the WMO Technical Regulations (Manual on Marine Meteorological Services (WMO-No. 558)~~ and the Joint IMO/IHO/WMO Manual on Maritime Safety Information. ~~It is summarized in the following sections 4.2 and 4.3.~~

4.2 Services for the High Seas

Marine meteorological services for the high seas include provision of:

.1 (a) meteorological warnings;

.2 (b) marine forecasts; and

.3 (c) sea-ice information services.

4.2.1 Meteorological Warnings

4.2.1.1 Warnings are issued for the following phenomena:

.1 (a) wind warnings of gale force (Beaufort force 8) and above; and

.2 (b) ice accretion.

~~Warnings have to be given for gales (Beaufort force 8 or 9) and storms (Beaufort force 10 or over), and for tropical cyclones (hurricanes in the North Atlantic and eastern North Pacific, typhoons in the Western Pacific, cyclones in the Indian Ocean and cyclones of similar nature in other regions).~~

4.2.1.2 4.2.1.2 The severity of wind warnings will use the following categories:

• .1 gale-force (Beaufort force 8 or 9);

• .2 storm-force (Beaufort force 10 or 11); and

.3 hurricane-force (Beaufort force 12 or over).

~~Warnings should include:~~

~~.1 type of warning;~~

~~.2 date and time of reference in UTC;~~

~~.3 location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;~~

~~.4 extent of affected area; and~~

~~.5 wind speed or force and direction in the affected areas.~~

4.2.1.32 ~~Warnings for other severe conditions such as poor visibility, severe dangerous sea states (swell, risk of abnormal waves), and unusual and hazardous sea-ice conditions ice accretion, etc., have also to be could be issued within some METAREAs, as necessary.~~

4.2.1.43 Warnings will include the following information:

.1 type and severity of warning;

.2 date and time of reference in UTC;

.3 location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;

.4 extent of affected area; and

.5 description of the warning phenomenon characteristics.

~~When no warnings for gales, storms or tropical cyclones are to be issued, that fact has to be positively stated in Part I of each weather and sea bulletin.~~

4.2.2 Synopses

~~4.2.2.1 Synopses will be broadcast as part of routine meteorological information, within Part II of weather and sea bulletins, and should have the following content and order of items:~~

~~.1 date and time of reference in UTC;~~

~~.2 synopsis of major features of the surface weather chart; and~~

~~.3 direction and speed of movement of significant pressure systems and tropical disturbances.~~

4.2.23 Marine Forecasts

4.2.23.1 Marine forecasts for the high seas are structured in three parts:

Part I: Warnings

Part II: Synopsis of major features

Part III: Forecasts

4.2.23.2 The valid period of the forecast will be at least 24 hours.

4.2.23.3 Part I will include a reference to current warnings issued for the area. This reference should shall be in the form of an identifier for a uniquely numbered or named warning, or include the relevant contents of the warning.

4.2.23.4 When no wind warnings are in effect, this fact will be explicitly stated within Part I of the marine forecast.

4.2.23.5 The synopsis of major features in Part II of the marine forecast will include details of significant low-pressure systems, significant fronts and tropical disturbances that are affecting, or are expected to affect, the area within or near the valid period of the forecast. The central pressure and/or intensity, location, movement and changes of intensity will be given for each system.

4.2.23.6 The forecast information provided s given in Part III of weather and sea bulletins marine forecasts should will have the following content and order of items include:

~~.1 the valid period of forecast;~~

~~.2 name or designation of forecast area(s) within the main MSI area; and~~

- ~~.3 — a description of:~~
- ~~.1 wind speed or force and direction;~~
- ~~.2 sea state; and~~
- ~~.3 visibility when forecast is less than ~~five~~ six nautical miles; and~~
- ~~.4 — ice accretion, where applicable.~~

~~4.2.23.27~~ The forecasts ~~should~~ include expected significant changes during the forecast period, significant hydrometeors such as freezing precipitation, snowfall or rainfall, ~~and an outlook for a period beyond 24 hours. In addition, phenomena such as breaking seas, cross seas and abnormal or rogue waves should also be included, if feasible.~~

4.2.34 Sea-ice information

4.2.34.1 Sea-ice information services will provide the limits of sea ice and icebergs, where ice conditions pose a hazard to navigation.

4.2.34.2 Sea-ice information services could include information about sea-ice concentration and stage of development.

4.2.34.3 Descriptions of the limit of all known ice, ice edge or iceberg risk are given using latitude and longitude coordinates. The location of the ice, ice edge or iceberg risk are given relative to the limit.

4.3 Services for the coastal, ~~and offshore~~ and local waters areas

4.3.1.4 Marine meteorological services for coastal, offshore and local waters areas are similar to those for the high seas, but modified according to local requirements.

4.3.24.2 Naming conventions, the extent of inshore and offshore boundaries, and land boundary reference points, for areas referenced in marine forecasts will be clearly defined and documented in relevant publications.

4.3.4.3 Forecasts and warnings for coastal, offshore and local waters should be considered as complementary to the high seas forecasts and warnings for ships navigating close to the coast.

~~Services for the coastal and offshore areas should consist of:~~

~~4.3.1 — Warnings~~

~~4.3.1.1 When included, warnings have to be placed at the beginning of the bulletin.~~

~~4.3.1.2 Warnings have to be given for:~~

- ~~.1 — tropical cyclones (hurricanes in the North Atlantic and eastern North Pacific, typhoons in the Western Pacific, cyclones in the Indian Ocean and cyclones of similar nature in other regions);~~
- ~~.2 — gales (Beaufort force 8 or 9) and storms (Beaufort force 10 or over); and~~
- ~~.3 — ice accretion.~~

4.3.2 — Synopses and forecasts

4.3.2.1 Synopses and forecasts should have the following content:

- .1 — a synopsis of major features of the surface weather chart;
- .2 — the valid period of forecast;
- .3 — name or designation of forecast area(s); and
- .4 — a description of:
 - .1 — wind speed or force and direction;
 - .2 — visibility when forecast is less than five nautical miles;
 - .3 — ice accretion, where applicable; and
 - .4 — sea and swell.

5 METEOROLOGICAL WARNING BROADCAST REQUIREMENTS

5.1 Language

5.1.1 All meteorological information should be broadcast only in English in the International NAVTEX and International EGC services.

5.1.2 In addition to the required broadcasts in English, meteorological information may be broadcast in a national language using a National NAVTEX and National SafetyNET EGC services and/or other means.

5.1.3 Marine meteorological services for broadcast on NAVTEX should be prepared using the accepted abbreviations outlined in appendix 1.2 or within the WMO Manual on Marine Meteorological Services (WMO-No. 558).

5.2 Guidance

5.2.1

Operational guidance for handling and formatting meteorological information is given in the Joint IMO/IHO/WMO Manual on Maritime Safety Information, the IMO NAVTEX Manual, the IMO International SafetyNET Manual, manuals of the recognized mobile satellite service provider and the WMO Manual on Marine Meteorological Services (WMO-No. 558).

56 ISSUING AND PREPARATION SERVICES

56.1 Issuing service Responsibilities

An issuing service is a National Meteorological Service which has accepted responsibility for ensuring that meteorological forecasts and warnings for shipping are disseminated through the Inmarsat SafetyNET and NAVTEX services to the designated area for which the Service has accepted responsibility under the broadcast requirements of the GMDSS. The warnings and forecasts and warnings for broadcasts may have been prepared solely by the issuing service, or by another preparation service, or a combination of both, on the basis of negotiations between the services concerned, or otherwise, as appropriate.

6.1.1 The ~~issuing~~ Sservice is responsible for composing a complete broadcast bulletin on the basis of information input from the relevant ~~preparation~~ Preparation Sservices and for broadcasting this in accordance with the guidelines contained within the ~~IMO International SafetyNET Manual~~ manuals of the recognized mobile satellite service provider and the ~~International~~ IMO NAVTEX Manual.

6.1.2 The ~~issuing~~ Sservice is also responsible for monitoring the broadcasts of ~~SafetyNET~~ their MSI information to ~~their~~ its designated area of responsibility.

6.1.3 The ~~p~~Preparation ~~s~~Service is responsible for providing the relevant information to the ~~issuing~~ sService.

NOTES:

- (1) ~~For some METAREAS there may be only one preparation service, which will be the same National Meteorological Service as the issuing service (e.g. United Kingdom for area I, Argentina for area VI and Australia for area X).~~
- (2) ~~An appropriate format for the attribution of the origins of the forecast and warning information contained in a broadcast bulletin may be developed on the basis of negotiations among the services concerned.~~
- (3) ~~In situations where appropriate information, data or advice from other designated preparation services for a given area of responsibility is not available, it is the responsibility of the issuing service for that area to ensure that complete broadcast coverage for the area is maintained.~~

5.2 — Preparation service

~~A preparation service is a National Meteorological Service which has accepted responsibility for the preparation of warnings and forecasts and warnings for parts of, or an entire, designated area (METAREA) in the WMO system for the dissemination of meteorological warnings and forecasts and warnings to shipping under the GMDSS and for their transfer to the relevant issuing service for broadcast.~~

67 METAREA COORDINATOR RESOURCES AND RESPONSIBILITIES

76.1 METAREA Coordinator resources

7.1.1 The METAREA Coordinator ~~should~~ must have:

- .1 the expertise and information resources of ~~National Meteorological and Hydrological Services (NMHS)~~ or equivalent National Authority; and
- .2 effective means of communication such as, e.g. telephone, email, facsimile and, Internet, etc., with ~~National Meteorological and Hydrological Services~~ NMHS and National Authorities in the METAREA, with other METAREA Coordinators and with other data providers; and;
- .3 access to broadcast systems for transmission to the navigable waters of the METAREA. As a minimum, this should include those described in

paragraph— 3.1.1. Reception should normally be possible at least 300 nautical miles beyond the limit of the METAREA.

67.2 METAREA Coordinator responsibilities

67.2.1 The METAREA Coordinator ~~should~~must:

- .1 act as the central point of contact on matters relating to meteorological information and warnings within the METAREA;
- .2 promote and oversee the use of established international standards and practices in the ~~promulgation~~dissemination of meteorological information and warnings throughout the METAREA;
- .3 coordinate preliminary discussions between neighbouring Members, seeking to establish and operate NAVTEX services, prior to formal application;
- .4 coordinate the dissemination of meteorological bulletins on the WMO Information System (WIS), and ensure the correct display of ~~SafetyNET~~ and MSI messages on the WWMIWS website;
- .5 liaise with entities that have responsibility for maritime safety, marine communications, port authorities and other relevant maritime responsibilities on the effective use of meteorological information and warning services;
- .6 act as a coordination point for implementation of WMO strategic initiatives under the WMO Services Delivery Framework, including verification, quality management, Marine Forecaster Competency framework and resilience activities;
- .7 be responsible for maintaining details of marine weather services and marine communications relevant for international service documentation such as Weather Reporting (WMO No-9), Volume D – Information for Shipping, IMO GMDSS Master Plan, ITU List IV – List of Coast Stations and Special Service Stations ~~UKHO Admiralty List of Radio Signals~~ or other relevant nautical publications of national Administrations;
- .8 contribute to the development of international standards and practices through attendance and participation in the ~~IMO/WMO Worldwide Met-Ocean Information and Warning Service Committee meetings of the WWMIWS-C of JCOMM~~ JCOMM Expert Team on Maritime Safety Services meetings, and also attend and participate in relevant IMO, IHO and WMO meetings as appropriate and required;
- .59 monitor the broadcasts which they originate, to ensure that the information has been correctly broadcast; and
- .610 take into account the need for contingency planning.

67.2.2 The METAREA Coordinator has to also ensure that within ~~its~~their METAREA, ~~National Meteorological and Hydrological Services~~NMHS and National Authorities ~~which~~that act as ~~Issuing~~ Services have the capability to:

- .1 select meteorological information and warnings for broadcast in accordance with the guidance given in in the WMO Manual on Marine Meteorological Services (WMO-No. 558) paragraphs 4 and 5 above;
- .2 provide insights and monitor changes in customer requirements for updates to the WMO Guide on Marine Meteorological Services (WMO-No. 471); and
- .3 ensure meteorological information is drafted in accordance with the Joint IMO/IHO/WMO Manual on Maritime Safety Information; and
- .43 monitor the ~~SafetyNET~~ MSI transmission of their bulletins that are broadcast by the Issuing Service within the respective METAREA.

67.2.3 The METAREA Coordinator has to further ensure that within ~~its~~ their METAREA, ~~National Meteorological and Hydrological Services~~ NMHS and National Authorities ~~which~~ that act as Preparation Services have the capability to:

- .1 ~~endeavour to~~ be informed of gather information on all meteorological events that could significantly affect the safety of navigation within their area of responsibility;
- .2 assess all meteorological information immediately upon receipt in the light of expert knowledge for relevance to navigation within their area of responsibility;
- .3 forward marine meteorological information that may require wider promulgation directly to adjacent METAREA Coordinators and/or others as appropriate, using the quickest possible means;
- .4 ensure that information concerning all meteorological warning subject areas listed in the Manual on Marine Meteorological Services, (WMO-No. 558) paragraph 4 that may ~~not~~ require a METAREA warning within their own area of responsibility is forwarded immediately to the appropriate National Meteorological Services and METAREA Coordinators affected by the meteorological event;
- .5 provide insights and monitor changes in customer requirements for updates to the WMO Guide on Marine Meteorological Services (WMO-No. 471); and
- .56 maintain records of source data relating to METAREA warnings and forecasts in accordance with the requirement of the national Administration of the METAREA Coordinator. ~~meteorological information and warning messages within their area of responsibility.~~

8 PROCEDURE FOR AMENDING THE WORLD-WIDE MET-OCEAN INFORMATION AND WARNING SERVICE – ~~GUIDANCE DOCUMENT~~

87.1 ~~Proposed~~ Proposals for amendments or enhancement of ~~to~~ the IMO/WMO World-Wide Met-Ocean Information and Warning Service should be submitted for evaluation by the Sub-Committee on appropriate Navigation, Communications and Search and Rescue (NCSR Sub-Committee). Amendments will only be adopted after the consideration and approval by ~~of~~ the Maritime Safety NCSR Sub-Committee ~~or evaluation.~~

~~87.2 — Amendments to the service should normally come into force be adopted at intervals of approximately two years or at such longer periods as determined by the Maritime Safety Committee at the time of adoption. Amendments adopted by the Maritime Safety Committee will be notified to all concerned, will provide at least 12 months' notification and will come into force on 1 January of the following year, or another date as decided by the Committee.~~

8.2 — Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year, or at another date as decided by the Committee.

87.3 The agreement of the World Meteorological Organization and the active participation of other bodies ~~should~~shall be sought according to the nature of the proposed amendments.

~~87.4 — When the proposals for amendment have been examined in substance, the Maritime Safety Committee will entrust the Sub-Committee on Navigation, Communications and Search & Rescue (NCSR) with the ensuing editorial tasks.~~

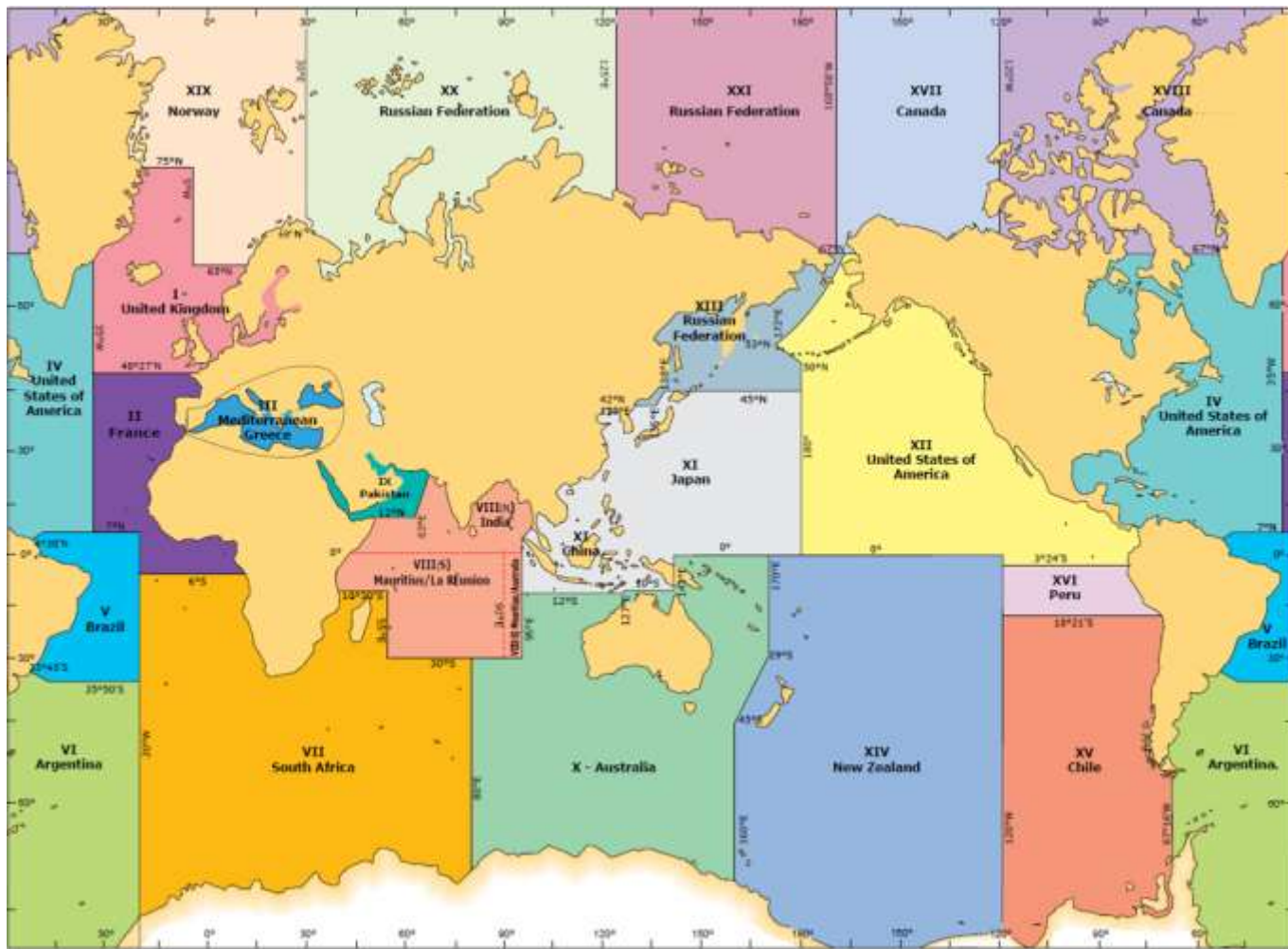
7.54 The METAREA schedule of broadcast times and frequencies for WMMIWS, ~~not being an integral part of the service and~~ being subject to frequent changes, will not be subject to the ~~se~~ amendment procedures, but shall be coordinated through the [IMO International [Enhanced Group Call SafetyNET] Coordinating Panel] or the IMO NAVTEX Coordinating Panel, as appropriate.

~~8.2 — Amendments to the service should be adopted at intervals as determined by the Maritime Safety Committee. Amendments adopted by the Maritime Safety Committee will be notified to all concerned and will come into force on 1 January of the following year.~~

APPENDIX

GEOGRAPHICAL AREAS FOR CO-ORDINATING AND PROMULGATING METAREA WARNINGS AND FORECASTS

~~METAREAS for coordinating and promulgating meteorological warnings and forecasts~~





The delimitation of ~~such areas~~ these METAREAS is not related to and should not prejudice the delimitations of any boundaries between States

ANNEX 7

DRAFT AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, AS AMENDED

CHAPTER III LIFE-SAVING APPLIANCES AND ARRANGEMENTS

PART B REQUIREMENTS FOR SHIPS LIFE-SAVING APPLIANCES

Regulation 6 – Communications

1 Existing paragraphs 1 and 2 are replaced with the following:

"1 [Reserved¹]

2 [Reserved¹]

¹ This regulation has been moved to chapter IV."

CHAPTER IV RADIOCOMMUNICATIONS

PART A GENERAL

Regulation 1 – Application

1 Unless expressly provided otherwise, this chapter applies to all ships to which the present regulations apply and to cargo ships of 300 gross tonnage and upwards.

2 This chapter does not apply to ships to which the present regulations would otherwise apply while such ships are being navigated within the Great Lakes of North America and their connecting and tributary waters as far east as the lower exit of the St Lambert Lock at Montreal in the Province of Quebec, Canada.¹

3 No provision in this chapter shall prevent the use by any ship, survival craft or person in distress, of any means at their disposal to attract attention, make known their position and obtain help.

Regulation 2 –Terms and definitions

1 For the purpose of this chapter, the following terms shall have the meanings defined below:

¹ Such ships are subject to special requirements relative to radio for safety purposes, as contained in the relevant agreement between Canada and the United States of America.

- .1 AIS-SART means an Automatic Identification System Search and Rescue Transmitter capable of operating on frequencies dedicated for AIS (161.975 MHz (AIS1) and 162.025 MHz (AIS2)).
- .42 Bridge-to-bridge communications means safety radiocommunications between ships from the position from which the ships are normally navigated.
- .23 Continuous radio watch means that the radio and listening watch concerned shall not be interrupted other than for brief intervals when the ship's receiving capability is impaired or blocked by its own communications or when the facilities are under periodical maintenance or checks.
- .34 Digital selective calling (DSC) means a technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations, and complying with the relevant recommendations of the International Radio Consultative Committee (CCIR) Telecommunication Union Radiocommunication Sector (ITU-R).²
- .45 Direct-printing telegraphy means automated telegraphy techniques which comply with the relevant recommendations of the International Radio Consultative Committee (CCIR) Telecommunication Union Radiocommunication Sector (ITU-R).³
- 6 Emergency Position Indicating Radio Beacon (EPIRB) means a transmitter operating on 406 MHz capable of, transmitting a distress alert via satellite to a Rescue Coordination Centre, and transmitting signals for on-scene locating.
- .7 Enhanced Group Call (EGC) means the broadcast of coordinated Maritime Safety Information and Search and Rescue related Information, to a defined geographical area using a recognized mobile satellite service.
- .58 General radiocommunications means operational communications and public correspondence traffic, other than distress, urgency and safety communications. messages, conducted by radio.
- .9 Global Maritime Distress and Safety System (GMDSS) means a system that performs the functions set out in regulation 4.1.1.
- .1610 Global maritime distress and safety system (GMDSS) identities means maritime mobile services identity, the ship's call sign, recognized mobile satellite service identities and serial number identity which may be transmitted by the ship's equipment and used to identify the ship. information which may be transmitted to uniquely identify the ship or its associated rescue boats and survival craft. These identities are the ship's call sign, Maritime Mobile Service Identity (MMSI), EPIRB hexadecimal identity, recognized mobile satellite service identities and equipment serial numbers.

² The name of the Committee was changed to "ITU Radiocommunication Sector" (ITU-R) due to Article 1 of the International Telecommunication Constitution, Geneva, 1992.

³ The name of the Committee was changed to "ITU Radiocommunication Sector" (ITU-R) due to Article 1 of the International Telecommunication Constitution, Geneva, 1992.

- ~~.6~~ ~~Inmarsat⁴ means the Organization established by the Convention on the International Maritime Satellite Organization adopted on 3 September 1976.~~
- ~~.7~~ ~~11~~ *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of Maritime Safety Information and [Search and Rescue related information] by means of narrow-band direct-printing telegraphy using the English language.⁵
- ~~.8~~ ~~12~~ *Locating* means the finding of ships, aircraft, ~~units~~ survival craft or persons in distress.
- ~~.9~~ ~~13~~ *Maritime sSafety iInformation⁶* means navigational and meteorological warnings, meteorological forecasts and other urgent safety related messages broadcast to ships.
- ~~.4~~ ~~14~~ ~~14~~ *Radio Regulations* means the Radio Regulations annexed to, or regarded as being annexed to, the most recent International Telecommunication Convention complementing the Constitution and the Convention of the International Telecommunication Union which is in force at any time.
- ~~.4~~ ~~7~~ ~~15~~ *Recognized mobile satellite service* means any service which operates through a satellite system and is recognized by the Organization, for use in the global maritime distress and safety system (GMDSS).
- ~~.4~~ ~~0~~ ~~16~~ *Polar orbiting Satellite service on 406MHz* means a service which is based on polar orbiting satellites which receive and relay distress alerts from satellite EPIRBs and which provides their position. operating through a satellite system having global availability designed to detect distress beacons transmitting in the frequency band from 406.0 to 406.1 MHz.
- ~~.1~~ ~~7~~ *SART* means a Search and Rescue Transponder operating on radar frequencies in the 9 GHz (9.2 – 9.5 GHz) band.
- ~~.4~~ ~~2~~ ~~18~~ *Sea area A1* means an area within the radiotelephone coverage of at least one Very High Frequency (VHF) coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.⁷
- ~~.4~~ ~~3~~ ~~19~~ *Sea area A2* means an area, excluding sea area A1, within the radiotelephone coverage of at least one Medium Frequency (MF) coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government.⁸
- ~~.4~~ ~~4~~ ~~20~~ *Sea area A3* means an area, excluding sea areas A1 and A2, within the coverage of an Inmarsat geostationary satellite a recognized mobile satellite

⁴ ~~The name of the Organization was changed to "International Mobile Satellite Organization" (Inmarsat) by virtue of amendments to its Convention and Operating Agreement adopted by the 10th (extraordinary) Assembly (5 to 9 December 1994).~~

⁵ Refer to the NAVTEX Manual (IMO publication, sales number ID951E).

⁶ Refer to the Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI).

⁷ Refer to Provision of radio services for the global maritime distress and safety system (GMDSS) (resolution A .801(19), as amended).

⁸ Refer to Provision of radio services for the global maritime distress and safety system (GMDSS) (resolution A .801(19), as amended).

service supported by the ship earth station carried on board, in which continuous alerting is available.

.1521 Sea area A4 means an area outside of sea areas A1, A2 and A3.

2 All other terms and abbreviations which are used in this chapter and which are defined in the Radio Regulations and in the International Convention on Maritime Search and Rescue (SAR), 1979, as may be amended, shall have the meanings as defined in those Regulations and the SAR Convention.

Regulation 3 – Exemptions

1 The Contracting Governments consider it highly desirable not to deviate from the requirements of this chapter; nevertheless the Administration may grant partial or conditional exemptions to individual ships from the requirements of regulations 7 to 11 provided:

- .1 such ships comply with the functional requirements of regulation 4; and
- .2 the Administration has taken into account the effect such exemptions may have upon the general efficiency of the service for the safety of all ships.

2 An exemption may be granted under paragraph 1 only:

- .1 if the conditions affecting safety are such as to render the full application of regulations 7 to 11 unreasonable or unnecessary; or
- .2 in exceptional circumstances, for a single voyage outside the sea area or sea areas for which the ship is equipped.

3 Each Administration shall submit to the Organization all exemptions granted under paragraphs 1 and 2[, giving the reasons for granting such exemptions] ~~Each Administration shall submit to the Organization[, as soon as possible after the first of January in each year, a report showing] all exemptions granted under paragraphs 1 and 2 [during the previous calendar year and giving the reasons for granting such exemptions].⁹~~

Regulation 4 – Functional requirements¹⁰

1 Every ship, while at sea, shall be capable of:

- .1 performing the GMDSS functions as follows:¹¹
 - .1 ~~except as provided in regulations 8.1.1 and 10.1.4.3, of~~ transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;
 - .2 ~~of~~ receiving shore-to-ship distress alerts ~~relays~~;

⁹ Exemptions should be reported through the Organization's Global Integrated Shipping Information System (GISIS) with reference to SLS.14/Circ.115, as amended, on issue of exemption certificates.

¹⁰ It should be noted that ships performing GMDSS functions should use Guidance for avoidance of false distress alerts (resolution A.814(19)).

¹¹ It should be noted that ships performing GMDSS functions should use the Guidance for avoidance of false distress alerts adopted by the Organization by resolution A.814(19).

- .3 ~~of~~ transmitting and receiving ship-to-ship distress alerts;
 - .4 ~~of~~ transmitting and receiving search and rescue coordinating communications;
 - .5 ~~of~~ transmitting and receiving on-scene communications;
 - .6 ~~of~~ transmitting and, as required by regulation V/19 .2 .3 .2, receiving signals for locating;¹²
 - .7 ~~of transmitting and receiving¹³ maritime safety information~~ receiving MSI;
 - .8 transmitting and receiving ~~general~~ urgency and safety radiocommunications ~~to and from shore-based radio systems or networks subject to regulation 15.8;~~ and
 - .9 ~~of~~ transmitting and receiving bridge-to-bridge communications.
- .2 transmitting and receiving general radiocommunications.

Regulation 4-1 – GMDSS satellite providers

The Maritime Safety Committee shall determine the criteria, procedures and arrangements for the evaluation, recognition, review and oversight of the provision of ~~recognized mobile satellite communication~~ services in the ~~Global Maritime Distress and Safety System (GMDSS)~~ pursuant to the provisions of this chapter.¹⁴

¹² Refer to Carriage of radar operating in the frequency band 9,300–9,500 MHz (resolution A.614(15)).

¹³ ~~It should be noted that ships may have a need for reception of certain maritime safety information while in port.~~

¹⁴ Refer to Criteria for the provision of mobile satellite communication systems in the Global Maritime Distress and Safety System (GMDSS) (resolution A .1001(25)) and Guidance to prospective GMDSS satellite service providers (MSC.1/Circ.1414).

PART B
UNDERTAKINGS BY CONTRACTING GOVERNMENTS¹⁵

Regulation 5 – Provision of radiocommunication services

1 Each Contracting Government undertakes to make available, as it deems practical and necessary either individually or in cooperation with other Contracting Governments, appropriate shore-based facilities for space and terrestrial radiocommunication services having due regard to the recommendations of the Organization.¹⁶ These services are:

- .1 ~~a radiocommunication recognized mobile satellite service utilizing geostationary satellites in the maritime mobile-satellite service;~~
- .2 ~~a radiocommunication service utilizing polar orbiting satellites in the mobile satellite service on 406 MHz;~~
- .3 the maritime mobile service in the bands between 156 MHz and 174 MHz;
- .4 the maritime mobile service in the bands between 4,000 kHz and 27,500 kHz; and
- .5 the maritime mobile service in the bands between 415 kHz and 535 kHz¹⁷ and between 1,605 kHz and 4,000 kHz .

2 Each Contracting Government undertakes to provide the Organization with pertinent information concerning the shore-based facilities in the ~~mobile satellite service and maritime mobile service, mobile-satellite service and maritime mobile-satellite service~~, established for sea areas which it has designated off its coasts. [Each Contracting Government also undertakes to provide the Organization with at least [n] year(s) notice prior to the withdrawal of any of these services.]¹⁸

Regulation 5-1 – ~~Global maritime distress and safety system~~ GMDSS identities

1 This regulation applies to all ships on all voyages.

2 Each Contracting Government undertakes to ensure that suitable arrangements are made for registering ~~global maritime distress and safety system (GMDSS)~~ identities and for making information on these identities available to rescue coordination centres on a 24-hour basis. Where appropriate, international organizations maintaining a registry of these identities, such as the ITU ~~Maritime mobile Access and Retrieval System database (MARS)~~ shall be notified by the Contracting Government of these assignments.

¹⁵ 1 Each Contracting Government is not required to provide all radiocommunication services.

¹⁶ 2 The requirements should be specified for shore-based facilities to cover the various sea areas.

¹⁶ Refer to Provision of radio services for the global maritime distress and safety system (GMDSS) (resolution A.801(19), as amended).

¹⁷ Refer to Implementation of the NAVTEX system as a component of the World-Wide Navigational Warning Service (resolution A.617(15)).

¹⁸ The Master Plan of shore-based facilities for the GMDSS based on information provided by Contracting Governments is circulated to all concerned by means of GMDSS circulars.

PART C

SHIP REQUIREMENTS

Regulation 6 – Radio installations

1 Every ship shall be provided with radio installations capable of complying with the functional requirements prescribed by regulation 4 throughout its intended voyage and, unless exempted under regulation 3, complying with the requirements of regulation 7 and, as appropriate for the sea area or areas through which it will pass during its intended voyage, the requirements of either regulation 8, 9, 10 or 11.

2 Every radio installation shall:

- .1 be so located that no harmful interference of mechanical, electrical or other origin affects its proper use, and so as to ensure electromagnetic compatibility and avoidance of harmful interaction with other equipment and systems;
- .2 be so located as to ensure the greatest possible degree of safety and operational availability;
- .3 be protected against harmful effects of water, extremes of temperature and other adverse environmental conditions;
- .4 be provided with reliable, permanently arranged electrical lighting, independent of the main and emergency sources of electrical power, for the adequate illumination of the radio controls for operating the radio installation; and
- .5 be clearly marked with the ~~call sign, the ship station identity and other codes~~ GMDSS identities as applicable for the use by of the radio installation operator.

3 Control of the VHF radiotelephone channels, required for navigational safety, shall be immediately available on the navigation bridge convenient to the conning position and, where necessary, facilities should be available to permit radiocommunications from the wings of the navigation bridge. Portable VHF equipment may be used to meet the latter provision.

4 In passenger ships, a distress panel shall be installed at the conning position, ~~which shall:~~

- .1 ~~This panel shall~~ contain either one single button which, when pressed, initiates a distress alert using all radiocommunication installations required on board for that purpose or one button for each individual installation; ~~–~~
- .2 ~~The panel shall~~ clearly and visually indicate whenever any button or buttons have been pressed; ~~–~~ and
- .3 ~~be provided with means~~ shall be provided to prevent inadvertent activation of the button or buttons referred to in paragraphs 4.1 and 4.2.

5 In passenger ships, if an ~~If the satellite~~ EPIRB is used as the secondary means of distress alerting and is not remotely activated from the distress panel, it shall be acceptable to have an additional EPIRB installed in the wheelhouse near the conning position.

~~5 In passenger ships, information on the ship's position shall be continuously and automatically provided to all relevant radiocommunication equipment to be included in the initial distress alert when the button or buttons on the distress panel is pressed.~~

6 In passenger ships, a distress alarm panel shall be installed at the conning position¹⁹, which:

- .1 ~~The distress alarm panel~~ shall provide visual and aural indication of any distress alert or alerts received on board; ~~and~~
- .2 shall ~~also~~ indicate through which radiocommunication service the distress alerts have been received; ~~and~~
- .3 may be combined with the distress panel.

Regulation 7 – Radio equipment: General

1 Every ship shall be provided with:

- .1 a VHF radio installation capable of transmitting and receiving:
 - ~~.4.1~~ DSC on the frequency 156 .525 MHz (channel 70). It shall be possible to initiate the transmission of distress alerts on channel 70 from the position from which the ship is normally navigated;¹⁹ and
 - ~~.4.2~~ radiotelephony on the frequencies 156 .300 MHz (channel 6), 156 .650 MHz (channel 13) and 156 .800 MHz (channel 16);
- .2 a radio installation capable of maintaining a continuous DSC watch on VHF channel 70 which may be separate from, or combined with, that required by subparagraph 1.1;²⁰
- .3 ~~a search and rescue locating device capable of operating either in the 9 GHz band or on frequencies dedicated for AIS~~ a SART or an AIS-SART, which:
 - ~~.3.1~~ shall be so stowed that it can be easily utilized; and
 - ~~.3.2~~ may be one of those required by ~~regulation III/6 .2 .2 for a survival craft~~ paragraph 3 or 4;
- ~~.4 a receiver capable of receiving international NAVTEX service broadcasts if the ship is engaged on voyages in any area in which an international NAVTEX service is provided~~
- .4 receiver(s) capable of receiving MSI and SAR related information throughout the entire voyage the vessel is engaged on:

¹⁹ ~~Certain ships may be exempted from this requirement (see regulation 9.4).~~

²⁰ ~~Certain ships may be exempted from this requirement (see regulation 9.4).~~

- .1 if the ship is engaged on voyages in any area for which an International NAVTEX service is declared, an International NAVTEX receiver; and
- .2 if the ship is engaged on voyages beyond the area for which International NAVTEX service is declared, then reception by either:
 - .1 a recognized mobile satellite service using an EGC receiver; and/or
 - .2 a HF direct-printing telegraphy MSI service receiver in areas for which an HF direct-printing telegraphy MSI service is declared.
- ~~.5 a radio facility for reception of maritime safety information by a recognized mobile satellite service enhanced group calling system if the ship is engaged in voyages in sea area A1, or A2 or A3 but in which an international NAVTEX service is not provided. However, ships engaged exclusively in voyages in areas where an HF direct-printing telegraphy maritime safety information service is provided and fitted with equipment capable of receiving such service, may be exempt from this requirement.~~ ²¹
- .65 subject to the provisions of regulation 8.3, a satellite emergency position-indicating radio beacon (satellite an EPIRB)²² which shall be:
 - ~~.6.1 capable of transmitting a distress alert through the polar orbiting satellite service operating in the 406 MHz band;~~
 - 6.2.1 installed in an easily accessible position;
 - 6.3.2 ready to be manually released and capable of being carried by one person into a survival craft;
 - 6.4.3 capable of floating free if the ship sinks and of being automatically activated when afloat; and
 - 6.5.4 capable of being activated manually.
- .6 a radio installation capable of transmitting and receiving general radio communication~~to and from shore based systems or networks~~. This requirement may be fulfilled by the addition of this capability in the equipment required by regulations 8, 9, 10 or 11.

[2 Every cargo ship of 300 gross tonnage and upwards but less than 500 gross tonnage shall be provided with at least:

- .1 one SART or AIS-SART; and
- .2 two two-way VHF radio-telephone apparatus, either portable or fitted separately in survival crafts.

²¹ ~~Refer to Recommendation on promulgation of maritime safety information (resolution A.705(17), as amended).~~

²² ~~Refer to Search and rescue homing capability (resolution A.616(15)).~~

3 Every passenger ship and every cargo ship of 500 gross tonnage and upwards shall be provided with at least:

- .1 one SART or AIS-SART on each side of the ship; and
- .2 three two-way ~~VHF~~ radio-telephone apparatus, either portable or fitted separately in survival crafts.]

[4 The SARTs or AIS-SARTs required by paragraph 3.1 or 4.1, shall be stowed in such locations that they can be rapidly placed in any survival craft other than a liferaft required by regulation III/31.1.4. Alternatively, one SART or AIS-SART shall be stowed in each survival craft other than a liferaft required by regulation III/31.1.4. On ships carrying at least two SARTs or AIS-SARTs and equipped with free-fall lifeboats one of the SARTs or AIS-SARTs shall be stowed in a free-fall lifeboat and the other located in the immediate vicinity of the navigating bridge so that it can be utilized on board and ready for transfer to any of the other survival craft.]

25 Every passenger ship shall be provided with means for two-way on-scene radiocommunications for search and rescue purposes using the aeronautical frequencies 121.5 MHz and 123.1 MHz from the position from which the ship is normally navigated. This means may be portable.

Regulation 8 – Radio equipment: Sea area A1

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages exclusively in sea area A1 shall be provided with a radio installation capable of initiating the transmission of ship-to-shore distress alerts from the position from which the ship is normally navigated, operating either:

- ~~.1 on VHF using DSC; this requirement may be fulfilled by the EPIRB prescribed by paragraph 3, either by installing the EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or~~
- .21 through the polar-orbiting satellite service on 406 MHz; this requirement may be fulfilled by: the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or
 - .1 installing the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float-free of the ship in an emergency; or
 - .2 installing the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or
- .3 installing a second EPIRB near the position from which the ship is normally navigated.
- .32 if the ship is engaged on voyages within coverage of MF coast stations equipped with DSC, on MF using DSC; or
- .43 on High Frequency (HF) using DSC; or

~~.54 through a recognized mobile satellite service; this requirement may be fulfilled by:~~

~~.5.1 a ship earth station;²³ or~~

~~.5.2 the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated.~~

2 The VHF radio installation, required by regulation 7.1.1, shall also be capable of transmitting and receiving general radiocommunications ~~using radiotelephony.~~

~~3 Ships engaged on voyages exclusively in sea area A1 may carry, in lieu of the satellite EPIRB required by regulation 7.1.6, an EPIRB which shall be:~~

~~.1 capable of transmitting a distress alert using DSC on VHF channel 70 and providing for locating by means of a radar transponder operating in the 9 GHz band;~~

~~.2 installed in an easily accessible position;~~

~~.3 ready to be manually released and capable of being carried by one person into a survival craft;~~

~~.4 capable of floating free if the ship sinks and being automatically activated when afloat; and~~

~~.5 capable of being activated manually.~~

Regulation 9 – Radio equipment: Sea areas A1 and A2

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea area A1, but remaining within sea area A2, shall be provided with:

.1 an MF radio installation capable of ~~maintaining a continuous DSC watch on the frequency 2187.5 kHz and~~ transmitting and receiving, for distress and safety purposes, on the frequencies:

.1 2,187.5 kHz using DSC; and

.2 2,182 kHz using radiotelephony; and

~~.2 a radio installation capable of maintaining a continuous DSC watch on the frequency 2,187.5 kHz which may be separate from, or combined with, that required by subparagraph .1.1; and~~

~~.32 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service other than MF operating either:~~

²³ ~~This requirement can be met by Inmarsat ship earth stations capable of two-way communications, such as Inmarsat-B and Fleet-77 (resolutions A.808(19) and MSC.130(75)) or Inmarsat-C (resolution A.807(19), as amended) ship earth stations. Unless otherwise specified, this footnote applies to all requirements for an Inmarsat ship earth station prescribed by this chapter.~~

- ~~3.1~~ through the ~~polar orbiting~~ satellite service on 406 MHz; this requirement may be fulfilled by: ~~the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or~~
 - .1 installing the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float-free of the ship in an emergency; or
 - .2 installing the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or
 - .3 installing a second EPIRB near the position from which the ship is normally navigated;
- 3.2 on HF using DSC; or
- 3.3 through ~~a ship earth station providing operating in~~ a recognized mobile satellite service by a ship earth station.

2 It shall be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs 1.1 and 1.2~~3~~ from the position from which the ship is normally navigated.

3 The ship shall, in addition, be capable of transmitting and receiving general radiocommunications ~~using radiotelephony or direct printing telegraphy~~ by either:

- .1 a radio installation operating on working frequencies in the bands between 1,605 kHz and 4,000 kHz or between 4,000 kHz and 27,500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by paragraph 1.1; or
- .2 ~~a ship earth station providing operating in~~ a recognized mobile satellite service ship earth station.

~~4 The Administration may exempt ships constructed before 1 February 1997, which are engaged exclusively on voyages within sea area A2, from the requirements of regulations 7.1.1 and 7.1.2 provided such ships maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated~~

Regulation 10 – Radio equipment: Sea areas A1, A2 and A3

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea areas A1 and A2, but remaining within sea area A3, shall, ~~if it does not comply with the requirements of paragraph 2,~~ be provided with:

- .1 ~~a ship earth station providing~~ a recognized mobile satellite service ship earth station and capable of:

- .1 transmitting and receiving distress and safety communications [using direct-printing telegraphy];
 - .2 initiating and receiving distress priority calls;
 - .3 maintaining watch for shore-to-ship distress alerts, relays, including those directed to specifically defined geographical areas; and
 - .4 transmitting and receiving general radiocommunications, using either radiotelephony or direct-printing telegraphy; and
- .2 an MF radio installation capable of maintaining a continuous DSC watch on the frequency 2187.5 kHz and transmitting and receiving, for distress and safety purposes, on the frequencies:
- .1 2,187.5 kHz using DSC; and
 - .2 2,182 kHz using radiotelephony; and
- ~~.3 a radio installation capable of maintaining a continuous DSC watch on the frequency 2,187.5 kHz which may be separate from or combined with that required by subparagraph .2.1; and~~
- .43 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service operating either:
- .4.1 through the polar-orbiting satellite service on 406 MHz; this requirement may be fulfilled by: the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or
 - .1 installing the EPIRB required by regulation 7.1.5 close to the position from which the ship is normally navigated, but in a location whereby it can still float-free of the ship in an emergency; or
 - .2 installing the EPIRB required by regulation 7.1.5 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or
 - .3 installing a second EPIRB near the position from which the ship is normally navigated.
 - .4.2 on HF using DSC; [or
 - .4.3 through a recognized mobile satellite service ~~by~~ on an additional ship earth station.]

~~2 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea areas A1 and A2, but remaining within sea area A3, shall, if it does not comply with the requirements of paragraph 1, be provided with:~~

- ~~.1 — an MF/HF radio installation capable of transmitting and receiving, for distress and safety purposes, on all distress and safety frequencies in the bands between 1,605 kHz and 4,000 kHz and between 4,000 kHz and 27,500 kHz:~~
 - ~~.1.1 — using DSC;~~
 - ~~.1.2 — using radiotelephony; and~~
 - ~~.1.3 — using direct-printing telegraphy; and~~
- ~~.2 — equipment capable of maintaining DSC watch on 2,187.5 kHz, 8,414.5 kHz and on at least one of the distress and safety DSC frequencies 4,207.5 kHz, 6,312 kHz, 12,577 kHz or 16,804.5 kHz; at any time, it shall be possible to select any of these DSC distress and safety frequencies. This equipment may be separate from, or combined with, the equipment required by subparagraph .1; and~~
- ~~.3 — means of initiating the transmission of ship-to-shore distress alerts by a radiocommunication service other than HF operating either:~~
 - ~~.3.1 — through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 7.1.6, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or~~
 - ~~.3.2 — through a recognized mobile satellite service by a ship earth station; and~~
- ~~.4 — in addition, ships shall be capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy by an MF/HF radio installation operating on working frequencies in the bands between 1,605 kHz and 4,000 kHz and between 4,000 kHz and 27,500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by subparagraph .1.~~

32 It shall be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs 1.1, 1.2 and 1.43, 2.1 and 2.3 from the position from which the ship is normally navigated.

~~4 — The Administration may exempt ships constructed before 1 February 1997, and engaged exclusively on voyages within sea areas A2 and A3, from the requirements of regulations 7.1.1.1 and 7.1.2 provided such ships maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated.~~

Regulation 11 – Radio equipment: Sea areas A1, A2, A3 and A4

1 In addition to meeting the requirements of regulation 7, every ship engaged on voyages beyond sea areas A1 and A2 and A3, but remaining within sea area A4, shall be provided with: ships engaged on voyages in all sea areas shall be provided with the radio installations and equipment required by regulation 10.2, except that the equipment required by regulation 10.2.3.2 shall not be accepted as an alternative to that required by regulation 10.2.3.1, which shall always be provided. In addition, ships engaged on voyages in all sea areas shall comply with the requirements of regulation 10.3.

- .1 an MF/HF radio installation capable of transmitting and receiving, for distress and safety purposes, on all distress and safety frequencies in the bands between 1605 kHz and 4000 kHz and between 4000 kHz and 27 500 kHz:
 - .1 using DSC; and
 - .2 using radiotelephony.
- .2 equipment capable of maintaining DSC watch on 2187.5 kHz, 8414.5 kHz and on at least one of the distress and safety DSC frequencies 4207.5 KHz, 6312 kHz, 12 577 kHz or 16 804.5 kHz; at any time, it shall be possible to select any of these DSC distress and safety frequencies. This equipment may be separate from, or combined with, the equipment required by subparagraph .1; and
- .3 a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio communication service other than HF operating through the satellite service on 406 MHz; this requirement may be fulfilled by:
 - .1 installing the EPIRB required by regulation 7.1.56 close to the position from which the ship is normally navigated, but in a location whereby it can still float-free of the ship in an emergency; or
 - .2 installing the EPIRB required by regulation 7.1.56 elsewhere on the ship, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or
 - .3 installing a second EPIRB near the position from which the ship is normally navigated.
- .4 in addition, ships shall be capable of transmitting and receiving general radiocommunications using radiotelephony ~~or direct-printing telegraphy~~ by an MF/HF radio installation operating on working frequencies in the bands between 1605 kHz and 4000 kHz and between 4000 kHz and 27 500 kHz. This requirement may be fulfilled by the addition of this capability in the equipment required by sub-paragraph .1.

2 It shall be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs 1.1 and 1.3 from the position from which the ship is normally navigated.

~~2 The Administration may exempt ships constructed before 1 February 1997, and engaged exclusively on voyages within sea areas A2, A3 and A4, from the requirements of regulations 7.1.1.1 and 7.1.2 provided such ships maintain, when practicable, a continuous listening watch on VHF channel 16. This watch shall be kept at the position from which the ship is normally navigated.~~

Regulation 12 – Watches

- 1 Every ship, while at sea, shall maintain a continuous radio watch:
 - .1 on VHF DSC channel 70, if the ship, in accordance with the requirements of regulation 7.1.2, is fitted with a VHF radio installation;

- .2 on the distress and safety DSC frequency 2,187.5 kHz, if the ship, in accordance with the requirements of regulation 9.1.2 or 10.1.2²³, is fitted with an MF radio installation;
- .3 on the distress and safety DSC frequencies 2,187.5 kHz and 8,414.5 kHz and also on at least one of the distress and safety DSC frequencies 4,207.5 kHz, 6,312 kHz, 12,577 kHz or 16,804.5 kHz, appropriate to the time of day and the geographical position of the ship, if the ship, in accordance with the requirements of regulation 10.2.2 or 11.1.2, is fitted with an MF/HF radio installation. This watch may be kept by means of a scanning receiver;
- .4 for satellite shore-to-ship distress alerts relays, if the ship, in accordance with the requirements of regulation 10.1.1, is fitted with a ship earth station providing a recognized mobile satellite service ship earth station.

2 Every ship, while at sea, shall maintain a radio watch for broadcasts of maritime safety information MSI and the Search and Rescue related information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the ship is navigating.

3 ~~Until 1 February 1999 or until such other date as may be determined by the Maritime Safety Committee,²⁴ e~~Every ship while at sea shall maintain, when practicable, a continuous listening watch on VHF channel 16. This watch which shall be kept at the position from which the ship is normally navigated on:-

- .1 VHF channel 16; and
- .2 appropriate frequency or frequencies for urgency and safety radiocommunications for the area in which the ship is navigating.

Regulation 13 – Sources of energy

1 There shall be available at all times, while the ship is at sea, a supply of electrical energy sufficient to operate the radio installations and to charge any batteries used as part of a reserve source or sources of energy for the radio installations .

2 A reserve source or sources of energy shall be provided on every ship, to supply radio installations, for the purpose of conducting distress and safety radiocommunications, in the event of failure of the ship's main and emergency sources of electrical power. The reserve source or sources of energy shall be capable of simultaneously operating the VHF radio installation required by regulation 7.1.1 and, as appropriate for the sea area or sea areas for which the ship is equipped, either the MF radio installation required by regulation 9.1.1 or 10.1.2, the MF/HF radio installation required by regulation 10.2.1 or 11.1, or the Inmarsat ship earth station required by regulation 10.1.1 and any of the additional loads mentioned in paragraphs 4, 5 and 8 for a period of at least:

- .1 1 h on ships provided with an emergency source of electrical power, if such source of power complies fully with all relevant provisions of regulation II-1/42 or 43, including the supply of such power to the radio installations; and

²⁴ Refer to Maintenance of a continuous listening watch on VHF channel 16 by SOLAS ships whilst at sea after 1 February 1999 and installation of VHF DSC facilities on non-SOLAS ships (resolution MSC.131(75)).

- .2 6 h on ships not provided with an emergency source of electrical power complying fully with all relevant provisions of regulation II-1/42 or 43, including the supply of such power to the radio installations.²⁵

The reserve source or sources of energy need not supply independent HF and MF radio installations at the same time.

3 The reserve source or sources of energy shall be independent of the propelling power of the ship and the ship's electrical system.

4 Where, in addition to the VHF radio installation, two or more of the other radio installations, referred to in paragraph 2, can be connected to the reserve source or sources of energy, they shall be capable of simultaneously supplying, for the period specified, as appropriate, in paragraph 2.1 or 2.2, the VHF radio installation and:

- .1 all other radio installations which can be connected to the reserve source or sources of energy at the same time; or
- .2 whichever of the other radio installations will consume the most power, if only one of the other radio installations can be connected to the reserve source or sources of energy at the same time as the VHF radio installation .

5 The reserve source or sources of energy may be used to supply the electrical lighting required by regulation 6.2.4.

6 Where a reserve source of energy consists of a rechargeable accumulator battery or batteries:

- .1 a means of automatically charging such batteries shall be provided which shall be capable of recharging them to minimum capacity requirements within 10 h; and
- .2 the capacity of the battery or batteries shall be checked, using an appropriate method,²⁶ at intervals not exceeding 12 months, when the ship is not at sea.

7 The siting and installation of accumulator batteries which provide a reserve source of energy shall be such as to ensure:

- .1 the highest degree of service;
- .2 a reasonable lifetime;
- .3 reasonable safety;
- .4 that battery temperatures remain within the manufacturer's specifications whether under charge or idle; and

²⁵ For guidance, the following formula is recommended for determining the electrical load to be supplied by the reserve source of energy for each radio installation required for distress conditions: 1/2 of the current consumption necessary for transmission + the current consumption necessary for reception + the current consumption of any additional loads.

²⁶ One method of checking the capacity of an accumulator battery is to fully discharge and recharge the battery, using normal operating current and period (e.g. 10 h). Assessment of the charge condition can be made at any time, but it should be done without significant discharge of the battery when the ship is at sea.

- .5 that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions .

8 If an uninterrupted input of information from the ship's navigational or other equipment to a radio installation required by this chapter, including the navigation receiver referred to in regulation 18, is needed to ensure its proper performance, means shall be provided to ensure the continuous supply of such information in the event of failure of the ship's main or emergency source of electrical power.

Regulation 14 – Performance standards

1 All equipment to which this chapter applies shall be of a type approved by the Administration. Such equipment shall conform to appropriate performance standards not inferior to those adopted by the Organization.²⁷

²⁷ Refer to the following resolution adopted by the Assembly of the Organization:

- .1 Performance standards for narrow-band direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX) (valid for equipment installed on or after 1 July 2005) (resolution MSC.148(77) A.525(13), as revised);
- .2 General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids (resolution A.694(17));
- .3 Performance standards for ship earth stations capable of two-way communications (resolution A.808(19), as revised) and Type approval of ship earth stations (resolution A.570(14)) and Performance standards for Inmarsat ship earth stations capable of two-way communications (MSC.130(75));
- .4 Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling (resolution A.803(19), as amended) and resolution MSC.68(68), annex 1 (valid for equipment installed on or after 1 January 2000);
- .5 Performance standards for shipborne MF radio installations capable of voice communication and digital selective calling (resolution A.804(19), as amended) and resolution MSC.68(68), annex 2 (valid for equipment installed on or after 1 January 2000);
- .6 Performance standards for shipborne MF/HF radio installations capable of voice communication, narrow-band direct-printing and digital selective calling (resolution A.806(19), as amended) and resolution MSC.68(68), annex 3 (valid for equipment installed on or after 1 January 2000);
- .7 Performance standards for float-free satellite emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz (resolution A.810(19), as amended) and Adoption of amendments to performance standards for float-free satellite emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz (resolution A.810(19)) (MSC.120(74)) and Type approval of satellite emergency position-indicating radio beacons (EPIRBs) operating in the COSPAS-SARSAT system (resolution A.696(17));
- .8 Performance standards for survival craft radar transponders for use in search and rescue operations (resolution A.802(19), as amended);
- .9 Performance standards for survival craft AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations (resolution MSC.246(83)) ~~Performance standards for float-free VHF emergency position-indicating radio beacons (resolution A.805(19))~~;
- .10 Performance standards for Inmarsat-C ship earth stations capable of transmitting and receiving direct-printing communications (resolution A.807(19), as amended) and resolution MSC.68(68), annex 3 (valid for equipment installed on or after 1 January 2000) and Type approval of ship earth stations (resolution A.570(14));
- .11 Revised performance standards for enhanced group call equipment (resolution MSC.306(87));
- .12 Performance standards for float-free release and activation arrangements for emergency radio equipment (resolution A.662(16));
- .13 System performance standard for the promulgation and coordination of maritime safety information using high-frequency narrow-band direct printing (resolution A.699(17));
- .14 Adoption of the revised performance standards for narrow-band direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships (NAVTEX) (resolution MSC.148(77));
- .15 Performance standards for a shipborne integrated radiocommunication system (IRCS) when used in the GMDSS (resolution A.811(19)); and
- .16 Performance standards for on-scene (aeronautical) two-way portable VHF radiotelephone apparatus (resolution MSC.80(70), annex 1).

Regulation 15 – Maintenance requirements

1 Equipment shall be so designed that the main units can be replaced readily, without elaborate recalibration or readjustment.

2 Where applicable, equipment shall be so constructed and installed that it is readily accessible for inspection and on-board maintenance purposes.

3 Adequate information shall be provided to enable the equipment to be properly operated and maintained, taking into account the recommendations of the Organization.²⁸

4 Adequate tools and spares shall be provided to enable the equipment to be maintained.

5 The Administration shall ensure that radio equipment required by this chapter is maintained to provide the availability of the functional requirements specified in regulation 4 and to meet the recommended performance standards of such equipment.

6 On ships engaged on voyages in sea areas A1 ~~and~~ or A2, the availability shall be ensured by using such methods as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, or a combination of these, as may be approved by the Administration.

7 On ships engaged on voyages in sea areas A3 ~~and~~ or A4, the availability shall be ensured by using a combination of at least two methods such as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, as may be approved by the Administration, taking into account the recommendations of the Organization.²⁹

8 While all reasonable steps shall be taken to maintain the equipment in efficient working order to ensure compliance with all the functional requirements specified in regulation 4, malfunction of the equipment for providing the general radiocommunications required by regulation 4.82 shall not be considered as making a ship unseaworthy or as a reason for delaying the ship in ports where repair facilities are not readily available, provided the ship is capable of performing all distress and safety functions.

9 ~~Satellite~~ EPIRBs shall be:

.1 annually tested for all aspects of operational efficiency, with special emphasis on checking the emission on operational frequencies, coding and registration, at intervals as specified below:

.1 on passenger ships, within 3 months before the expiry date of the Passenger Ship Safety Certificate; and

.2 on cargo ships, within 3 months before the expiry date, or 3 months before or after the anniversary date, of the Cargo Ship Safety Radio Certificate.

²⁸ Refer to Recommendation on general requirements for shipborne radio equipment forming part of the global maritime distress and safety system and for electronic navigational aids (resolution A .694(17)), General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment (resolution A .813(19)), and Clarifications of certain requirements in IMO performance standards for GMDSS equipment (MSC/Circ .862).

²⁹ Refer to Radio maintenance guidelines for the global maritime distress and safety system related to sea areas A3 and A4 (resolution A .702(17)).

The test may be conducted on board the ship³⁰ or at an approved testing station; and

- .2 subject to maintenance at intervals not exceeding five years, to be performed at an approved shore-based maintenance facility .

Regulation 16 – Radio personnel

1 Every ship shall carry personnel qualified for distress and safety radiocommunication purposes to the satisfaction of the Administration.³¹ The personnel shall be holders of certificates specified in the Radio Regulations as appropriate, any one of whom shall be designated to have primary responsibility for radiocommunications during distress incidents.

2 In passenger ships, at least one person qualified in accordance with paragraph 1 shall be assigned to perform only radiocommunication duties during distress incidents.

Regulation 17 – Radio records

A record shall be kept, to the satisfaction of the Administration and as required by the Radio Regulations, of all incidents connected with the radiocommunication service which appear to be of importance to safety of life at sea.

Regulation 18 – Position-updating

1 All two-way communication equipment carried on board a ship to which this chapter applies which is capable of automatically including the ship's position in the distress alert shall be automatically provided with this information from an internal or external navigation receiver,³² if either is installed. ~~If such a receiver is not installed, the ship's position and the time at which the position was determined shall be manually updated at intervals not exceeding 4 h, while the ship is under way, so that it is always ready for transmission by the equipment.~~

[2 [If temporarily unavailable] [In case of failure of the internal or external navigation receiver], the ship's position and the time at which the position was determined shall be manually updated at intervals not exceeding 4 h, while the ship is under way, so that it is always ready for transmission by the equipment.]

³⁰ Guidelines on the annual testing of 406 MHz satellite EPIRBs are given in MSC/Circ.882. Guidance for avoidance of false distress alerts are given in resolution A.814(19).

³¹ Refer to the STCW Code, chapter IV, section B-IV/2 .

³² Requirements for automatic update of the ship's position are given in resolution MSC.68(68).

Appendix (Certificates)

FORM OF SAFETY CERTIFICATE FOR PASSENGER SHIPS

1 Under "Particulars of Ship", a footnote is added to "Sea areas in which ship is certified to operate (regulation IV/2)", as follows:

^x For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

RECORD OF EQUIPMENT FOR PASSENGER SHIP SAFETY (FORM P)

2 In part 2, the existing item 13~~4~~ and its subitems are deleted:

~~13 Radio installations used in life-saving appliances~~

~~13.1 Number of search and rescue location devices~~

~~13.1.1 Radar search and rescue transponders (SART)~~

~~13.1.2 AIS search and rescue transmitters~~

~~13.2 Number of two-way VHF radiotelephone apparatus~~

3 In part 3, the existing items 4, 4.1, 5, and 6 are replaced by the following:

4 **Satellite** EPIRB

~~4.1 COSPAS-SARSAT~~

5 **Two-way VHF EPIRB** radiotelephone apparatus

5.1 **Portable two-way VHF** radiotelephone apparatus

5.2 **Two-way VHF** radiotelephone apparatus fitted in survival craft

6 **Ship's s**Search and rescue locating devices

6.1 **Radar search and rescue transponders (SART) stowed for rapid placement in survival craft**

6.2 **Radar search and rescue transponders (SART) stowed in survival craft**

6.2 3 **AIS Search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft**

6.4 **AIS Search and rescue transmitters (AIS-SART) stowed in survival craft**

RECORD OF EQUIPMENT FOR THE CARGO SHIP SAFETY EQUIPMENT CERTIFICATE (FORM E)

- 4 In part 2, the existing item 109 and its subitems are deleted:

~~10 — Radio installations used in life-saving appliances~~

~~10.1 — Number of search and rescue location devices~~

~~10.1.1 — Radar search and rescue transponders (SART)~~

~~10.1.2 — AIS search and rescue transmitters~~

~~10.2 — Number of two-way VHF radiotelephone apparatus~~

FORM OF SAFETY RADIO CERTIFICATE FOR CARGO SHIPS

- 5 Under "Particulars of Ship", a footnote is added to "Sea areas in which ship is certified to operate (regulation IV/2)", as follows:

^x For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY RADIO (FORM R)

- 6 In part 2, the existing items 4, 4.1, 5, and 6 are replaced by the following:

4 **Satellite** EPIRB

~~4.1 — COSPAS-SARSAT~~

5 **Two-way VHF EPIRB** radiotelephone apparatus

5.1 **Portable two-way VHF radiotelephone apparatus**

5.2 **Two-way VHF radiotelephone apparatus fitted in survival craft**

6 ~~Ship's~~ **S**earch and rescue locating devices

6.1 **Radar search and rescue transponders (SART) stowed for rapid placement in survival craft**

6.2 **Radar search and rescue transponders (SART) stowed in survival craft**

6.2.3 **AIS Search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft**

6.4 **AIS Search and rescue transmitters (AIS-SART) stowed in survival craft**

FORM OF SAFETY CERTIFICATE FOR CARGO SHIPS

7 Under "Particulars of Ship", a footnote is added to "Sea areas in which ship is certified to operate (regulation IV/2)", as follows:

^x For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

RECORD OF EQUIPMENT FOR CARGO SHIP SAFETY (FORM C)

8 In part 2, the existing item 109 and its subitems are removed:

~~10 Radio installations used in life-saving appliances~~

~~10.1 Number of search and rescue location devices~~

~~10.1.1 Radar search and rescue transponders (SART)~~

~~10.1.2 AIS search and rescue transmitters~~

~~10.2 Number of two-way VHF radiotelephone apparatus~~

9 In part 3, the existing items 4, 4.1, 5, and 6 are replaced by the following:

4 ~~Satellite~~ EPIRB

~~4.1 COSPAS-SARSAT~~

5 Two-way VHF ~~EPIRB~~ radiotelephone apparatus

5.1 Portable two-way VHF radiotelephone apparatus

5.2 Two-way VHF radiotelephone apparatus fitted in survival craft

6 ~~Ship's~~ Search and rescue locating devices

6.1 Radar search and rescue transponders (SART) stowed for rapid placement in survival craft

6.2 Radar search and rescue transponders (SART) stowed in survival craft

~~6.2~~ 3 AIS Search and rescue transmitters (AIS-SART) stowed for rapid placement in survival craft

6.4 AIS Search and rescue transmitters (AIS-SART) stowed in survival craft

FORM OF SAFETY CERTIFICATE FOR NUCLEAR PASSENGER SHIPS SAFETY CERTIFICATE

10 Under "Particulars of Ship", a footnote is added to "Sea areas in which ship is certified to operate (regulation IV/2)", as follows:

^x For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

RECORD OF EQUIPMENT FOR THE NUCLEAR PASSENGER SHIP SAFETY CERTIFICATE (FORM PNUG)

11 In part 2, the existing item 13 and its subitems are removed:

~~13 — Radio installations used in life-saving appliances~~

~~13.1 — Number of search and rescue location devices~~

~~13.1.1 — Radar search and rescue transponders (SART)~~

~~13.1.2 — AIS search and rescue transmitters (AIS-SART)~~

~~13.2 — Number of two-way VHF radiotelephone apparatus~~

12 In part 3, the existing items 1.4, 4, 4.1, 4.2, 5, and 6 are replaced by the following:

1.4 **INMARSAT** Recognized mobile satellite service ship earth station

4 **Satellite** EPIRB

~~4.1 — COSPAS-SARSAT~~

~~4.2 — INMARSAT~~

5 **Two-way VHF** ~~EPIRB~~ radiotelephone apparatus

5.1 **Portable two-way VHF** radiotelephone apparatus

5.2 **Two-way VHF** radiotelephone apparatus fitted in survival craft

6 ~~Ship's~~ Search and rescue locating devices

6.1 **Radar search and rescue transponders (SART)** stowed for rapid placement in survival craft

6.2 **Radar search and rescue transponders (SART)** stowed in survival craft

~~6.2~~ 3 **AIS Search and rescue transmitters (AIS-SART)** stowed for rapid placement in survival craft

6.4 **AIS Search and rescue transmitters (AIS-SART)** stowed in survival craft

**FORM OF SAFETY CERTIFICATE FOR NUCLEAR CARGO SHIPS SAFETY
CERTIFICATE**

13 Under "Particulars of Ship", a footnote is added to "Sea areas in which ship is certified to operate (regulation IV/2)", as follows:

^x For a ship certified to operate in sea area A3, indicate the recognized mobile satellite service in brackets.

**RECORD OF EQUIPMENT FOR THE NUCLEAR CARGO SHIP SAFETY
CERTIFICATE (FORM C)**

14 In part 2, the existing item 109 and its sub-items are removed:

~~10 — Radio installations used in life-saving appliances~~

~~10.1 — Number of search and rescue location devices~~

~~10.1.1 — Radar search and rescue transponders (SART)~~

~~10.1.2 — AIS search and rescue transmitters~~

~~10.2 — Number of two-way VHF radiotelephone apparatus~~

15 In part 3, the existing items 1.4, 4, 4.1, 5, and 6 are replaced by the following:

1.4 **INMARSAT** Recognized mobile satellite service ship earth station

4 **Satellite** EPIRB

~~4.1 — COSPAS-SARSAT~~

~~4.2 — INMARSAT~~

5 **Two-way VHF** ~~EPIRB~~ radiotelephone apparatus

5.1 **Portable two-way VHF** radiotelephone apparatus

5.2 **Two-way VHF** radiotelephone apparatus fitted in survival craft

6 ~~Ship's~~ Search and rescue locating devices

6.1 **Radar search and rescue transponders (SART)** stowed for rapid placement in survival craft

6.2 **Radar search and rescue transponders (SART)** stowed in survival craft

~~6.2~~ 3 **AIS Search and rescue transmitters (AIS-SART)** stowed for rapid placement in survival craft

6.4 **AIS Search and rescue transmitters (AIS-SART)** stowed in survival craft

ANNEX 8

DRAFT ~~REVISION OF RESOLUTION A.806(19)~~ MSC.[...(...)]

~~RESOLUTION [...]~~ adopted on [...]

PERFORMANCE STANDARDS FOR SHIPBORNE FOR MF AND MF/HF RADIO INSTALLATIONS CAPABLE OF VOICE COMMUNICATION, ~~[NARROW-BAND DIRECT-PRINTING]~~ AND DIGITAL SELECTIVE CALLING (English only)

THE ~~ASSEMBLY~~ MARITIME SAFETY COMMITTEE,

RECALLING Article ~~15(28(b))~~ of the Convention on the International Maritime Organization concerning the functions of the ~~Assembly in relation to regulations and guidelines concerning maritime safety~~ Committee,

~~[RECALLING ALSO regulations IV/10.2.1, 10.2.2, 10.2.4 and 14.1 of the 1988 amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning radiocommunications for the Global Maritime Distress and Safety System (GMDSS), which require, respectively, that ships be provided with a MF or MF/HF radio installation capable of voice communication, [narrow-band direct-printing] and digital selective calling, and that such MF and MF/HF radio installations shall conform to appropriate performance standards not inferior to those adopted by the Organization,~~

RECOGNIZING the need to prepare performance standards for MF as well as MF/HF radio installations capable of voice communication, ~~[narrow-band direct-printing]~~ and digital selective calling to be used in the GMDSS in order to ensure the operational reliability of such equipment and to avoid, as far as practicable, adverse interaction between such equipment and other communication and navigation equipment on board ship, ~~]~~

HAVING CONSIDERED the recommendation made by the ~~Maritime Safety Sub-Committee on Navigation, Communications and Search and Rescue~~ at its ~~sixty-fifth~~ [...] session,

1- ADOPTS the *Recommendation on Performance Standards for Shipborne MF and MF/HF Radio Installations Capable of Voice Communication, [Narrow-Band Direct-Printing] and Digital Selective Calling* set out in the ~~Annex~~ annex to the present resolution;

2- RECOMMENDS ~~Governments~~ Member States to ensure that shipborne MF and MF/HF radio installations capable of voice communication, ~~[narrow-band direct-printing]~~ and digital selective calling which will form part of the GMDSS:

- (a) if installed on or after ~~[...]~~ [1 January 2024], conform to performance standards not inferior to those specified in the annex to ~~this~~ the present resolution,
- (b) if installed ~~on or after [...]~~ before [1 January 2024], conform to performance standards not inferior to those specified in the ~~Annex to the present resolution~~ annex to resolution A.804(19), as amended, on Performance standards for shipborne MF radio installations capable of voice communication and digital selective calling; and resolution A.806(19);

~~(b) — if installed before 23 November 1996, conform to), as amended, on~~
~~Recommendation on performance standards not inferior to those specified~~
~~in the Annex to resolution A.613(15);~~
for shipborne MF/HF radio installations
capable of voice communication, narrow-band direct-printing and digital
selective calling, respectively;

3. REQUESTS the Maritime Safety Committee to keep these Performance Standards under review and to adopt amendments thereto, as necessary.

ANNEX

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR SHIPBORNE
MF AND MF/HF RADIO INSTALLATIONS CAPABLE OF VOICE COMMUNICATION,
~~NARROW-BAND DIRECT-PRINTING~~ AND DIGITAL SELECTIVE CALLING**

PART A – GENERAL

1 INTRODUCTION

The MF and MF/HF radiotelephone, ~~narrow-band direct-printing~~ and digital selective calling installation, in addition to meeting the requirements of the Radio Regulations, the relevant ITU-R Recommendations and the general requirements set out in resolution A.694(17), should comply with the following performance standards.

2 GENERAL

2.1 The installation which may consist of more than one piece of equipment, should be capable of operating on single-frequency channels or on single- and two-frequency channels.

2.2 The equipment should provide for the following categories of calling, using both voice and digital selective calling (DSC):

- .1 distress, urgency and safety;
- .2 ship operational requirements; and
- .3 ~~public correspondence~~ other communication.

~~2.3~~ The equipment should provide for the following categories of communications, using both voice and [data] ~~narrow-band direct printing (NBDP)~~]]:

- ~~.1~~ distress, urgency for the reception of MSI and safety;
- ~~.2~~ ship operational requirements; Search and Rescue related information
- ~~.3~~ public correspondence.

~~2.3.2.4~~ 3 The equipment should comprise at least:

- .1 a transmitter/receiver, including antenna(e);
- .2 an integral control unit and/or one or more separate control units;
- .3 a microphone with a press-to-transmit switch, which may be combined with a telephone in a handset;
- .4 an internal or external loudspeaker;
- .5 an integral or separate narrow-band direct-printing facility;
- .6 an integral or separate digital selective calling facility; and
- .7 a dedicated DSC watchkeeping facility to maintain a continuous watch on

distress channels only. Where a scanning receiver is employed to watch more than one DSC distress channel, all selected channels should be scanned within 2 s and the dwell time on each channel should be adequate to allow detection of the dot pattern which precedes each DSC call. The scan should only stop on detection of a 100 baud dot pattern.

2.544 A distress alert should be activated only by means of a dedicated distress button. This button should not be any key of an ITU-T digital input panel or an ISO keyboard provided on the equipment and should be physically separated from functional buttons / keys used for normal operation, this button should be a single button for no other purpose than to initiate a distress alert.

2.655 The dedicated distress button should:

- .1 be clearly identified, and be red in colour and marked "DISTRESS". Where a non-transparent protective lid or cover is used, it should also be marked "DISTRESS"; and
- .2 be protected against inadvertent operation. The required protection of the distress button should consist of a spring loaded lid or cover permanently attached to the equipment by, for example, hinges. It should not be necessary for the user to remove additional seals or to break the lid or cover in order to operate the distress button. The operation of the distress button should generate a visible and audible indication. The distress button should be kept pressed for at least 3 seconds. A flashing light and an intermittent acoustic signal should start immediately. After the 3 seconds the transmission of the distress alert is initiated and the indication should become steady.

2.766 The distress alert initiation should require at least two independent actions. The lifting of the protective lid or cover is considered as the first action. Pressing the distress button as specified above is considered as the second independent action.

2.877 The equipment should indicate the status of the distress alert transmission.

2.98 It should be possible to interrupt and initiate distress alerts at any time and to interrupt repetitive transmissions of distress messages. Such operation should not interrupt the transmission of a distress alert or distress message in progress but should prevent repetitive transmissions of a distress message.

2.9 Valid GNSS position data from either an internal or external source should be available to the equipment at all times. The loss of position information should generate a visible or audible indication.

3 POWER SUPPLY

The MF and MF/HF radio installation should be powered from the ship's main source of electrical energy. In addition, it should be possible to operate the MF/HF installation from an alternative source of electrical energy.

4 CONTROL

4.1 It should be possible to conduct distress and safety communications from the position, or in the vicinity of the position, from which the ship is normally navigated.

4.2 The equipment should provide a standard interface to enable the selections of frequencies and setting of MMSI to be called from a remote control unit (e.g. INS) by using standardized interfaces.¹

4.3 A function to establish a connection between stations of the mobile maritime service by simple means using DSC should be implemented.²

4.4 The equipment should provide visual and audible indication of any distress alert or alerts received on board at the position from which the ship is normally navigated, which may be different from the position of the primary control of the equipment.

5 Interfaces

5.1 Where the equipment is part of an Integrated Communication System (ICS), Integrated Navigation System (INS), Integrated Bridge System (IBS) or connected to a navigation system, this should not impair any of the GMDSS functions of the system or the equipment itself.

5.2 Equipment should provide an interface for the Bridge Alert Management (BAM) in accordance with Resolution MSC. 302(87) on Performance Standard for Bridge Alert Management.

5.3 The Equipment should provide an interface to report a ship identifier and location data from a received distress alert to navigation display system in order to enable a graphical display and possible linking to available target information.

5.4 All Interfaces provided for communication with other navigation and communication equipment should comply with the relevant international standards.³

PART B – TRANSMITTER

1 FREQUENCIES AND CLASSES OF EMISSION

1.1.1 For MF only equipment the radiotelephone and DSC transmitter should be capable of transmitting on ~~all~~ frequencies ~~allocated~~ in the bands between 1,605 kHz and 4,000 kHz ~~considered by the Administration as adequate for the operation of the ship~~, but at least the frequency 2,182 kHz for voice and the DSC Frequency 2,187.5 kHz should be readily accessible to the operator.

1.1.2 For combined MF/HF equipment ~~The~~the transmitter should be capable of transmitting on all frequencies allocated to the maritime mobile service in the frequency band 1,605 kHz to 27,500 kHz. As a minimum, the following frequencies should be readily accessible to the operator: the voice frequencies 2,182, 4,125, 6,215, 8,291, 12,290 and 16,420 kHz; ~~the~~ NBDP frequencies 2,174.5, 4,177.5, 6,268, 8,376.5, 12,520 and 16,695 kHz~~;~~; and the DSC frequencies 2,187.5, 4,207.5, 6,312, 8,414.5, 12,577 and 16,804.5 kHz.

1.2 Radiotelephone frequencies are designated in terms of the carrier frequency; ~~NBDP~~ and ~~DSC~~ frequencies are designated in terms of the assigned (centre) frequency. When ~~NBDP and~~ NBDP and DSC signals are transmitted using a transmitter in the J2B mode the (suppressed) carrier frequency should be adjusted so as to have ~~the NBDP and~~ the NBDP and the DSC

¹ IEC 61162 Series

² Conforming to Recommendation ITU-R M.493

³ IEC 61162 Series

signal transmitted on the assigned frequency. The selected transmitter frequency should be clearly identifiable on the control panel of the equipment.

1.3 The transmitter should be capable of transmitting (upper side band ~~signals, where appropriate~~) using classes of emission J3E, ~~H3E~~ and either J2B [or F1B].

1.3.1 When switching to the preset distress ~~frequencies~~ frequencies 2,182 kHz, 4,125, 6,215, 8,291, 12,290 and 16,420 kHz; the appropriate class of emission in accordance with the Radio Regulations should be selected automatically.⁴

1.3.2 When switching to the assigned (centre) frequencies for [NBDP and] DSC specified in 1.1 above, classes of emission ~~F1B~~ F1B or J2B should be selected automatically.¹

1.4 It should be possible to change the transmitter from any class of emission to another for which it is designed to operate by means of not more than one control.

1.5 It should be possible for the user to select transmission frequencies independent of any receiver setting. This does not preclude the use of transceivers.

1.6 It should be possible to change the transmitter quickly from operation on any frequency to operation on any other frequency, and in any event within a period not exceeding 15 s. The equipment should not be able to transmit during channel switching operations.

1.7 Means should be provided to ~~prevent overmodulation~~ automatically control the modulation level.

2 FREQUENCY ACCURACY AND STABILITY

The transmitter frequency should ~~remain within~~ be provided with a frequency stability (+/- 10 Hz) which ensures reception of the ~~required frequency at all times following the warming-up period~~ voice and DSC signal.

3 OUTPUT POWER

3.1 During normal modulation, the peak envelope power in the case of J3E ~~or H3E~~ emissions, or the mean power in the case of J2B [or F1B] emissions, should be at least 60 W⁵ at any frequency within the specified frequency range.

3.2 If the rated output power exceeds 400 W⁶ in the band, provision should be made for reducing the output to 400 W or less. Generally, only the minimum power necessary should be used for all radio communications.

4 PERMISSIBLE WARMING-UP PERIOD

The equipment should be capable of operation within 1 min after switching on.

5 CONTINUOUS OPERATION

⁴ For existing transmitters, during the transition and amortization period, classes of emission may be selected manually.

⁵ Note should be taken that in some areas of the world a 60 W value may not be adequate to ensure reliable communications. A value greater than 60 W may be required in these areas.

⁶ The Radio Regulations (RR ~~52.4274357~~ 127) specify a 400 W maximum power for equipment operating in the MF band in region 1.

5.1 ~~Continuous~~ The Transmitter should be capable of continuous voice operation ~~should be possible when the transmitter is adjusted to operate at its rated power~~ without causing any reduction in performance or damage to the equipment.

5.2 A manual non-locking push-to-talk switch to operate the transmitter with a visual indication that the transmitter is activated and facilities to limit the transmission time to a maximum of 5 min should be provided.

6 CONTROLS AND INDICATORS

6.1 Provision should be made for indicating the antenna current or power delivered to the antenna. Failure of the indicating system should not interrupt the antenna circuit.

6.2 Manually tuned equipment should be fitted with a sufficient number of indicators to permit accurate and rapid tuning.

6.3 Operation of the transmit/receive control should not cause unwanted emissions.

6.4 All adjustment and controls necessary for switching the transmitter to operate on 2,182 kHz and 2,187.5 kHz should be clearly marked, in order that these operations may be performed readily.

7 SAFETY PRECAUTIONS

The equipment should be so designed and constructed that when the transmitter is providing power to the antenna, the transmitter is protected against damage resulting from disconnection of the antenna or short-circuiting of antenna terminals. If this protection is provided by means of a safety device, that device should automatically be reset following removal of the antenna open-circuit or short-circuit conditions.

8 POWER SUPPLY

8.1 If it is necessary to delay the application of voltage, ~~for example anode voltage,~~ to any part of the transmitter after switching on, this delay should be provided automatically.

8.2 If the transmitter includes parts which are required to be heated in order to operate correctly, for example crystal ovens, the power supplies to the heating circuits should be so arranged that they can remain operative when other supplies to or within the equipment are switched off. If a special switch for the heating circuits is provided, its functions should be clearly indicated; it should normally be in the "on" position and be protected against inadvertent operation. The correct operating temperature should be reached within a period of 30 min after the application of power.

PART C – RECEIVERS

1 FREQUENCIES AND CLASSES OF EMISSION

1.1.1 For MF equipment only the receiver should be capable of being tuned throughout the bands between 1,605 kHz and 4,000 kHz. The frequency for 2,182 kHz for voice and the DSC frequency 2,187.5 kHz should be readily accessible to the operator.

1.1.2 For combined MF/HF ~~the~~the receiver should be capable of being tuned throughout the bands between 1,605 kHz and 27.5 MHz. ~~Tuning should be either continuous, or by incremental steps, or by the selection of a number of spot frequencies considered by the Administration as adequate for the operation of the ship, or by any combination of these methods.~~ As a minimum, the following frequencies should be readily accessible to the operator: the carrier frequencies 2,182, 4,125, 6,215, 8,291, 12,290 and 16,420 kHz for radiotelephony; ~~the~~the NBDP frequencies 2,174.5, 4,177.5, 6,268, 8,376.5, 12,520 and 16,695 kHz; ~~and~~and the DSC frequencies 2,187.5, 4,207.5, 6,312, 8,414.5, 12,577 and 16,804.5 kHz.

~~Tuning should be either continuous, or by incremental steps, or by the selection of a number of spot frequencies considered by the Administration as adequate for the operation of the ship, or by any combination of these methods.~~

1.2 Radiotelephone frequencies should be designated in terms of the carrier frequency; ~~NBDP~~the and DSC frequencies should be designated in terms of the assigned (centre) frequency. The selected receiver frequency should be clearly identifiable on the control panel of the equipment.

1.3 The receiver should be capable of receiving upper sideband signals as appropriate for classes of emission J3E, ~~H3E~~J3E, J2B ~~and F1B~~and F1B.

1.4 The class of emission should be selectable by not more than one control.

1.5 It should be possible for the user to select reception frequencies independent of any transmitter setting. This does not preclude the use of transceivers.

1.6 The receiver should be capable of being tuned to different frequencies quickly, and in any event within a period not exceeding 15 s.

2 FREQUENCY STABILITY AND ACCURACY

The receiver frequency should ~~at all times remain within 10 Hz of the required frequency following the warming-up period~~be provided with a frequency stability (+/- 10 Hz) which ensures reception of the voice and DSC signal.

3 USABLE SENSITIVITY

~~For classes of emission J3E and F1B the sensitivity of the receiver should be equal to or better than 6 µV e.m.f. at the receiver input for a signal-to-noise ratio of 20 dB. For NBDP and DSC an output character error rate of 10⁻² or less should be obtained for a signal-to-noise ratio of 12 dB.~~

Editor's note: CIRM will deliver actual data.

4 RECEIVER OUTPUT

4.1 For the reception of voice signals, the receiver should be suitable for use with a loudspeaker and a telephone handset and should be capable of providing power of at least 2 W to the loudspeaker and at least 1 mW to the handset.

4.2 An output should be provided for [NBDP and] DSC signals if the corresponding facility is not integrated.

5 PERMISSIBLE WARMING-UP PERIOD

The equipment should be capable of operating within 1 min after switching on.

6 IMMUNITY TO INTERFERENCE

The immunity to interference of the receiver should be such that the wanted signal is not seriously affected by unwanted signals.

7 CONTROLS

The receiver should be provided with automatic gain control.

8 POWER SUPPLY

If the receiver includes parts which are required to be heated in order to operate correctly, for example crystal ovens, the power supplies to the heating circuits should be so arranged that they can remain operative when other supplies to or within the equipment are switched off. If a special switch for the heating circuits is provided, its function should be clearly indicated; it should normally be in the "on" position and be protected against inadvertent operation. The correct operating temperature should be reached within a period of 30 min after the application of power.

PART D – DIGITAL SELECTIVE CALLING FACILITY

1 The facility should conform to the provisions of the relevant ITU-R Recommendations pertaining to the DSC system.⁷

2 The DSC facility should comprise:

- .1 means to decode and encode DSC messages;
- .2 means necessary for composing the DSC message;
- .3 means to verify the prepared message before it is transmitted;
- .4 means to display the information contained in a received call in plain language;
- .5 facilities to automatically update the ship's position and the time at which the position was determined from a suitable electronic position-fixing aid which

⁷ Class A DSC equipment conforming to Recommendation ITU-R M.493 should be used to meet this requirement.

maybe an integral part of the equipment. For equipment which does not have an integral position-fixing aid, such facilities should include a suitable interface conforming to the appropriate international standards;⁸~~means for the manual entry of the position information; additionally, automatic entry may be provided; and~~

.6 means for the manual entry of **position and** the time at which the position information was determined; ~~additionally, automatic entry should may be provided; and~~

.7 means to activate an alarm when no position data is received from the electronic position-fixing aid or, in the case of manual input, the position information is over 4 hours old. Any position information not updated for more than 23.5 hours should be erased.

3 DISTRESS MESSAGE STORAGE

3.1 If the received messages are not printed immediately, sufficient capacity should be provided to enable at least 20 received distress messages to be stored in the DSC facility.

3.2 These messages should be stored until readout ~~and should be erased after 48 hours after their reception.~~

4 It should be possible to initiate and make distress and safety calls from the position from which the ship is normally navigated. The means for initiating a distress call should be as prescribed in 2.5 to 2.9 of Part A.

5 Initiation of DSC distress calls should take precedence over any other operation of the facility.

6 Self-identification data should be stored in the DSC unit. It should not be possible for the user easily to change these data.

7 Means should be provided to enable routine testing of the DSC facilities without radiation of signals.

8 Provision should be made for a specific aural alarms and visual indications to indicate receipt of a distress or urgency call or a call having a distress category.⁹ It should not be possible to disable this alarm and indication. Provision should be made to ensure that they can be reset only manually.

PART E - NARROW-BAND DIRECT-PRINTING (NBDP) FACILITY

1 The facility should conform to the relevant ITU-R Recommendations pertaining to the NBDP system¹⁰. It should provide for the use of maritime mobile service identities in accordance with Appendix 43 of the ITU Radio Regulations. The facility should be capable of operating in the FEC and ARQ modes on the single-frequency channels allocated for distress NBDP operation.

2 Self-identification data should be stored in the NBDP unit. It should not be possible

⁸ IEC 61162.

⁹ ITU-R M.493.

for the user easily to change these data.

3 The NBDP facility should comprise:

- .1 means to decode and encode messages;
- .2 means for composing and verifying messages to be transmitted; and
- .3 means for providing a record of received messages. .]

ANNEX 9

WORK PLAN FOR RELATED AND CONSEQUENTIAL AMENDMENTS TO EXISTING INSTRUMENTS OTHER THAN SOLAS (English only)

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / STATUS	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
Resolution A.806(19) as amended by MSC.68(68) annex 3 <u>New MSC resolution</u>	<u>Performance standards for shipborne for MF and MF/HF radio installations capable of voice communication[, narrow-band direct-printing] and digital selective calling</u> Performance standards for shipborne MF/HF radio installations capable of voice communications and digital selective calling	<ul style="list-style-type: none"> <u>Draft M</u> may need to be revised with respect to decisions on NBDP, <u>in particular, HF MSI reception</u> 4. <u>Consider requirement for Automatic Link Establishment (ALE)</u> <p><u>IN PROGRESS</u></p>	Japan <u>Germany</u>	NCSR 7
Resolution A.805(19)	Performance standards for float-free VHF emergency position-indicating radio beacons	<ul style="list-style-type: none"> <u>Request the Assembly to</u> be <u>revoke</u> it 	(None)	NCSR 7

¹ Review/amendment by the Secretariat of the preambular paragraphs of any resolutions to be amended.

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
Resolution A.801(19) as amended by MSC.199(80)	Provision of radio services for the global maritime distress and safety system, (GMDSS)	<ul style="list-style-type: none"> Will need to be revised in respect of new satellite providers and A3 and A4 Sea Areas 2. Consider the need for guidance for coastal radio stations <p><u>IN PROGRESS</u></p>	France	<p>NCSR 6 for the amendments approved by MSC 98</p> <p>The instrument may be revised at a later stage, after adoption of draft SOLAS chapter IV</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendices 6 and 11)</p>
Resolution A.707(17)	Charges for Distress, Urgency and Safety Messages through the Inmarsat System	<ul style="list-style-type: none"> Revise for additional satellite service providers 3. Consider provision of shore-to-ship MSI broadcasts without charge to the originator <p><u>IN PROGRESS</u></p>	IMSO	<p>NCSR 7</p> <p>See first draft version NCSR 6/12, annex, appendix 12</p>

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
Resolution A.702(17)	Radio maintenance guidelines for the global maritime distress and safety system (GMDSS) related to sea areas A3 and A4	<p>4. References to Sea Areas and Inmarsat need to be revised</p> <p><u>IN PROGRESS</u></p>	CIRM, [Poland,] United Kingdom	<p>NCSR 6 for the amendments approved by MSC 98</p> <p>The instrument may be revised at a later stage, after adoption of draft SOLAS chapter IV</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 7)</p>
Resolution A.696(17)	on Type approval of satellite emergency position-indicating radio beacons (EPIRBs) operating in the COSPAS-SARSAT	<ul style="list-style-type: none"> References to satellite EPIRB 5. References to COSPAS-SARSAT procedures <p><u>COMPLETED (New draft performance standards and type approval provisions have been consolidated in a new draft MSC resolution)</u></p>	United States	<p>NCSR 7</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 18)</p> <p>Consolidated version, including possible merging with resolution A.810(19) to be submitted by the United States to NCSR 6</p>

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
Resolution MSC.306(87)	Revised performance standards for Enhanced Group Call (EGC) equipment	<p>6. Make provision for any additional satellite service providers, if necessary</p> <p><u>IN PROGRESS</u></p>	Done by MSC 98 (resolution 431(98))	<p>NCSR 6 for the amendments approved by MSC 98</p> <p>The instrument may be revised at a later stage, after adoption of draft SOLAS chapter IV</p> <p>Need to check if further amendments are required.</p>
Resolution MSC.131(75)	Maintenance of a continuous listening watch on VHF channel 16 by SOLAS ships whilst at sea and installation of VHF DSC facilities on non-SOLAS ships	<p>7. Revoke or revise. (Note that the resolution encourages use of VHF DSC and does not reflect decision on continued channel 16 watch. A new instrument may be needed to contain the elements that are still relevant and of importance)</p> <p><u>ACTION TO BE REQUESTED OF THE COMMITTEE</u></p>	France	<p>NCSR 7</p> <p>To be revoked by the <u>Maritime Safety Committee</u>.</p>
MSC.1/Circ.1460/Rev.2	Guidance on the Validity of Radiocommunications Equipment Installed and Used on Ships	<p>8. Remove reference to HF radiocommunication equipment capable of operating NBDP</p> <p><u>IN PROGRESS</u></p>	United States	NCSR 7

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
MSC/Circ.1040/ Rev.1	Guidelines on annual testing of 406 MHz satellite EPIRBs	<ul style="list-style-type: none"> Ensure Guidelines are relevant for Second Generation Beacons 9. Provide for EPIRBs with AIS locators <p><u>IN PROGRESS</u></p>	Japan and United States (combine work with 1039)	NCSR 7 Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 15)
MSC/Circ.1039	Guidelines for shore-based maintenance of satellite EPIRBs	<ul style="list-style-type: none"> Revise to include AIS locators Delete L-band EPIRB 10. Review for needed changes in respect of Second Generation Beacons <p><u>IN PROGRESS</u></p>	Japan and United States (combine work with 1040)	NCSR 7 Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 14)
MSC/Circ.1038	Guidelines for general radiocommunications	<ul style="list-style-type: none"> 11. Requires revision with respect to "general communications" <p><u>IN PROGRESS</u></p>	United Kingdom	NCSR 7
MSC/Circ.803	Participation of non-SOLAS ships in the GMDSS	<ul style="list-style-type: none"> 12. Should be reviewed and generally updated (reference to 2182 kHz alarm signal which has been removed in COLREG by Res. A.1004(25)/Rev.1) <p><u>IN PROGRESS</u></p>	Germany	NCSR 7 Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 13)

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
COMSAR.1/Circ.50/Rev.3	Distress communications for RCC from shore-to-ship via Inmarsat priority	<p>13. Consider whether similar circular is needed for additional satellite providers</p> <p><u>IN PROGRESS</u></p>	United States	<p>NCSR 7</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 10)</p>
COMSAR/Circ.37	Guidance on minimum communication needs of Maritime Rescue Co-ordination Centres (MRCCs)	<ul style="list-style-type: none"> Make provision for any additional satellite service providers and revise any Inmarsat-specific terms such as SafetyNET. <p>14. Review section on Telex link – is it used?</p> <p><u>IN PROGRESS</u></p>	United States	<p>NCSR 6 for the amendments approved by MSC 98</p> <p>The instrument may be revised at a later stage, after adoption of draft SOLAS chapter IV</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 8)</p>

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
COMSAR/Circ.32	Harmonization of GMDSS requirements for radio installations on board SOLAS ships	<ul style="list-style-type: none"> Some terms need revision, i.e. "radar transponder"; "A3" and "A4" will have different meanings Update channel 16 watch requirements Is description of radio work station consistent with current bridge design? Make provision for any additional satellite service providers Is clarification of SOLAS, which need to be done later 15. Is interpretation and more countries need to be involved <p><u>IN PROGRESS</u></p>	Canada and United Kingdom	<p>NCSR 6 for the amendments approved by MSC 98</p> <p>The instrument may be revised at a later stage, after adoption of draft SOLAS chapter IV</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 9)</p> <p><u>Draft appendix 1 to COMSAR/Circ.32 has been relocated under the new MSC circular on Interim guidance on the technical requirements for Fleet safety</u></p>
COMSAR/Circ.17	Recommendation on use of GMDSS equipment for non-safety communications	<p>16. Consider including in a revision of MSC/Circ.1038</p> <p><u>IN PROGRESS</u></p>	United Kingdom	NCSR 7

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
COM/Circ.117	Clarifications of the application of certain provisions of chapter IV of the SOLAS Convention	<ul style="list-style-type: none"> content to be included in the draft SOLAS chapter IV 17.• to be revoked <p><u>ACTION TO BE TAKEN BY THE SUB-COMMITTEE</u></p>	(None)	NCSR 7
COM/Circ.110 + Corr.1	Clarifications of SOLAS regulations IV/6.1, IV/6.2.2 and IV/10.1.1.3	<ul style="list-style-type: none"> content to be included in the draft SOLAS chapter IV 18.• to be revoked <p><u>ACTION TO BE TAKEN BY THE SUB-COMMITTEE</u></p>	(None)	NCSR 7
COM/Circ.105 + Corr.1	Clarification of certain provisions of the 1998 SOLAS amendments for the GMDSS	<ul style="list-style-type: none"> content to be included in the draft SOLAS chapter IV 19.• to be revoked <p><u>ACTION TO BE TAKEN BY THE SUB-COMMITTEE</u></p>	(None)	NCSR 7
Resolution A.803(19), as amended by resolution MSC.68(68), annex 1	Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling	<ul style="list-style-type: none"> Consider Frequency and Channels requirements to be in line with the RR and MSC.1/Circ.1460/Rev.2 20.• Consider operational procedures which may have changed since the establishment of the original standard <p><u>IN PROGRESS</u></p>	Germany	<p>NCSR 7</p> <p>Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 16)</p>

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
Resolution MSC.191(79)	Performance Standards for the presentation of navigation – related information on shipborne navigational displays	<ul style="list-style-type: none"> Consider necessary changes to cover information on displays of communication equipment as well as shipborne navigational displays today <p><u>IN PROGRESS</u></p>	Germany taking into account the outcome of the Correspondence Group on development of the Guidelines for the harmonized display of navigation information received via communications equipment	NCSR 7 Revised by IMO-ITU EG 14 (see NCSR 6/12, annex, appendix 17)
Resolution A.809(19)	Performance Standards for survival craft two-way VHF radio telephone apparatus	<p><u>IN PROGRESS</u></p>	Japan	NCSR 7
Resolution MSC.36(63) as amended by MSC.174(79), MSC.221(82), and MSC.259(84)	International Code of Safety for High Speed Craft (1994)	<p>1. • Align the code with revisions to SOLAS chapters III and IV</p> <p><u>IN PROGRESS</u></p>	Depending on the outcome of NCSR 5, the instrument may be considered by IMO/ITU-EG	NCSR 7
Resolution MSC.97(73) as amended by <u>resolutions</u> MSC.175(79), MSC.222(82), MSC.260(84), and MSC.271(85)	International Code of Safety for High Speed Craft, 2000	<p>2. • Align the code with revisions to SOLAS chapters III and IV</p> <p><u>IN PROGRESS</u></p>	Depending on the outcome of NCSR 5, the instrument may be considered by IMO/ITU-EG	NCSR 7
Resolution A.534(13) as amended by <u>resolutions</u> MSC/Circs.446, 478, 739, MSC.183(79)	Code of Safety for Special Purpose Ships (in force for existing ships certified before 13 May 2008)	<p>3. • Align the code with revisions to SOLAS chapters III and IV</p> <p><u>IN PROGRESS</u></p>	Depending on the outcome of NCSR 5, the instrument	NCSR 7

IMO INSTRUMENT ¹	TITLE	REVISIONS REQUIRED / <u>STATUS</u>	DELEGATION(S) PREPARING FIRST DRAFT	NCSR SESSIONS
			may be considered by IMO/ITU-EG	
Resolution MSC.266(84) as amended by <u>resolution MSC.299(87)</u>	Code of Safety for Special Purpose Ships, 2008	4. <u>Align the code with revisions to SOLAS</u> <u>IN PROGRESS</u>	Depending on the outcome of NCSR 5, the instrument may be considered by IMO/ITU-EG	NCSR 7
Resolution A.1023(26), <u>as amended by resolutions MSC.358(92), MSC.384(94), MSC.387(94) and MSC.407(96)</u>	Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009	5. <u>Align the code with revisions to SOLAS chapters III and IV</u> <u>IN PROGRESS</u>	Depending on the outcome of NCSR 5, the instrument may be considered by IMO/ITU-EG	NCSR 7
<u>Resolution A.649(16), as amended by MSC/Circ.561, and resolutions MSC.38(63), MSC.187(79), MSC.358(92) and MSC.383(94)</u>	<u>Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989</u>	6. <u>Align the code with revisions to SOLAS chapters III and IV</u> <u>IN PROGRESS</u>		<u>NCSR 7</u>
<u>Resolution A.414(11), as amended by MSC/Circ.561, and resolutions MSC.357(92) and MSC.382(94)</u>	<u>Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1979</u>	• <u>Align the code with revisions to SOLAS chapters III and IV</u> <u>IN PROGRESS</u>		<u>NCSR 7</u>
<u>Resolution MSC.385(94)</u>	<u>International Code for Ships Operating in Polar Waters (Polar Code)</u>	7. <u>Align the code with revisions to SOLAS chapters III and IV</u> <u>IN PROGRESS</u>		<u>NCSR 7</u>

ANNEX 10

DRAFT IMO POSITION ON WRC-19 AGENDA ITEMS CONCERNING MATTERS RELATING TO MARITIME SERVICES

~~**Note:** This document contains the draft IMO Position, as further developed by the Joint IMO/ITU Experts Group, at its fourteenth meeting from 3 to 7 September 2018, which was instructed to submit the updated draft IMO position to MSC 100, for the Committee's approval of the position to be submitted to ITU's Conference Preparatory Meeting to be held in February 2019.~~

General

Over 80% of world trade is transported by sea. This totals some 10 billion tonnes (53,600 billion tonne miles), of which about 29% is oil and gas, 30% is bulk (ore, coal, grain and phosphates), the remaining 41% being general cargo. Operating these merchant ships generates an estimated annual income of \$380 billion in freight rates within the global economy, amounting to 5% of total world trade.

The industry employs over 1.5 million seafarers.

Agenda item 1.3

1.3 to consider possible upgrading of the secondary allocation to the meteorological-satellite service (space-to-Earth) to primary status and a possible primary allocation to the Earth exploration-satellite service (space-to-Earth) in the frequency band 460-470 MHz, in accordance with Resolution **766 (WRC-15)**;

Background

Part of the frequency band 460-470 MHz is used by maritime mobile service for on-board communication stations in accordance with RR 5.287. The functions of these type of on-board communication include anchoring, berthing, damage control parties, security patrols, terrorism threats, fire-fighter communication etc. The use of this frequency band is considered very important for maritime community.

Draft IMO position

Protection of the existing maritime mobile service used for on-board communication stations to which the frequency band is already allocated on a primary basis should be ensured, and no additional constraints should be imposed.

Agenda item 1.5

1.5 to consider the use of the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) by earth stations in motion communicating with geostationary space stations in the fixed-satellite service and take appropriate action, in accordance with Resolution **158 (WRC15)**;

Background

Currently, there is a growing need for global broadband satellite communications by the maritime community for commercial, public and operational purposes. Some of this need can be met by allowing earth stations in motion to communicate with space stations of the FSS operating in the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space).

Draft IMO position

Recognizing the growing need for global broadband satellite communications in motion by the maritime community, IMO supports the establishment of appropriate operational and technical conditions for Earth Stations In Motion.

Agenda item 1.7

1.7 to study the spectrum needs for telemetry, tracking and command in the space operation service for non-GSO satellites with short duration missions, to assess the suitability of existing allocations to the space operation service and, if necessary, to consider new allocations, in accordance with Resolution **659 (WRC-15)**;

Background

Resolution **659 (WRC-15)** invites ITU-R to consider possible new allocations or an upgrade of the existing allocations to the space operation service within the frequency ranges 150.05-174 MHz and 400.15-420 MHz. In the parts of the frequency band 150.05-174 MHz priority is given to the maritime mobile service in accordance with RR 5.226 (see also RR articles 31 and 52, and RR appendix 18). The provision of RR 5.266 specifies the use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radio beacons (see also article 31).

The following frequency bands within 150.05-174 MHz and 400.15-420 MHz are listed in appendix 15 as frequencies for distress and safety communications for the Global Maritime Distress and Safety System (GMDSS), in which any emission causing harmful interference is prohibited:

- 156.2975 MHz - 156.3125 MHz (AP18 CH06): be used for communication between ship stations and aircraft stations engaged in coordinated search and rescue operations. It may also be used by aircraft stations to communicate with ship stations for other safety purposes;
- 156.5125MHz - 156.5275 MHz (AP18 CH70): be exclusively used in the maritime mobile service for distress and safety calls using digital selective calling;
- 156.6475MHz - 156.6625 MHz (AP18 CH13): be used for ship-to-ship communications relating to the safety of navigation;
- 156.7875 MHz - 156.8125 MHz (AP18 CH16): be used for distress and safety communications by radiotelephony. Additionally, the frequency 156.8 MHz may be used by aircraft stations for safety purposes only;
- 161.9625 MHz - 161.9875MHz (AP18 AIS 1) and 162.0125 MHz - 162.0375 MHz (AP18 AIS 2): be used for AIS search and rescue transmitters (AIS-SART) for use in search and rescue operations;
- 406.000 MHz - 406.100 MHz: be used exclusively by satellite emergency position indicating radio beacons in the Earth-to-space direction.

Draft IMO position

The integrity of GMDSS should be protected, and the following frequency bands should not be included in the study:

- 156.000 MHz -157.450 MHz, 160.600 -160.975 MHz and 161.475-162.050 MHz; and
- 405.900 MHz -406.200MHz.

Taking account of the relevance on the frequency bands with agenda items 1.9.1 and 1.9.2 the coordination with these agenda items needs to be considered.

Agenda item 1.8

1.8 to consider possible regulatory actions to support Global Maritime Distress Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution **359 (Rev.WRC-15)**;

Background

Issue A

IMO is in the process of GMDSS modernization. The modernization plan of the GMDSS has been endorsed by NCSR 4 and approved by MSC 98. Some new technologies are introduced for consideration in the modernization plan of the GMDSS, such as MF/HF NAVDAT. Meanwhile, ITU is continuing the study on NAVDAT, including revisions to ITU-R recommendations, as well as spectrum and regulatory issues, under this agenda item 1.8.

Issue B

At MSC 98 the Committee adopted resolution MSC.434(98) on *Performance standards for a ship earth station for use in the GMDSS* and approved amendments to SOLAS chapter IV, enabling, when adopted at MSC 99, the introduction of additional GMDSS mobile satellite service providers. This followed the IMSO report to NCSR 4 noting the suggested timeline provided by Iridium for completing the technical and operational assessment of Iridium in 2018.

At MSC 99 the Committee adopted resolution MSC.451(99), *Statement Of Recognition of Maritime Mobile Satellite Services Provided by Iridium Satellite LLC*.

MSC 99 also adopted resolution MSC.436(99) on *Amendments to the International Convention for the Safety of Life at Sea*, including amendments through chapter IV to replace references to "Inmarsat" with the term "recognized mobile satellite service". The change reflects the ability of recognized providers of mobile satellite services to meet the GMDSS carriage requirements effective 1 January 2020.

~~Action to be taken: IMO has to actively participate in the technical and regulatory studies of this agenda item in accordance with Resolution **359 (Rev.WRC-15)**.~~

Draft IMO position

IMO invites ITU to:

- .1 when considering *resolves 1*, consider frequency allocations for NAVDAT which IMO supports but without committing the Organization regarding future requirements on the use of NAVDAT;
- .2 when considering *resolves 2* to take regulatory measures to ensure full protection and availability of the frequency bands to be used by recognized GMDSS satellite service providers for the provision of GMDSS services by 1 January 2020; and
- .3 resolve any issues under Resolution **359 (Rev.WRC-15)**, in relation to the future operation of newly recognized GMDSS satellite service providers.

Agenda item 1.9.1

1.9.1 regulatory actions within the frequency band 156-162.05 MHz for autonomous maritime radio devices to protect the GMDSS and automatic identifications system (AIS), in accordance with Resolution **362 (WRC-15)**;

Background

There are some types of autonomous maritime radio devices using automatic identification system (AIS) technology or digital selective calling (DSC) technology, or transmitting synthetic voice messages, or with a combination of those technologies, which have been developed for, and are operating in, the maritime environment, and their number is expected to increase.

Some of these devices do not enhance the safety of navigation or serve the purpose of communication between coast stations and ship stations, or between ship stations, or between associated on-board communication stations, or survival craft stations and emergency position-indicating radio beacon stations, but occupying the spectrum and identities of the maritime mobile service.

There is a need to categorize and regulate the usage of autonomous maritime radio devices. ITU at its seventeenth WP 5B session adopted the preliminary draft definition of AMRD developed at the twelfth Joint Experts Group meeting and finalized the definition at its eighteenth WP 5B session in May 2017. The categorization of AMRD and relevant information are contained in the draft new recommendation ITU-R M.[AMRD].

Draft IMO position:

1. the integrity of AIS and the Global Maritime Distress and Safety System (GMDSS) should be protected;
2. autonomous maritime radio devices which enhance the safety of navigation should be regulated for the use of frequencies and identities of the maritime mobile service; and
3. for autonomous maritime radio devices which do not enhance the safety of navigation, regulation of the use of frequencies, and technical and operational characteristics, should benefit both the user of devices as well as maritime safety. ~~An additional spectrum allocation within the frequency band~~

~~156-162.05 MHz and~~ ~~A~~a new numbering scheme which is different from those in the existing maritime mobile service should be considered.

Agenda item 1.9.2

1.9.2 modifications of the Radio Regulations, including new spectrum allocations to the maritime mobile-satellite service (Earth-to-space and space-to-Earth), preferably within the frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz of appendix **18**, to enable a new VHF data exchange system (VDES) satellite component, while ensuring that this component will not degrade the current terrestrial VDES components, applications specific messages (ASM) and AIS operations and not impose any additional constraints on existing services in these and adjacent frequency bands as stated in recognizing d) and e) of Resolution **360 (Rev.WRC-15)**;

Background

The concept of VDES includes the function of AIS, ASM, VDE terrestrial and VDE satellite. The VDES is one of the potential elements of e-navigation.

According to IALA Guideline 1117 "VDES Overview", the following potential VDES use cases are identified:

- Search and rescue communications;
- Maritime Safety Information;
- Ship Reporting;
- Vessel Traffic Services;
- Charts and Publications;
- Route Exchange; and
- Logistics.

VDES satellite component would offer additional communications in polar regions and other remote areas for the above use cases.

These use cases are all cross referenced to Maritime Service Portfolios identified in IMO e-navigation Strategic Implementation Plan and possibly also to modernization of GMDSS in future.

Insufficient study on sharing and compatibility between the VDES satellite component and incumbent services in the same and adjacent frequency bands was the cause that the spectrum issue could not be resolved at WRC-15. As a consequence, VDES is still not a complete functional system as a whole.

The study of the candidate frequency bands 156.0125-157.4375 MHz and 160.6125-162.0375 MHz would mainly concern the relationship with the existing services primarily allocated for the land mobile service and maritime mobile service, and with the services within lower adjacent frequency band from 154 MHz to 156 MHz and for the higher adjacent frequency band from 162 MHz to 164 MHz.

Draft IMO position

1. Recognizing that the VDES satellite component should not bring any harmful interference:
 - .1 modifications should not be required to existing AIS equipment on board existing vessels;
 - .2 the integrity of the GMDSS should be protected; and
 - .3 an identification of the frequencies for the VDES satellite component should protect the integrity of the original operational purpose of AIS on the existing AIS frequencies.
2. IMO supports the availability of VDES including both terrestrial and satellite components.

Agenda item 1.10

1.10 to consider spectrum needs and regulatory provisions for the introduction and use of the Global Aeronautical Distress and Safety System (GADSS), in accordance with Resolution **426 (WRC-15)**;

Background

The Global Aeronautical Distress and Safety System (GADSS) is intended to address the timely identification and location of an aircraft during all phases of flight as well as distress and emergency situations; and also intended to use existing and new applications to support search and rescue (SAR) and flight data retrieval. The full concept of GADSS is still to be defined by the International Civil Aviation Organization (ICAO), and some of the applications may be developed after 2019. ~~The spectrum needs is not yet identified.~~

Draft IMO position

The integrity of the GMDSS should be protected. The regulations for GADSS should be kept in a separate Article from the provisions on GMDSS contained within Chapter VII of the Radio Regulations.

—

Agenda item 2

2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution **28 (Rev.WRC-15)**, and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in annex 1 to Resolution **27 (Rev.WRC-12)**;

Background

There are a number of Recommendations incorporated by reference in the Radio Regulations. IMO has reviewed all these Recommendations.

Draft IMO position

IMO has studied the Recommendations of relevance and commented on each as given in annex 1. Incorporation by reference is of importance to IMO because of the close relationship between many of the ITU-R Recommendations related to GMDSS equipment and its operation, and to IMO performance standards. IMO requests ~~prompt~~ ~~early~~ indication of any changes proposed by ITU to the mechanism of incorporation by reference and to the list of incorporated Recommendations.

Agenda item 4

4 in accordance with Resolution **95 (Rev.WRC-07)**, to review the Resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

Background

There are a number of Resolutions and Recommendations in the Radio Regulations. IMO has reviewed all these Resolutions and Recommendations.

Draft IMO position

IMO has studied the Resolutions and Recommendations of relevance and commented on each as given in annex 2.

Agenda item 9

9 to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with article 7 of the Convention;

9.1 on the activities of the Radiocommunication Sector since WRC 15;

9.2 on any difficulties or inconsistencies encountered in the application of the Radio Regulations; and

9.3 on action in response to Resolution **80 (Rev.WRC-07)**

Issue 9.1.3:

Study of technical and operational issues and regulatory provisions for new non-geostationary-satellite orbit systems in the 3700-4200 MHz, 4500-4800 MHz, 5925-6425 MHz and 6725-7025 MHz frequency bands allocated to the fixed-satellite service.

Background

It is noted that the frequency band 6 424- 6 454 MHz is in use for the feeder links of Inmarsat.

Draft IMO position

Non-GSO systems shall not cause harmful interference to or claim protection from GSO FSS networks.

Agenda item 10

10 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, in accordance with article 7 of the Convention.

Background

Resolution 810 (WRC-15) containing the preliminary agenda for WRC-23, lists as item 2.1 for inclusion in the agenda for WRC-23, to consider possible spectrum needs and regulatory actions to support Global Maritime Distress and Safety System (GMDSS) modernization and the implementation of e-navigation, in accordance with Resolution **361 (WRC-15)**.

~~IMO is in the process of implementing the first phase of e-navigation, which is expected to take place in the period 2016 to 2019. As a consequence of GMDSS modernization, the SOLAS Convention will be revised, which is preliminarily planned to be finalized by June 2022 and to enter into force in 2024.~~

~~In May 2018, MSC 99 started a scoping exercise on maritime autonomous surface ships (MASS). Depending on the outcome of this exercise, IMO may request consideration of spectrum requirements and regulatory framework for this type of applications to ITU.~~

MSC-99 has received an application to recognize an existing mobile satellite system as part of the GMDSS and instructed the NCSR Sub-Committee to undertake the technical and operational evaluation.

Draft IMO position

Retain agenda item 2.1 of resolution 810 (WRC-15) containing the preliminary agenda for WRC-23, to consider possible spectrum needs and regulatory actions to support Global Maritime Distress and Safety System (GMDSS) modernization and the implementation of e-navigation, in accordance with Resolution **361 (WRC-15)**, which may need to be amended.

~~TBD~~

~~[IMO suggest inclusion of an agenda item to consider regulatory actions, including spectrum allocations, to ensure full protection and availability of the frequency bands to be used by the existing mobile satellite system for the provision of GMDSS services in the agenda of WRC-23]~~

ANNEX 1

RECOMMENDATION ITU-R M.476-5

Direct-printing telegraph equipment in the maritime mobile service
(Question ITU-R 5/8)

(1970-1974-1978-1982-1986-1995)

Required by the maritime community.

RECOMMENDATION ITU-R M.489-2

**Technical characteristics of VHF radiotelephone equipment operating
in the maritime mobile service in channels spaced by 25 kHz**

(1974-1978-1995)

Needed by IMO to support the carriage requirements of SOLAS IV and needed by the maritime community in general. Will likely be needed into the foreseeable future.

RECOMMENDATION ITU-R M.492-6

**Operational procedures for the use of direct-printing telegraph equipment
in the maritime mobile service**
(Question ITU-R 5/8)

(1974-1978-1982-1986-1990-1992-1995)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS chapter IV, although the system is little used.

RECOMMENDATION ITU-R M.541-10

**Operational procedures for the use of digital selective-calling equipment
in the maritime mobile service**
(Question ITU-R 9/8)

(1978-1982-1986-1990-1992-1994-1995-1996-1997-2004-2015)

Needed by IMO. Likely to be needed into the foreseeable future.

RECOMMENDATION ITU-R M.585-7

Assignment and use of identities in the maritime mobile service

(1982-1986-1990-2003-2007-2009-2012-2015)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.625-4

**Direct-printing telegraph equipment employing automatic identification
in the maritime mobile service**

(1986-1990-1992-1995-2012)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS chapter IV, although the system is little used.

RECOMMENDATION ITU-R M.633-4

**Transmission characteristics of a satellite emergency position-indicating
radio beacon (satellite EPIRB) system operating through
a satellite system in the 406 MHz band**

(1986-1990-2000-2004-2010)

Used by IMO to support the Performance standards for EPIRBs.

RECOMMENDATION ITU-R M.690-3

**Technical characteristics of emergency position-indicating radio beacons (EPIRBs)
operating on the carrier frequencies of 121.5 MHz and 243 MHz**

(1990-1995-2012-2015)

Required by IMO to define the homing signal characteristics for the satellite EPIRB required by SOLAS chapter IV. Likely to be used by the maritime community for some time to come for EPIRBs and man overboard devices.

RECOMMENDATION ITU-R M.1084-5

**Interim solutions for improved efficiency in the use of the band
156-174 MHz by stations in the maritime mobile service**

(1994-1995-1997-1998-2001-2012)

Used by IMO for the description of VHF channels.

RECOMMENDATION ITU-R M.1171-0

Radiotelephony procedures in the maritime mobile service

(1995)

Required by IMO and the maritime community as long as coast stations offer a public correspondence service. The number of such coast stations is however declining.

RECOMMENDATION ITU-R M.1172-0

Miscellaneous abbreviations and signals to be used for radiocommunications in the maritime mobile service

(1995)

Required by the maritime community.

RECOMMENDATION ITU-R M.1173-1

Technical characteristics of single-sideband transmitters used in the maritime mobile service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz and between 4 000 kHz and 27 500 kHz

(1995 -2012)

Required by IMO and the maritime community and likely to be required into the foreseeable future.

RECOMMENDATION ITU-R M.1174-3

Technical characteristics of equipment used for onboard vessel communications in the bands between 450 and 470 MHz

(1995-1998- 2004-2015)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.1638-0

Characteristics of and protection criteria for sharing studies for radiolocation, aeronautical radionavigation and meteorological radars operating in the frequency bands between 5 250 and 5 850 MHz

(2003)

Not required by IMO but may be required by the maritime community where radars in this band are used.

ANNEX 2

RESOLUTION 13 (REV.WRC-97)

Formation of call signs and allocation of new international series

Retain.

RESOLUTION 18 (REV.WRC-15)

Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict

Retain.

RESOLUTION 205 (REV.WRC-15)

Protection of the systems operating in the mobile-satellite service in the frequency band 406-406.1 MHz

Retain.

RESOLUTION 207 (REV.WRC-15)

Measures to address unauthorized use of and interference to frequencies in the bands allocated to the maritime mobile service and to the aeronautical mobile (R) service

Retain.

RESOLUTION 222 (REV.WRC-12)

Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service, and procedures to ensure long-term spectrum access for the aeronautical mobile-satellite (R) service

Retain.

RESOLUTION 331 (REV.WRC-12)

Operation of the Global Maritime Distress and Safety System

Retain.

RESOLUTION 339 (REV.WRC-07)

Coordination of NAVTEX services

Retain.

RESOLUTION 343 (REV. WRC-12)

**Maritime certification for personnel of ship stations and ship earth stations
for which a radio installation is not compulsory**

Retain to ensure common operations between Convention and non-Convention ships.

RESOLUTION 344 (REV. WRC-12)

**Management of the maritime mobile service identity
numbering resource**

Retain.

RESOLUTION 349 (REV. WRC-12)

**Operational procedures for cancelling false distress alerts in the
Global Maritime Distress and Safety System**

Retain.

RESOLUTION 352 (WRC-03)

**Use of the carrier frequencies 12 290 kHz and 16 420 kHz for
safety-related calling to and from rescue coordination centres**

Retain.

RESOLUTION 354 (WRC-07)

Distress and safety radiotelephony procedures for 2 182 kHz

Retain.

RESOLUTION 356 (WRC-07)

ITU maritime service information registration

Retain.

RESOLUTION 359 (REV. WRC-15)

**Consideration of regulatory provisions for updating and modernization of the Global
Maritime Distress and Safety System**

Subject of agenda item 1.8.

RESOLUTION 360 (REV. WRC-15)

**Consideration of regulatory provisions and spectrum allocations to the maritime
mobile-satellite service to enable the satellite component of the VHF Data Exchange
System and enhanced maritime radiocommunication**

Subject of agenda item 1.9.2.

RESOLUTION 361 (WRC-15)

**Consideration of regulatory provisions for modernization of the
Global Maritime Distress and Safety System and
related to the implementation of e-navigation**

In the preliminary agenda for WRC-23.

RESOLUTION 362 (WRC-15)

**Autonomous maritime radio devices operating in
the frequency band 156-162.05 MHz**

Subject of agenda item 1.9.1.

RESOLUTION 612 (REV. WRC-12)

**Use of the radiolocation service between 3 and 50 MHz to
support high-frequency oceanographic radar operations**

Retain.

RECOMMENDATION 7 (REV.WRC-97)

**Adoption of standard forms for ship station and ship earth station licences
and aircraft station and aircraft earth station licences**

Retain.

RECOMMENDATION 37 (WRC-03)

**Operational procedures for earth stations
on board vessels (ESVs) use**

Retain.

RECOMMENDATION 316 (REV.MOB-87)

**Use of ship earth stations within harbours and other waters
under national jurisdiction**

~~Amend~~Retain.

ANNEX 11

DRAFT LIAISON STATEMENT TO ITU-R WP 5B

Autonomous maritime radio devices and identities in the maritime mobile service

1 IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its sixth session (16 to 25 January 2019), considered the liaison statements sent by ITU-R Working Party 5B (WP 5B) in June and November 2018, informing IMO on the progress on WRC-19 Agenda Item 1.9.1 on autonomous maritime radio devices (AMRD) and, in particular, on:

- .1 a list of applications for group A and group B AMRD (Annex 24 to Document 5B/646-E) (NCSR 6/12/9);
- .2 identities in the maritime mobile service and the consequential revision of Recommendation ITU-R M.585-7 (Annex 29 to Document 5B/538-E) (IMO/ITU EG 14/6/1) and taking into account the Working document towards a preliminary draft revision of Recommendation ITU-R M.585-7 (Annex 04 to Document 5B/646-E); and
- .3 the problem related to freeform numbering of location aid devices (AIS-SART, MOB, EPIRB-AIS) (Annex 22 to Document 5B/646-E) (NCSR 6/12/6).

2 The Sub-Committee took into account the advice provided by the fourteenth meeting of the Joint IMO/ITU Experts Group (3 to 7 September 2018), as provided in the report of the Experts Group (Document 5B/577, paragraphs 62 to 72, and appendix 4 of the annex).

List of applications group A and group B AMRD

3 The Sub-Committee considered a list of applications for group A and group B AMRD, as requested in the liaison statement sent by the November 2018 meeting of WP 5B (Annex 24 to Document 5B/646-E) and provided to the meeting in document NCSR 6/12/9. In this context, the Sub-Committee suggested the following list of applications:

Group A AMRD

- .1 MOB Class M
- .2 Mobile AtoN

4 To protect the integrity of AIS and GMDSS, the Sub-Committee was of the view that all MOB devices should have DSC Class M capability and therefore non-Class M devices should be considered as group B.

5 Taking into account the high number of AIS MOB devices presently on the market using frequencies AIS1 and AIS2 without DSC alerting function, the Sub-Committee suggested that such devices should no longer be placed on the market after a date to be decided by ITU.

Group B AMRD

6 IMO expressed the view that the examples of applications listed in the diagram of document NCSR 6/12/9 as group B AMRD were acceptable, except for the inclusion of telephony and further noted that the list might not be limited to these applications.

7 IMO noted also that for certain applications group B AMRD might be categorized as group A under certain conditions and scenarios as determined by Administrations. IMO further noted the need for harmonization of such conditions and scenarios and intends to consider this at future meetings.

Identities in the maritime mobile service

8 In considering the liaison statements sent by WP 5B and taking into account the Working document towards a preliminary draft revision of Recommendation ITU-R M.585-7 (Annex 04 to Document 5B/646-E) the Sub-Committee provided the following comments:

9 Concerning Annex 1 (Maritime mobile service identities), Section 1 (Assignment of identification to ship station), the Sub-Committee agreed with the proposed deletion.

10 Concerning Annex 1, Section 4, the Sub-Committee agreed with the proposed new MMSI format for Mobile AtoN.

11 Concerning Annex 2 (Maritime identities used for other maritime devices for special purposes), Section 2 (Devices using a freeform number identity), new No. 4 (Autonomous maritime radio devices), WP 5B is invited to consider whether the proposed numbering scheme for group A AMRD (9₁9₂8₃X₄X₅Y₆Y₇Y₈Y₉) is required, given the modifications in Annex 1 Section 4 concerning Mobile AtoN.

12 The Sub-Committee agreed that group A AMRD that are identified as MOB should use the numbering scheme as described in Annex 2, Section 2 of the working document towards a preliminary draft revision of Recommendation ITU-R M.585-7.

13 The Sub-Committee further supported the need for developing a more robust and extensive freeform numbering scheme for location aid devices, which might also be used for the identification of future devices developed using new technologies.

IMO's request to ITU-R WP 5B

14 IMO invites ITU-R WP 5B to take the above noted comments into consideration, as appropriate, and requests to be informed of the further discussion and outcome of the process.

ANNEX 12

DRAFT LIAISON STATEMENT TO ITU-R WP 5B

Characteristics and protection criteria for aeronautical and maritime systems

1 IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its sixth session from 16 to 25 January 2019, considered the liaison statement sent by ITU-R Working Party 5B (WP 5B) in May 2018 concerning the characteristics and protection criteria for aeronautical and maritime systems (Annex 32 to Document 5B/538-E) (NCSR 6/12/1), and comments as follows.

2 The Sub-Committee was of the view that the development of a new report or new recommendation on protection criteria for aeronautical and maritime systems should continue during the next study period (2019-2023).

3 The Sub-Committee considered that the following topics should be taken into account in the development of such report and/or recommendation:

- .1 Category "Unwanted radiation":
 - .1 LED lighting (up to VHF); and
 - .2 reported increase in background noise (MF/HF);
- .2 Category "Intended emissions":
 - .1 illegal music broadcasts from private persons (MF/HF); and
 - .2 over-the-horizon radars (OTHR) signals (HF); and
- .3 unintended emissions by transmitters which are blocked and emit a signal continuously.

4 The above-mentioned radiations and emissions have been observed to also appear on GMDSS distress frequencies listed in RR App. 15.

5 In the above-mentioned case of an unintended emission by a blocked transmitter (see paragraph 3.3 above), the situation may be complicated if such a blocked transmitter is located on board a ship or other platform distant from the shore. In such a case, the radiomonitoring personnel dealing with this would need a ship or helicopter in order to home in on such an interfering signal and eventually have the faulty system switched off. This may create a problem in the enforcement of applicable regulations.

6 As a consequence of a costly and complex enforcement, recent experience shows that administrations are reluctant to spring into action when considerable effort is required and as long as there is no immediate threat to life and physical condition, even when GMDSS distress frequencies have been disturbed heavily and continuously for days and, in one case, several weeks.

7 Further issues that may fall into the scope of protection criteria are:

- .1 intra-service interference of marine radar between solid-state marine radar against magnetron marine radar;

- .2 reported blackout of GPS from emissions on the upper channels of RR App. 18 (channels 88, 89); and
- .3 inhibition of L-band satellite communication (space to earth) at 1518 MHz and above due to out-of-band transmissions from IMT up to 1518 MHz.

IMO's request to ITU-R WP 5B

8 IMO invites ITU-R WP 5B to take the above noted comments into consideration, as appropriate, and requests to be informed of the further developments in this regard.

ANNEX 13

~~DRAFT~~ RESOLUTION ~~A.810(19)~~ ~~MSC.[...(...)]~~
adopted on ~~[...]23 November 1995~~

~~As amended by MSC.56(66), 120(74), XXX(XX)~~
~~(with amendments incorporated)~~

PERFORMANCE STANDARDS FOR FLOAT-FREE ~~SATELLITE~~ EMERGENCY
POSITION-INDICATING RADIO BEACONS (EPIRBs)
OPERATING ON 406 MHz

~~THE ASSEMBLY,~~

~~RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,~~

THE MARITIME SAFETY COMMITTEE,

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

[RECALLING ALSO regulations IV/7.1.6^[5] and 14.1 of the 1988 amendments to the International Convention for the Safety of Life at Sea (SOLAS), 1974, concerning radiocommunications for the Global Maritime Distress and Safety System (GMDSS), which require, respectively, that ships be provided with a satellite emergency position-indicating radio beacon (EPIRB) and that such EPIRBs shall conform to appropriate performance standards not inferior to those adopted by the Organization,

RECOGNIZING the need to prepare performance standards for float-free ~~satellite~~ EPIRBs operating on 406 MHz through the ~~a polar-orbiting~~ Cospas-Sarsat System of low-altitude earth orbiting, medium-altitude earth orbiting, and geostationary earth orbiting satellites ~~system on 406 MHz~~ to be used in the GMDSS, in order to ensure the operational reliability of such equipment and to avoid, as far as practicable, adverse interaction between such equipment and other communication and navigation equipment on board ship,

RECOGNIZING ALSO that EPIRBs, as a component of the GMDSS and operating through the Cospas-Sarsat System in the frequency band 406-406.1 MHz (406 MHz EPIRBs), should be type-approved to ensure the integrity of the Cospas-Sarsat satellite system, avoid harmful interference to the spaceborne equipment, exclude unauthorized transmissions, and to provide reliable data to rescue co-ordination centres,]

HAVING CONSIDERED the recommendation made by Sub-Committee on Navigation, Communications and Search and Rescue at its [...] session ~~the Maritime Safety Committee at its sixty-fifth [XX] session,~~

1- ADOPTS the ~~Recommendation on Performance Standards for Float-Free Satellite Emergency Position-Indicating Radio Beacons (EPIRBs) Operating on 406 MHz~~ set out in the ~~Annex~~ to the present resolution;

2- RECOMMENDS ~~that Governments~~ Member States to ensure that float-free ~~satellite~~ EPIRBs operating on the frequency 406 MHz, which form part of the GMDSS:

- (a) if installed on or after 23 November 1996[effective date, recommend three years following date of resolution adoption], conform to performance standards and type-approval standards not inferior to those specified in the Annex to the present resolution;
 - (b) if installed before 23 November 1996[effective date], conform to performance standards not inferior to those specified in the Annex to resolution A.763(18), A.810(19), as amended by resolutions MSC.56(66) and MSC.120(74), and type-approval standards not inferior to those specified in resolution A.696(17);
 - ~~(c) if installed before 4 November 1994, conform to performance standards not inferior to those specified in the Annex to resolution A. 763(18), except that they need not be provided with the 121.5 MHz homing beacon required by 2.3.14 of part A thereof;~~
3. INVITES the Cospas-Sarsat partners to ensure that any amendments to the specification for Cospas-Sarsat 406 MHz distress beacons that could impact on this performance standard are agreed with the Organization prior to their adoption;
4. REQUESTS the Maritime Safety Committee to ensure that any proposed amendments to this resolution are agreed with the Cospas-Sarsat partners prior to their adoption;
- ~~5. REQUESTS ALSO the Maritime Safety Committee to review the code assignment method recommended in 4 of part B of the Annex to this resolution prior to 1 February 1997;~~
6. REQUESTS FURTHER the Maritime Safety Committee to keep these Performance Standards under review and to adopt amendments thereto, as necessary.

ANNEX

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR
FLOAT-FREE
SATELLITE EMERGENCY POSITION-INDICATING RADIO
BEACONS (EPIRBs) OPERATING ON 406 MHz**

Part A – GENERAL

1 INTRODUCTION

The satellite emergency position-indicating radio beacon (EPIRB) should, in addition to meeting the requirements of the Radio Regulations, the relevant ITU-R Recommendations and the general requirements set out in resolution A. 694(17), comply with the following performance standards.

2 GENERAL

2.1 The satellite EPIRB should be capable of transmitting a distress alert, including encoded position information from a receiver using a recognised global navigation satellite system (GNSS) with global coverage, to a polar-orbiting satellites equipped with a search and rescue 406 MHz processor or repeater.

2.2 The EPIRB should be of an automatic float-free type. The equipment, mounting and releasing arrangements should be reliable, and should operate satisfactorily under the most extreme conditions likely to be met with at sea.

2.3 The satellite EPIRB should:

- .1 be fitted with adequate means to prevent inadvertent activation;
- .2 be so designed that the electrical portions are watertight at a depth of 10 m for at least 5 min. Consideration should be given to a temperature variation of 45°C during transitions from the mounted position to immersion. The harmful effects of a marine environment, condensation and water leakage should not affect the performance of the beacon;
- .3 be automatically activated after floating free;
- .4 be capable of manual activation and manual deactivation;
- .5 be provided with means to indicate that signals are being emitted;
- .6 be capable of floating upright in calm water and have positive stability and sufficient buoyancy in all sea conditions;
- .7 be capable of being dropped into the water without damage from a height of 20 m;
- .8 be capable of being tested, without using the satellite system, to determine that the EPIRB is capable of operating properly;
- .9 be of highly visible yellow/orange colour and be fitted with retroreflecting material;

- .10 be equipped with a buoyant lanyard suitable for use as a tether (to a liferaft, lifeboat or person in the water but not to the ship), which should be so arranged as to prevent its being trapped in the ship's structure when floating free;
- .11 be provided with a low duty cycle light (0.75 cd), active during darkness, and visible to the human eye and detectable by all types of night vision devices, to indicate its position to nearby survivors and to rescue units;
- .12 not be unduly affected by seawater or oil or both;
- .13 be resistant to deterioration in prolonged exposure to sunlight; and
- .14 be provided with a 121.5 MHz beacon primarily for homing by aircraft; and
- .15 be provided with a GNSS receiver for position fixes and an associated indication that GNSS signal reception is satisfactory or unsatisfactory; and
- .16 be provided with an Automatic Identification System locating signal in accordance with the Recommendation ITU-R M.1371, Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile frequency band.

2.4 The battery should have sufficient capacity to operate the satellite EPIRB for a period of at least 48 h.

2.5 The satellite EPIRB should be so designed as to operate under any of the following environmental conditions:

- .1 ambient temperatures of -20°C to +55°C;
- .2 icing;
- .3 relative wind speeds up to 100 knots; and
- .4 after stowage, at temperatures between -30°C and +70°C.

2.6 The installed satellite EPIRB should:

- .1 have local manual activation; remote activation may also be provided from the navigating bridge, while the device is installed in the float-free mounting;
- .2 be capable, while mounted on board, of operating properly over the ranges of shock and vibration and other environmental conditions normally encountered above deck on seagoing ships; and
- .3 be designed to release itself and float free before reaching a depth of 4 m at a list or trim of any angle.

3 DISTRESS FUNCTION

3.1 When the satellite EPIRB is manually operated a distress alert should be initiated only by means of a dedicated distress alert activator.

3.2 The dedicated activator should:

- .1 be clearly identified; and
- .2 be protected against inadvertent operation.

3.3 Manual distress alert initiation should require at least two independent actions.

3.4 The **satellite** EPIRB should not be automatically activated after being manually removed from the release mechanism.

4 GNSS RECEIVER POSITION REPORTING

When the EPIRB is activated:

- .1 the GNSS position fix shall be updated at intervals of no more than 5 minutes; and
- .2 when an updated fix is transmitted in the AIS message for the first time, the error between the transmitted and the actual position shall not exceed 30 m assuming a drift rate of 3 kn.

45 LABELLING

5.1 Labelling for operation controls and indicators should, as far as possible, be understood through graphical images and symbols without the need for text.

5.2 In addition to the items specified in resolution A.694(17) on general requirements, the following should be clearly indicated on the exterior of the equipment:

- .1 brief operating instructions;
- .2 expiry date for the primary battery used; and
- .3 the identity codes programmed into the transmitters.

Part B - SATELLITE RADIO-FREQUENCY SIGNALS

1 The technical characteristics of the transmitted signal and the message format should be in accordance with the requirements of the Cospas-Sarsat System document C/S T.001 or C/S T.018.

2 Provisions should be included for storing the fixed portion of the distress message in the satellite EPIRB using non-volatile memory.

3 A unique beacon identification code should be made part of all 406 MHz messages. For EPIRBs compliant with C/S T.001 this identification code should include a 3-digit maritime identification digits (MID) code ~~for~~ to denote the country in which the beacon is registered, followed by either:

- .1 the trailing 6 digits of the ship station identity in accordance with Appendix 43 of ITU Radio Regulations Recommendation ITU-R M.585, Assignment and use of identities in the maritime mobile service; or
- .2 a unique serial number; or
- .3 a radio call sign.

Preference is given to method in sub-paragraph .1 above.

For EPIRBs compliant with C/S T.018 this identification code should include a 3-digit maritime identification digits (MID) code to denote the country in which the beacon is registered, followed by a unique serial number and either the maritime mobile service identity or a radio call sign.

4 The 121.5 MHz homing signal should:

- .1 have a 121.5 MHz ~~continuous-transmitting~~ duty cycle ~~of 121.5 MHz~~ not less than 50% (1.125 seconds on, 1.125 seconds off); ~~except that it may be interrupted for up to a maximum of 2 s during the transmission of the 406 MHz signal and if more than 50%, the on time should be increased beyond 1.125 seconds and the off time reduced accordingly; and~~
- .2 with the exception of the sweep direction, meet the technical characteristics of Appendix ~~37A~~ 15 of the Radio Regulations. The sweep may be either upward or downward.

5 The AIS locating signal should:

- .1 transmit in accordance with recommendation ITU-R Rec M.1371;
- .2 start after the first 406 MHz satellite message and ensure the AIS signal does not conflict with a scheduled 406 MHz satellite signal;
- .3 when the AIS signal coincides with a scheduled 121.5 MHz homing signal, then the 121.5 MHz homing signal may be interrupted for the transmission of the AIS signal, provided the minimum 50% duty cycle is maintained;
- .4 broadcast the Cospas-Sarsat beacon 15 HEX-ID in the AIS message 14, alternating with the text "EPIRB ACTIVE" on AIS1 and AIS2; and
- .5 indicate in the transmitted AIS locating signal when the included position fix is more than 5 minutes old.

Part C –TYPE APPROVAL OF EPIRBs OPERATING IN THE Cospas-Sarsat SYSTEM

1 EPIRBs forming an integral component of the global maritime distress and safety system and operating through the Cospas-Sarsat satellite system in the frequency band 406 -- 406.1 MHz should be type approved to ensure the integrity of the Cospas-Sarsat satellite system, avoid harmful interference to the spaceborne equipment, exclude unauthorized transmissions, and to provide reliable data to rescue coordination centres.

2 National administrations should:

.1 Ensure, as part of national type approval procedures, that any new type of EPIRB to be deployed on board ships is tested to confirm that it is in accordance with the performance standards for EPIRBs; confirmation that the EPIRB meets part B of this performance standard can be achieved by either:

- .1 performing, or having performed, under national procedures, all appropriate tests; and/or
- .2 accepting type approval test results obtained through the Cospas-Sarsat type approval procedure for first generation beacons (Cospas-Sarsat document C/S T.007) or the Cospas-Sarsat type approval procedure for second generation beacons (Cospas-Sarsat document C/S T.021) and confirmed by the delivery of a Cospas-Sarsat Type Approval Certificate; and

.2 Encourage national type approval authorities to develop test procedures compatible, to the extent possible, with Cospas-Sarsat System document C/S T.007 or C/S T.021 as appropriate and, if necessary, in consultation with the Cospas-Sarsat Secretariat.

ANNEX 14

DRAFT LIAISON STATEMENT TO ITU-R WP 4C and 5B

Transmission characteristics of Emergency Position-Indicating Radio Beacon (EPIRB)

1 The IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), at its sixth session (16 to 25 January 2019), considered consequential changes that might be required in the related ITU documents emanating from draft new performance standards for maritime EPIRB operating in the 406 MHz band, as set out in the annex.

2 In this regard, the Sub-Committee considered potential changes to ITU-R Recommendations, including ITU-R M.633, M.690, M.1371, and would like to bring to the attention of WPs 4C and 5B the following elements:

- .1 new EPIRBs may be operated as a beacon according to Cospas-Sarsat documents, which indicate that the transmission characteristics and data formats for a satellite EPIRB operating through a satellite system in the 406 MHz band should be in accordance with Cospas-Sarsat Document C/S T.001 (Issue 4, Revision 3, June 2018 titled Specification for 406 MHz Cospas-Sarsat Distress Beacons) or Cospas-Sarsat Document C/S T.018 (Issue 1, Revision 3, June 2018 titled Specification for Second-Generation 406 MHz Cospas-Sarsat);
- .2 a 121.5 MHz homing signal should provide a transmitting duty cycle of not less than 50%, i.e. 1.125 seconds minimum on time, 1.125 seconds maximum off time, and if more than 50%, the on time should be increased beyond 1.125 seconds and the off time reduced accordingly, while in Recommendation ITU-R M.690 duty cycle is indicated as a minimum of 33%; and
- .3 EPIRBs may also transmit an Automatic Identification System (AIS) locating signal in accordance with Recommendation ITU-R M.1371. Modification of this Recommendation may be necessary in order to accommodate the transmission of the beacon hexadecimal ID code in the AIS message 14, alternating with the text "EPIRB ACTIVE" on AIS1 and AIS2.

IMO's request to ITU-R Working Parties 4C and 5B

3 IMO invites ITU-R WP 4C and 5B to take the above comments into consideration and take action, as appropriate.

ANNEX 15

DRAFT TERMS OF REFERENCE FOR THE FIFTEENTH MEETING OF THE JOINT IMO/ITU EXPERTS GROUP ON MARITIME RADIOCOMMUNICATION MATTERS

Purpose

To advise on the development of future requirements for maritime radiocommunications taking into account the operational needs as defined by IMO and the regulatory needs as defined by ITU.

Structure

The Experts Group consists in principle of people active in IMO and ITU with a representative range of viewpoints.

Contact points:

IMO Secretariat	–	Mr. J. Yasnikouski
ITU Secretariat	–	Mr. K. Bogens

IMO is prepared to provide the group leader.

Instructions

The Experts Group is instructed:

- 1 taking into account the outcome of discussions at NCSR 6 (NCSR 6/23, paragraphs 11.[..] to 11.[..], and NCSR 6/WP.5), to consider the interim report of the Correspondence Group on the Modernization of the GMDSS and other submissions received, providing draft amendments relating to unresolved issues of SOLAS chapters III and IV, as well as related and consequential amendments to other existing instruments related to the revision of SOLAS chapters III and IV, and specify matters which need further consideration by the Correspondence Group;
- 2 to provide a report on the outcome of discussions in the Experts Group, on draft amendments relating to unresolved issues of SOLAS chapters III and IV, as well as related and consequential amendments to other existing instruments related to the revision of SOLAS chapters III and IV, to the next meeting of the ICAO/IMO JWG on SAR, to be held from 9 to 13 September 2019, to enable the JWG to provide comments and advice on related and consequential amendments to NCSR 7;
- 3 to discuss the already available proposals for WRC-19, taking into account the outcome of CPM 19-2, and, in particular, proposals for consideration by the Conference which had not been foreseen when developing the IMO position, and advise the Secretariat on new issues not included in the IMO position to protect IMO's interest during the Conference;

- 4 taking into account document NCSR 6/WP.5, prepare draft amendments to Recommendation 316 (Rev.MOB-87) for appropriate action by Member States at WRC-19.
- 5 in relation to the regular work in ITU-R, to provide comments and advice, as appropriate; and
- 6 to prepare a report, containing comments, recommendations and proposals, for consideration by NCSR 7 and, as appropriate, for meetings of the relevant study groups and/or working parties of ITU-R.

Suggested method of working

The Experts Group should meet from 8 to 12 July 2019, at IMO Headquarters, London.

ANNEX 16

DRAFT TERMS OF REFERENCE FOR THE CORRESPONDENCE GROUP ON THE MODERNIZATION OF THE GMDSS

Taking into account the outcome of discussions at NCSR 6 (NCSR 6/23, paragraphs 11.[..] to 11.[..], and NCSR 6/WP.5), the Correspondence Group on the Modernization of the GMDSS is instructed to:

- .1 consider unresolved issues relating to the draft amendments to SOLAS chapters III and IV with a view to finalization;
 - .2 further develop related and consequential amendments to other existing instruments related to the revision of SOLAS chapters III and IV through the delegation(s) identified in the table containing the work plan;
 - .3 update the work plan for the review of existing instruments related to the draft amendments to SOLAS chapters III and IV;
 - .4 submit an interim report, providing related and consequential amendments, to the Joint IMO/ITU Experts Group (8 to 12 July 2019) for its consideration; and
 - .5 taking into account the outcome of discussions at the meeting of the Joint IMO/ITU Experts Group, submit a report, including updated related and consequential amendments, for consideration at NCSR 7.
-