INTERNATIONAL MARITIME ORGANIZATION

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SUB-COMMITTEE ON
RADIOCOMMUNICATIONS AND SEARCH
AND RESCUE
16th session
Agenda item 17

COMSAR 16/17
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REPORT TO THE MARITIME SAFETY COMMITTEE

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LIST OF ANNEXES

1 GENERAL

1.1 The Sub-Committee on Radiocommunications and Search and Rescue held its sixteenth session from 12 to 16 March 2012 under the Chairmanship of Mr. C. Salgado (Chile).

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

ALGERIA
ANGOLA
ANTIGUA AND BARBUDA
ARGENTINA
AUSTRALIA
AZERBAIJAN
BAHAMAS
BELGIUM
BRAZIL
BULGARIA
CANADA
CHILE
CHINA
COLOMBIA
CÔTE D'IVOIRE
CUBA
CYPRUS
DEMOCRATIC PEOPLES REPUBLIC OF KOREA
DENMARK
DOMINICAN REPUBLIC
EGYPT
ESTONIA
FINLAND
FRANCE
GERMANY
GREECE
INDONESIA
IRAN (ISLAMIC REPUBLIC OF)
IRAQ
IRELAND
ISRAEL
ITALY
JAMAICA
JAPAN
KENYA
KIRIBATI
LATVIA
LIBERIA
LIBYA
MALAYSIA
MALTA
MARSHALL ISLANDS
MEXICO
MOROCCO
NETHERLANDS
NEW ZEALAND
NIGERIA
NORWAY
PANAMA
PAPUA NEW GUINEA
PERU
PHILIPPINES
POLAND
PORTUGAL
REPUBLIC OF KOREA
ROMANIA
RUSSIAN FEDERATION
SAINT KITTS AND NEVIS
SAUDI ARABIA
SINGAPORE
SOUTH AFRICA
SPAIN
SWEDEN
SYRIAN ARAB REPUBLIC
THAILAND
TURKEY
TUVALU
UKRAINE
UNITED ARAB EMIRATES
UNITED KINGDOM
UNITED STATES
URUGUAY
VANUATU
VENEZUELA (BOLIVARIAN REPUBLIC OF)

and the following Associate Member of IMO:

HONG KONG, CHINA

1.3 The following United Nations specialized agencies were also represented:

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)
INTERNATIONAL TELECOMMUNICATION UNION (ITU)
WORLD METEOROLOGICAL ORGANIZATION (WMO)

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

INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
EUROPEAN COMMISSION (EC)
MARITIME ORGANISATION FOR WEST AND CENTRAL AFRICA (MOWCA)
LEAGUE OF ARAB STATES
INTERNATIONAL COSPAS-SARSAT PROGRAMME AGREEMENT (COSPAS-SARSAT)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)
EUROPEAN CONFERENCE OF POSTAL AND TELECOMMUNICATIONS ADMINISTRATIONS (CEPT)

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

COMITÉ INTERNATIONAL RADIO-MARITIME (CIRM)
INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND LIGHTHOUSE AUTHORITIES (IALA)
INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
INTERNATIONAL UNION OF MARINE INSURANCE (IUMI)
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL MARITIME PILOTS' ASSOCIATION (IMPA)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)
INTERNATIONAL MARITIME RESCUE FEDERATION (IMRF)
INTERNATIONAL SHIP MANAGERS' ASSOCIATION (InterManager)
INTERNATIONAL SAILING FEDERATION (ISAF)
THE INTERNATIONAL MARINE CONTRACTORS ASSOCIATION (IMCA)
INTERNATIONAL TRANSPORT WORKERS' FEDERATION (ITF)
THE NAUTICAL INSTITUTE (NI)

Secretary-General's opening address

1.5 The Secretary-General welcomed participants and delivered his opening address, the full text of which can be downloaded from the IMO website at the following link: http://www.imo.org/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetings.

Chairman's remarks

1.6 In responding, the Chairman thanked the Secretary-General for his words of guidance and encouragement and assured the Secretary-General that his advice and requests would be given every consideration in the deliberations of the Sub-Committee and its working groups.

Statement by delegations

1.7 The delegation of Poland expressed its special gratitude to the delegations of the Kingdom of Saudi Arabia and Egypt, for a successful search and rescue operation carried out in saving the life of the Polish kitesurfer, who undertook an attempt to cross the Red Sea from the Egyptian town of El Gouna to the port of Duba in Saudi Arabia. The search for the surfer, who was stranded in the middle of the Red Sea on 2 March 2012, took 40 hours and involved the deployment of Saudi Arabia's SAR resources, including an aerial mission. He was recovered from the water and taken to safety to the Saudi Arabian town of Duba. The delegation of Poland reiterated its great appreciation to the Saudi coastguard, and all involved in this operation, for yet another demonstration of their professionalism and devotion to their duties of safety of life at sea.

Adoption of the agenda and related matters

1.8 The Sub-Committee adopted the agenda (COMSAR 16/1), and agreed, in general, that the work of the Sub-Committee should be guided by the annotations to the provisional agenda and timetable (COMSAR 16/1/1, as amended).

2 DECISIONS OF OTHER IMO BODIES

2.1 The Sub-Committee noted the decisions and comments pertaining to its work by LEG 98, MSC 89, NAV 57, MEPC 62, FAL 37, C/ES.26 and A 27 (COMSAR 16/2 and COMSAR 16/2/1) and took them into account in its deliberations under the relevant agenda items.

2.2 The Sub-Committee also noted the relevant decisions of DE 56, which had taken place four weeks before and had been reported orally by the Secretariat under agenda item 16 (paragraphs 16.11 to 16.13 refer).

3 GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

FURTHER DEVELOPMENT OF THE GMDSS MASTER PLAN ON SHORE-BASED FACILITIES

3.1 The Sub-Committee noted document COMSAR 16/3/1 (Secretariat) and, in particular, that:

.1 GMDSS.1/Circ.13 (GMDSS Master Plan) included information provided by several Member Governments;

.2 the status of shore-based facilities, at the time of issuing GMDSS.1/Circ.13, was given in the annex to document COMSAR 16/3/1; and

.3 the Secretariat would issue GMDSS.1/Circ.14 in due course.

3.2 Noting the above information, the Sub-Committee reiterated its request for Member Governments to check their national data in GMDSS.1/Circ.13 for accuracy, and provide the Secretariat with any necessary amendments, at their earliest convenience, and to respond to MSC.1/Circ.1382, containing the Questionnaire on Shore-based Facilities for the GMDSS, if they had not already done so.

Revision of MSC.1/Circ.1382

3.3 The Sub-Committee briefly considered document COMSAR 16/3/4 (IHO et al.) providing proposed draft amendments to MSC.1/Circ.1382 on the Questionnaire on Shore-based Facilities for the GMDSS, in particular concerning annex 8 on the International SafetyNET Service.

3.4 After a brief discussion, the Sub-Committee agreed to refer it to the Technical Working Group to prepare a revision of annex 8 of this circular.

CONSIDERATION OF OPERATIONAL AND TECHNICAL CO-ORDINATION PROVISIONS OF MARITIME SAFETY INFORMATION (MSI) SERVICES, INCLUDING REVIEW OF THE RELATED DOCUMENTS

3.5 The Sub-Committee noted that MSC 89 had:

.1 approved the Revised NAVTEX Manual for dissemination by means of MSC.1/Circ.1403 and decided that the amendments would come into force on 1 January 2013; and

.2 endorsed the action taken by the Sub-Committee at its last session in authorizing the Secretariat to issue future updates of the list of NAVAREA Coordinators upon receipt of changes from either a NAVAREA Coordinator or from IHO and to issue appropriate revisions to the COMSAR circular, informing the COMSAR Sub-Committee accordingly.

3.6 The Sub-Committee further noted that the Secretariat, in consultation with IHO, had issued COMSAR.1/Circ.51/Rev.3 on the List of NAVAREA Coordinators.

Outcome of the third session of the IHO World-Wide Navigational Warnings Service Sub-Committee (WWNWS)

3.7 In considering document COMSAR 16/3/2 (IHO), the Sub-Committee noted with appreciation the matters discussed and decisions taken at the third session of the IHO WWNWS Sub-Committee (13 to 16 September 2011) held at the International Hydrographic Bureau in Monaco.

IMO NAVTEX Coordinating Panel

3.8 The Sub-Committee noted that the Chairman of the IMO NAVTEX Coordinating Panel, Cdr. Tim Sewell, had taken up a new posting and that the members of the Panel had unanimously endorsed Mr. Guy Beale as its new Chairman. The Sub-Committee congratulated Mr. Beale on his appointment and wished him good luck with this new assignment. The Sub-Committee invited the new Chairman of the IMO NAVTEX Coordinating Panel to convey to Cdr. Tim Sewell its sincere thanks and appreciation for all the work done by him as the Chairman of the Panel.

3.9 The Sub-Committee further noted with appreciation the report of the Chairman of the IMO NAVTEX Coordinating Panel (COMSAR 16/3/7) providing a summary of the current operational issues associated with the NAVTEX service worldwide, being addressed by the Panel and its actions/activities since COMSAR 15.

3.10 The Sub-Committee also noted additional information orally provided by the Chairman of the IMO NAVTEX Coordinating Panel on developments since the report had been submitted. With respect to paragraph 2.12.1.12.1 of document COMSAR 16/3/7, the Russian Federation had now completed the change of B1 Transmitter Identification Character for Arkangel'sk, and had also informed the Panel that the change for Murmansk would take place in March this year. This had allowed for the detailed plans mentioned in paragraph 2.1.1.1 for the utilization of a new station in Norway at Jeloya to be rapidly advanced, with full operation status scheduled for 1 May 2012, including the consequential changes to other stations in both NAVAREA I and the BALTIC SEA Sub-Area. To this end, the delegation of Sweden expressed their appreciation for the foreseen utilization of the new station in Norway at Jeloya, which would enable an improved coverage of the Swedish West coast.

COMSAR/Circ.36 on the broadcast of warnings for tsunamis and other natural disasters

3.11 The Sub-Committee considered document COMSAR 16/3/3 (IHO et al.) proposing that, following the revision of the WWNWS documentation, COMSAR/Circ.36 should be revoked on 1 January 2013.

3.12 After a brief discussion and noting from paragraph 1 of the circular that it was circulated pending the review of resolution A.706(17) on World-Wide Navigational Warning Service, the Sub-Committee agreed with the proposal and instructed the Secretariat to take appropriate action to revoke COMSAR/Circ.36 and invited the Committee to endorse the withdrawal of COMSAR/Circ.36 with effect from 1 January 2013.

Interconnection of NAVTEX and Inmarsat SafetyNET Receivers and their Display on Integrated Navigation Display Devices

3.13 The Sub-Committee considered document COMSAR 16/3/5 (United States) as to whether data standards should be defined which would allow Inmarsat C SafetyNET maritime safety information messages to be presented on a navigation display system display similar to NAVTEX information and whether navigation display systems should be required to portray such information, if that information would be available.

3.14 With regard to the proposed revision of performance standards, the Sub-Committee was informed by the Secretariat that there would be a need for an appropriate proposal by a Member Government to the Committee, for a new unplanned output to undertake such a revision.

3.15 After a brief discussion, the Sub-Committee decided to refer this document to the Technical Working Group for detailed consideration and advice, as appropriate.

ESTABLISHMENT OF THE TECHNICAL WORKING GROUP

3.16 The Sub-Committee established the Technical Working Group under the chairmanship of Mr. Alexander Schwarz (Germany) and instructed it, taking into account decisions of, and comments and proposals made in Plenary, to:

.1 consider document COMSAR 16/3/4 proposing draft amendments to MSC.1/Circ.1382 on the Questionnaire on Shore-based Facilities for the GMDSS and prepare a revision of annex 8 of this circular; and

.2 consider document COMSAR 16/3/5 containing the proposal on data standards for Inmarsat C SafetyNET Maritime Safety Information messages to be presented on navigation display system displays, and advise the Sub-Committee, as appropriate,

and submit its report on Thursday, 15 March 2012.

Report of the Technical Working Group

3.17 On receipt of the report of the Technical Working Group COMSAR 16/WP.4, section 3, the Sub-Committee took action as summarized in the ensuing paragraphs.

3.18 The Sub-Committee endorsed the draft revision of annex 8 to MSC.1/Circ.1382, on the International SafetyNET Service, as set out in annex 1, invited the Committee to approve it and to instruct the Secretariat to include this revised annex in the revised draft MSC circular, as set out in document COMSAR 15/16, annex 5 (MSC 90/8, paragraph 2.3 refers).

3.19 The Sub-Committee invited IEC, assisted by IMSO and CIRM, to develop a data interface definition for an Inmarsat C SafetyNET terminal similar to the existing definition for NAVTEX, for use by manufacturers of Inmarsat C terminals and navigation display systems (e.g. INS, ECDIS) on a voluntary basis. The Committee was invited to endorse this action.

SCOPING EXERCISE TO ESTABLISH THE NEED FOR A REVIEW OF THE ELEMENTS AND PROCEDURES OF THE GMDSS

3.20 The Sub-Committee recalled that COMSAR 15 had:

.1 authorized the establishment of a Correspondence Group on the Scoping exercise, under the coordination of the United States, to continue the work further intersessionally between COMSAR 15 and COMSAR 16 with a view to finalization at COMSAR 16; and

.2 endorsed the holding of the seventh meeting of the Joint IMO/ITU Experts Group and instructed it, among others, to consider the issue of the Scoping exercise.

3.21 In considering the relevant outcome of the Joint IMO/ITU Experts Group (Experts Group) (COMSAR 16/4), the Sub-Committee:

.1 noted that the meeting of the Experts Group was held at IMO Headquarters from 13 to 15 September 2011;

.2 noted the advice prepared by the Experts Group for the Correspondence Group on the Scoping exercise in relation to:

.1 the draft Work Plan as given in paragraphs 33 to 46 of the above-mentioned document; and

.2 the issue of the process for approving additional GMDSS satellite service providers as given in paragraphs 47 to 57 of the above-mentioned document; and

.3 agreed with the proposal from the Experts Group to invite the Committee to bring the Work Plan to the attention of the STW Sub-Committee, in particular, to consider issues related to the Human Element for advice, as appropriate.

3.22 The Sub-Committee considered document COMSAR 16/3 (United States) containing the Report of the Correspondence Group on the Scoping exercise and decided to refer it to the Drafting Group on the Finalization of the Scoping exercise:

.1 for finalization of the Work Plan to be presented to MSC 90 for approval, along with a proposal for a new unplanned output on the "Review and modernization of the Global Maritime Distress and Safety System"; and

.2 to prepare a draft MSC circular on Guidance to prospective GMDSS satellite service providers.

3.23 The Sub-Committee further considered document COMSAR 16/3/6 (Islamic Republic of Iran) providing information on the reception of false emergency signals in the GMDSS.

3.24 The Sub-Committee noted documents COMSAR 16/3/8 and COMSAR 16/3/9 (Australia) commenting on part of the Report of the Correspondence Group and providing:

.1 extensive information on changes in radiocommunication and radio navigation since the formal beginning of the implementation phase of the GMDSS in 1992; and

.2 additional inputs for the compelling need for a new agenda item on the Review and Modernization of the GMDSS, as well as some considerations for future work.

3.25 The Sub-Committee decided to refer these discussions to the Drafting Group for detailed consideration in accordance with the terms of reference set out below.

3.26 The delegation of France expressed the view that some issues reflected in resolution A.918(22), containing the IMO Standard Marine Communication Phrases, might need to be revised. In this context, the Sub-Committee agreed that a revision of this resolution should be taken up at a later stage during the review of the GMDSS, subject to approval by the Committee.

ESTABLISHMENT OF THE DRAFTING GROUP ON THE FINALIZATION OF THE SCOPING EXERCISE

3.27 The Sub-Committee established the Drafting Group on the Finalization of the Scoping exercise under the chairmanship of Mr. Kim Fisher (IEC) and instructed it, taking into account documents COMSAR 16/3, COMSAR 16/3/6, COMSAR 16/3/8, COMSAR 16/3/9 and COMSAR 16/4, and decisions of, and comments and proposals made in Plenary, to:

.1 based on document COMSAR 16/3, annex 1, finalize the draft Work Plan along with a proposal for a new unplanned output on the "Review and modernization of the Global Maritime Distress and Safety System" for approval by the Committee;

.2 prepare draft Terms of Reference for the Correspondence Group on the Review of the GMDSS for the intersessional work to be done between MSC 90 and COMSAR 17, subject to approval of the Work Plan by the Committee;

.3 based on information provided in document COMSAR 16/3, annex 2, finalize a draft MSC circular on Guidance to prospective GMDSS satellite service providers; and

.4 advise the Technical Working Group on its view on the number of days needed for the eighth meeting of the Experts Group, provisionally scheduled to take place in the week from 8 to 12 October 2012,

and submit its report on Wednesday, 14 March 2012.

Report of the Drafting Group on the Finalization of the Scoping exercise

3.28 On receipt of the report of the Drafting Group on the Finalization of the Scoping exercise (COMSAR 16/WP.6, section 12), the Sub-Committee took action as summarized in the ensuing paragraphs.

3.29 The delegation of South Africa, supported by The Islamic Republic of Iran, raised concerns with regard to the review of the GMDSS, in particular, on the known and unknown implications in terms of affordability by developing countries and that the Sub-Committee and the Committee should take note of these concerns. In this context, the Sub-Committee noted that paragraph 3.20 of the draft Work Plan already indicated "the need to indicate the facilities required for capacity-building".

3.30 The Sub-Committee approved the report, in general, and:

.1 endorsed the draft revised Work Plan on the "Review and modernization of the Global Maritime Distress and Safety System", as set out in annex 2, and invited the Committee to approve it, along with a new unplanned output on the "Review and modernization of the Global Maritime Distress and Safety System" with a target completion year of 2017 and include the proposed unplanned output in the biennial agenda of the COMSAR, NAV and STW Sub-Committees and in the provisional agenda for COMSAR 17;

.2 approved the Terms of Reference, as set out in annex 3, for the Correspondence Group on the Review of the GMDSS, under the coordination of the United States*, for the intersessional work to be done between MSC 90 and COMSAR 17 and invited the Committee to endorse it subject to approval of the Work Plan;

.3 endorsed the draft MSC circular on Guidance to prospective GMDSS satellite service providers, as set out in annex 4, and invited the Committee to approve it;

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.4 noted the views expressed by the delegation of the United Arab Emirates relating to the application of any new satellite service providers; and

.5 noted the Group's advice to the Technical Working Group that a period of five working days was sufficient for the eighth meeting of the Experts Group, provisionally scheduled to be held from 8 to 12 October 2012.

4 ITU MARITIME RADIOCOMMUNICATION MATTERS

CONSIDERATION OF RADIOCOMMUNICATION ITU-R STUDY GROUP MATTERS

Outcome of the seventh meeting of the Joint IMO/ITU Experts Group

4.1 In considering the report of the seventh meeting of the Experts Group (COMSAR 16/4), the Sub-Committee noted that ITU-R proposed a revision of Recommendation ITU-R M.585-5 to cover the allocation of numbers to DSC hand portable radios and that the revised Recommendation was approved by ITU-R Study Group 5 (November 2011) (paragraph 4.15 refers).

Outcome of ITU-R's Working Party 5B meeting of November 2011

4.2 In considering the outcome of ITU-R's Working Party 5B (WP 5B) meeting of November 2011 (COMSAR 16/4/1), the Sub-Committee:

.1 decided to refer the issue of the revision of Recommendation ITU-R M.493-13 on DSC for use in the maritime mobile service to the Technical Working Group for detailed consideration and preparation of a liaison statement on this matter to WP 5B, as appropriate;

.2 decided to refer the liaison statement given in annex 3 of the above-mentioned document, on the increased use of the band 9200-9300 MHz for marine radionavigation, to the Technical Working Group for the preparation of a liaison statement on this matter back to WP 5B; and

.3 noted the information provided in the document in general and, in particular, that certain maritime-related issues would be further discussed during the next Study Period, between WRC-12 and WRC-15.

NAVDAT – Digital system for broadcasting maritime safety- and security-related information in the 500 kHz band

4.3 The Sub-Committee further considered document COMSAR 16/4/3 (Belgium et al.) presenting the main performances of a digital system for broadcasting maritime safety- and security-related information in the 500 kHz band, named NAVDAT, and providing some applications of the system.

4.4 Several delegations expressed their interest in this newly developed system, but the majority of the delegations who spoke were of the view that there would be a need for a new unplanned output before the Sub-Committee could consider this issue.

4.5 The delegation of Romania, supported by others, explained that this system was a result of four years' work and fully in line with IMO's approved position on relevant WRC-12 Agenda items, in which IMO had supported an exclusive primary allocation to the maritime mobile service in the band 495-505 kHz to fulfil possible requirements in future.

4.6 In light of the foregoing, the Sub-Committee invited interested Member Governments to submit a proposal for a new unplanned output to the Committee.

Use of radio for diver applications in the GMDSS

4.7 The Sub-Committee also considered document COMSAR 16/4/4 (Germany et al.) bringing to the attention of the Sub-Committee that devices had been developed to assist divers during normal activities. These devices might use GMDSS techniques such as frequencies and numbering that might conflict with SAR operations, as well as compliance with regulatory arrangements in the Radio Regulations.

4.8 Several delegations expressed the view that there would be a need to send a liaison statement to ITU-R in which the purpose of the GMDSS was highlighted in relation to the use of designated GMDSS frequencies by non-GMDSS systems. The Sub-Committee recalled that it had earlier agreed that this kind of operation should be undertaken by non-GMDSS frequencies.

4.9 After a brief discussion, the Sub-Committee decided to refer this document to the Technical Working Group for detailed consideration and the preparation of a liaison statement to ITU-R Working Party 5B, as appropriate.

CONSIDERATION OF ITU WORLD RADIOCOMMUNICATION CONFERENCE MATTERS

Revision of the ITR requirements concerning Accounting Authorities

4.10 The Sub-Committee considered document COMSAR 16/4/2 (United States) providing information on ITU's World Conference on International Telecommunications (WCIT), to take place from 3 to 14 December 2012. The WCIT would consider and decide what changes needed to be made to the International Telecommunication Regulations (ITRs). To this end, Member Governments of ITU were preparing changes to the accounting authority provisions of the ITRs which might affect the non-distress safety and safety-related worldwide communications capabilities of the GMDSS including ships, coast stations, and land-earth stations.

4.11 The Sub-Committee decided to refer this document to the Technical Working Group, for detailed consideration and appropriate advice.

Outcome of the World Radiocommunication Conference 2012 (WRC-12)

4.12 The Sub-Committee noted that, following the instructions of MSC 89, the Expert Group had agreed on amendments to the Background sections of Agenda items 1.9 and 8.2 contained in the IMO position for WRC-12 (COMSAR 16/4).

4.13 The Sub-Committee further noted that:

.1 the Secretariat had submitted the IMO position for WRC-12 to ITU;

.2 WRC-12 took place in Geneva, Switzerland, from 23 January to 17 February 2012 and the next WRC was tentatively scheduled for 2015; and

.3 the Secretariat had participated in WRC-12 as an observer.

4.14 The Sub-Committee noted that WP 5B had finalized three relevant ITU-R Recommendations and one Report related to WRC-12 as the outcome of WP 5B's meeting in November 2011 (COMSAR 16/4/1).

4.15 The Sub-Committee further noted that following the approval of the revision of Recommendation ITU-R M.585-5 by Study Group 5 (paragraph 4.1 refers), the revised Recommendation was adopted by the Radio Assembly. Accordingly, WRC-12 had adopted amendments to article 19 of the Radio Regulations, incorporating annex 1, on MMSIs, of the new version of the recommendation, by reference into the Radio Regulations.

4.16 Having briefly considered document COMSAR 16/4/5 (Secretariat), providing information on the outcome of WRC-12 on issues of relevance to IMO, the Sub-Committee decided to refer this document to the Technical Working Group for a detailed review.

Terms of Reference for the Technical Working Group

4.17 The Sub-Committee instructed the Technical Working Group, taking into account decisions of, and comments and proposals made in Plenary, to:

.1 consider document COMSAR 16/4/1 regarding:

.1 the revision of Recommendation ITU-R M.493-13 on DSC, taking into account annexes 1 and 2 and prepare a liaison statement on this matter back to Working Party 5B, as appropriate; and

.2 the increased use of the band 9200-9300 MHz, for marine radionavigation, taking into account annex 3 and prepare a liaison statement on this matter back to Working Party 5B;

.2 consider document COMSAR 16/4/2 on proposed changes to the accounting authority provisions of the International Telecommunication Regulations (ITRs) and advise the Sub-Committee, as appropriate;

.3 consider document COMSAR 16/4/4 on devices which have been developed to assist divers during normal activities and prepare a liaison statement to ITU-R Working Party 5B, as appropriate;

.4 review document COMSAR 16/4/5 on the outcome of WRC-12 and advise the Sub-Committee, as appropriate; and

.5 taking into account the advice from the Drafting Group on the Finalization of the Scoping exercise, advise on the amounts of days needed, as well as on the Terms of Reference, for the eighth meeting of the Experts Group, provisionally scheduled to take place in the week from 8 to 12 October 2012,

and submit its report on Thursday, 15 March 2012.

Report of the Technical Working Group

4.18 On receipt of the report of the Technical Working Group (COMSAR 16/WP.4, section 4), the Sub-Committee took action as summarized in the ensuing paragraphs.

4.19 The Sub-Committee approved the draft liaison statements to ITU-R WP 5B and ITU-R WP 7C, as appropriate:

.1 on the "Work Plan adopted for revision of Recommendation ITU-R M.493-13", as set out in annex 5;

.2 "Regarding Recommendation ITU-R M.493-13", as set out in annex 6; and

.3 on "Proposed changes to Recommendations ITU-R M.824-3 and ITU-R M.1176 and WRC-15 Agenda item 1.12 and Resolution COM 6/18", as set out in annex 7,

and instructed the Secretariat to send these to ITU, and invited the Committee to endorse this action.

4.20 The Sub-Committee invited the Committee to recommend to Member States to consider carefully the proposal whether to delete or not to delete appendix 2 of the International Telecommunications Regulations requirements concerning Accounting Authorities, which would be discussed during the WCIT in December 2012.

4.21 The Sub-Committee decided to refer document COMSAR 16/4/5 on the outcome of WRC-12 to the eighth session of the Experts Group for a detailed review and to start the preparation of an IMO position on maritime issues for WRC-15 and in particular to:

.1 analyse the outcome of WRC-12 in line with the IMO position submitted to the Conference;

.2 analyse the Resolutions of WRC-12 in order to identify major areas of interest for IMO; and

.3 prepare initial advice on a draft IMO position to WRC-15.

4.22 The Sub-Committee endorsed the holding of the eighth meeting of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters at IMO Headquarters in London, from 8 to 12 October 2012, along with the Terms of Reference as set out in COMSAR 16/WP.4, annex 5 and invited the Committee to authorize the convening of this intersessional meeting.

5 CONSIDERATION OF DEVELOPMENTS IN INMARSAT AND COSPAS-SARSAT

INMARSAT SERVICES

5.1 The Sub-Committee noted that the Secretariat, in consultation with IMSO and Inmarsat, had issued:

.1 COMSAR.1/Circ.50/Rev.3 on Distress priority communications for RCCs from shore-to-ship via Inmarsat, containing the updated List of RCCs associated with Inmarsat Land Earth Stations (LESs); and

.2 COMSAR.1/Circ.53/Rev.1 containing the updated List of Land Earth Station (LES) Operation Coordinators in the Inmarsat system.

Distress priority communications in the shore-to-ship direction

5.2 The Sub-Committee recalled that COMSAR 15 had considered information and recommendations related to arrangements for the use of distress priority communications in the shore-to-ship direction (COMSAR 15/5) and revised and approved COMSAR.1/Circ.50/Rev.1 on Distress priority Communications for RCC from shore-to-ship via Inmarsat.

5.3 The Sub-Committee considered document COMSAR 16/5 (IMSO) providing additional and updated information in relation to arrangements for the use of distress priority communications in the shore-to-ship direction via Inmarsat and decided to:

.1 refer this document to the SAR Working Group to review COMSAR.1/Circ.50/Rev.3 in the light of the additional information provided; and

.2 invite Contracting Governments, SAR authorities and RCCs to liaise with Inmarsat Customer Services to obtain their dedicated 7-digit PIN code and instructions for making shore-to-ship distress priority voice calls.

Analysis and assessment of the performance by Inmarsat Global Limited of the Company's obligations for the provision of maritime services within the GMDSS

5.4 The Sub-Committee considered document COMSAR 16/5/1 (IMSO) providing analysis and assessment of the performance by Inmarsat Global Limited of the Company's obligations for the provision of maritime services within the GMDSS, as overseen by IMSO. The information covered the period from 1 November 2010 to 31 October 2011.

5.5 The IMSO observer provided further information relating the Inmarsat satellite service outage on 22 October 2011, derived from the subsequent inquest into that event, and undertook to provide further relevant information to the Sub-Committee at its next session.

5.6 In light of the foregoing, the Sub-Committee agreed to modify IMSO's assessment of Inmarsat's performance as follows: "It is assessed that, during this period, with the exception of the service outage in the Pacific Ocean Region (POR) on 22 October 2011, Inmarsat has continued to provide a sufficient quality of service to meet its obligations under the GMDSS". The Sub-Committee further noted with appreciation that Inmarsat had provided satisfactory services in the other three Ocean Regions.

5.7 The IMSO observer also informed that one of the Inmarsat satellites had suffered a problem recently. The satellite concerned was of the second generation I-2 F-4 satellites, which was more than 20 years old and was programmed to be taken out of service towards the end of 2012. On Tuesday 13 March, it suffered a total failure of one of its two main batteries and the decision was taken to decommission it immediately. The IMSO observer assured the Sub-Committee that this satellite was not used to provide primary or backup GMDSS services and its loss had no effect on the provision of maritime distress and safety services.

COSPAS-SARSAT SERVICES

5.8 The Sub-Committee considered document COMSAR 16/5/2 (Cospas-Sarsat) providing a status report on the Cospas-Sarsat system, including System operations, space and ground segments, beacons, false alerts and results of MCC-SPOC communication tests.

5.9 In the ensuing discussion, the views were expressed: on the one hand that the issue of non-responsive SPOCs might be an issue to be included in the Voluntary IMO Member States Audit Scheme (VIMSAS); and on the other hand that it might not be appropriate to include it in VIMSAS.

5.10 After a brief discussion, the Sub-Committee decided to refer the matter of possible actions to be taken in the case of non-responsive SPOCs to the SAR Working Group for detailed consideration and advice.

ESTABLISHMENT OF THE SAR WORKING GROUP

5.11 The Sub-Committee established the SAR Working Group under the Chairmanship of Mr. N. Clifford (New Zealand) and instructed it to take into account decisions of, and comments and proposals made in Plenary, and consider:

.1 document COMSAR 16/5 on arrangements for the use of distress priority communications in the shore-to-ship direction via Inmarsat and review COMSAR/Circ.50/Rev.3, and advise whether there was a need to revise it; and

.2 document COMSAR 16/5/2, paragraphs 17 to 19 and provide advice regarding the matter of non-responsive SPOCs, taking into account the information concerning the report on SPOC communication tests (paragraph 7.2.1.7 of the annex to document COMSAR 16/6),

and submit its report on Wednesday, 14 March 2012.

Report of the SAR Working Group

5.12 On receipt of the report of the SAR Working Group (COMSAR 16/WP.3), the Sub-Committee took action as summarized in the ensuing paragraphs.

5.13 The Sub-Committee agreed that there was no need to revise COMSAR/Circ.50/Rev.3 on distress priority communications for RCCs from shore-to-ship via Inmarsat.

5.14 Noting the low response rate from search and rescue point of contacts (SPOCs) to Cospas-Sarsat test calls, the Sub Committee invited the Committee to remind Member States, with a low response rate, of the importance of a reliable test call response of their SPOC.

5.15 The Sub-Committee requested the Committee to inform the Technical Co-operation Committee on the perceived need for some countries identified in document COMSAR 16/5/2, paragraph 17, for capacity-building and technical assistance to help ensure timely response of their SPOCs upon receiving distress alerts.

6 SEARCH AND RESCUE (SAR)

DEVELOPMENT OF GUIDELINES ON HARMONIZED AERONAUTICAL AND MARITIME SEARCH AND RESCUE PROCEDURES, INCLUDING SAR TRAINING MATTERS

6.1 The Sub-Committee noted that, as requested by COMSAR 15, MSC 89 had extended the target completion year for the planned output on the "Harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters" to 2012.

Eighteenth Meeting of the ICAO/IMO Joint Working Group on the Harmonization of Aeronautical and Maritime SAR

6.2 The Sub-Committee noted that, as agreed by COMSAR 15 and endorsed by MSC 89, the eighteenth session of the ICAO/IMO Joint Working Group on the Harmonization of Aeronautical and Maritime Search and Rescue was held in Stavanger, Norway, from 3 to 7 October 2011.

6.3 The Sub-Committee briefly considered document COMSAR 16/6 (Secretariat) containing the report of the JWG and decided to refer this document to the SAR Working Group for detailed consideration of the issues reported on in general and, in particular, paragraph 2 containing the list of actions requested**.**

6.4 After briefly discussing matters related to the composition of the JWG and the meeting venues, the Sub-Committee decided on the continuation of the ICAO/IMO Joint Working Group (JWG) for the next session planned to be held in Hong Kong, China from 10 to 14 September 2012 and the associated Terms of Reference and provisional agenda, as set out in document COMSAR 16/WP.3, annex 4 and invited the Committee to authorize the convening of this intersessional meeting.

Smartphone SAR e-mail application

6.5 The Sub-Committee considered document COMSAR 16/6/2 (United States) providing information that a SAR application was being sold that used e-mail to notify SAR authorities of a distress situation. It was also noted that the United States Coast Guard had safety concerns about this application and had asked for its removal from sale in the United States.

6.6 After some discussion, the Sub-Committee concurred with the concerns expressed by the United States and decided to instruct the SAR Working Group to prepare a draft COMSAR circular with the aim to inform Member Governments on the issue and recommend actions to be taken.

Satellite-enabled Emergency Location Device

6.7 The Sub-Committee considered document COMSAR 16/6/3 (United States) informing the Sub-Committee of the increasing use of satellite emergency notification devices (SENDs) that operated over satellite systems other than Cospas-Sarsat and referred it to the SAR Working Group for detailed consideration and advice.

Proposal to include number of persons on board as an AIS message

6.8 The Sub-Committee considered document COMSAR 16/6/4 (Argentina) proposing an evaluation of the technical and operational feasibility of including "number of persons on

board" (NPB) as a mandatory field in the AIS message data structure for class A and class B equipment and referred it to the SAR Working Group for detailed consideration of the operational desirability and feasibility of this proposal.

SAR/Galileo Return Link Service Definition

6.9 The Sub-Committee considered document COMSAR 16/6/5 (European Commission), commenting on the report of the JWG (COMSAR 16/6) and providing additional information on the SAR/Galileo Return Link Service and referred it to the SAR Working Group for detailed consideration and advice.

Report of the World Maritime Rescue Congress 2011

6.10 The Sub-Committee noted with appreciation the information provided in document COMSAR 16/INF.5 (IMRF) containing a brief report on the World Maritime Rescue Congress held in Shanghai, China, during August 2011.

FURTHER DEVELOPMENT OF THE GLOBAL SAR PLAN FOR THE PROVISION OF MARITIME SAR SERVICES, INCLUDING PROCEDURES FOR ROUTEING DISTRESS INFORMATION IN THE GMDSS

Global SAR Plan

6.11 The Sub-Committee considered document COMSAR 16/6/1 (Secretariat) and:

.1 noted the information provided advising that, as instructed by COMSAR 15 and based on information provided by Member Governments, the Secretariat had issued SAR.8/Circ.3 (Global SAR Plan);

.2 noted that the information on the availability of SAR services had been integrated in the Global Integrated Shipping Information System (GISIS), to support the Long-Range Identification and Tracking (LRIT) system and that this information had been allocated in a module called "Radiocommunications and Search and Rescue (COMSAR)", which contained the same information as available in SAR.8/Circ.3; and

.3 in line with the proposal by the Secretariat that it would be appropriate, agreed to change the current system of communicating information on SAR services to the Organization as from 1 May 2012, to allow access to Member Governments to enter and update information on SAR services directly into GISIS; and interested parties, including the general public, direct access to updated information on SAR services (on "read-alone" basis).

6.12 To this end, the Sub-Committee instructed the SAR Working Group to finalize a draft COMSAR circular (COMSAR 16/6/1, annex) to clarify the procedure of entering and updating information on SAR services into GISIS and on how to get access to the information for operational use.

Establishment of two Regional MRCCs and five Associated MRCCs in Central America

6.13 The Sub-Committee noted that MSC 89 had approved the development of a technical co-operation project aimed at the establishment of two Regional MRCCs and five Associated MRCCs in Central America for search and rescue coordination purposes and requested the Secretariat to take action accordingly.

6.14 The Sub-Committee further noted that the Secretariat had organized two meetings at IMO Headquarters with representatives from the seven Central American countries (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) and that IMO assessment missions had been undertaken by SAR specialists from Chile in December 2011.

6.15 The Sub-Committee also noted that a SAR regional meeting on the development of a multilateral agreement for the Central American region was organized in Panama City, Panama, on 8 and 9 February 2012 and that the Committee was informed of the progress made in regard to the development of this technical co-operation project (MSC 90/8/1).

Establishment of Regional MRCCs and Associated MRCCs in Africa

6.16 The delegation of Côte d'Ivoire expressed their appreciation to the Organization and Member Governments in supporting to re-equip the Abidjan MRCC after the equipment had been destroyed. They expressed further the need for support in relation to training of the personnel of the MRCC, as well as in relation to other safety-related matters.

6.17 The delegation of Norway informed the Sub-Committee of their experience of cooperation with Regional MRCC in Rabat, Morocco, which justified the establishment of Regional MRCCs and Associated MRCCs in Africa.

Report of the 8th Black Sea Regional Conference on Maritime Search and Rescue (SAR) and the Global Maritime Distress and Safety System GMDSS

6.18 The Sub-Committee noted with appreciation the information contained in document COMSAR 16/INF.6 (Romania), briefly summarizing the outcome of the 8th Black Sea Conference on Maritime Search and Rescue and the Global Maritime Distress and Safety System which was held in Constanta, Romania, from 31 October to 1 November 2011.

List of IMO documents and publications which should be held by an MRCC

6.19 The delegation of France requested that at the next revision of SAR.7/Circ.10 (List of IMO documents and publications which should be held by an MRCC), the reference to the Admiralty List of Radio Signals Vol.5 (ALRS), should be generalized by referring to Lists of Radio Signals published by hydrographic services.

Instructions for the SAR Working Group

6.20 The Sub-Committee instructed the SAR Working Group, taking into account decisions of, and comments and proposals made in Plenary, to:

.1 consider document COMSAR 16/6 containing the report of the eighteenth session of ICAO/IMO Joint Working Group and advise the Sub-Committee, as appropriate, on the actions requested in paragraph 2 and, in particular, finalize the draft revision of MSC.1/Circ.1185 on the Guide for cold water survival;

.2 consider document COMSAR 16/6/1 containing Information on the availability of SAR services worldwide (Global SAR Plan) and finalize the draft COMSAR circular on Guidance for entering and updating information on Search and Rescue into GISIS and on how to get access to the information for operational use;

.3 in relation to the information provided in document COMSAR 16/6/2 on the "Search and Rescue by SAR" application ("SAR APP"), prepare a draft COMSAR circular with the aim to inform Member Governments on the issue and recommend actions to be taken;

.4 consider document COMSAR 16/6/3 on satellite emergency notification devices (SENDs) and advise the Sub-Committee, as appropriate;

.5 consider document COMSAR 16/6/4 to evaluate the technical and operational feasibility of including "number of persons on board" (NPB) as a field in the AIS message data structure for class A and class B equipment and advise the Sub-Committee regarding the operational desirability and feasibility of this proposal;

.6 consider document COMSAR 16/6/5 on SAR/Galileo Return Link Service Definition and advise the Sub-Committee, taking into account information contained in paragraph 7.1 of the annex to document COMSAR 16/6; and

.7 provide proper justification, if there is a need for extension of the target completion year of the agenda item "Development of guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters" to 2013,

and submit its report on Wednesday, 14 March 2012.

Report of the SAR Working Group

6.21 On receipt of the report of the SAR Working Group (COMSAR 16/WP.3, section 4), the Sub-Committee took action as summarized in the ensuing paragraphs.

6.22 The Sub-Committee endorsed:

.1 the draft revised MSC circular on Guide for cold water survival as set out in annex 8 and invited the Committee to approve it;

.2 the draft COMSAR circular on Guidance for entering and updating information on Search and Rescue into GISIS and on how to access information for operational use as set out in annex 9 and invited the Committee to approve it;

.3 the draft COMSAR circular on Guidance on Smartphone and Other Computer Device SAR Applications, as set out in annex 10 and invited the Committee to approve it;

.4 the acceptability of the Return Link Message (RLM) Type-1 including the optional inclusion of this particular functionality within distress beacons; and

.5 the further consideration of the complex matter of RLM Type-2 messages by the ICAO/IMO Joint Working Group.

6.23 In discussing document COMSAR 16/6/3, several delegations had expressed concern in the Working Group over the different approaches used by individual SEND service providers to alert SAR authorities. The Sub-Committee recognized the merits of combining the capabilities of a SEND unit with the 406 MHz distress beacon capability noting

that manufacturers of any such combined device would have to apply the standards established by Cospas-Sarsat.

6.24 The Cospas-Sarsat observer informed that document COMSAR 16/WP.3, paragraph 4.20 should read as follows: "The observer of Cospas-Sarsat noted the importance of the issues raised in document COMSAR 16/6/3 and advised the group that the matter also would be monitored within the appropriate Cospas-Sarsat bodies". He further advised, in relation document COMSAR 16/WP.3, paragraph 4.24, that the Joint Committee would meet in June 2012 and the Cospas-Sarsat Council in October 2012.

6.25 The Sub-Committee noted the pros and cons of the operational desirability and feasibility of including a mandatory application of an AIS message standard field for "number of persons on board" and agreed that SAR services would greatly benefit from such information if it correctly reflected the number of persons on board at any given time. However, no consensus could be reached on the mandatory application for class A and class B equipment.

6.26 The Sub-Committee considered the matter of manual activation of EPIRBs at the early stage of an emergency and agreed to invite Member Governments and interested organizations to submit proposals clarifying the issue for seafarers to the next session of the Sub-Committee.

6.27 The Sub-Committee invited the Committee to extend the target completion year for the agenda item "Development of guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters" to 2013.

7 DEVELOPMENTS IN MARITIME RADIOCOMMUNICATION SYSTEMS AND TECHNOLOGY

7.1 The Sub-Committee recalled that COMSAR 7 had agreed that no submissions concerning performance standards for any radiocommunication equipment should be accepted and/or considered under this agenda item (COMSAR 7/23, paragraphs 11.5 and 11.6).

7.2 The Sub-Committee further recalled that, based on the request of COMSAR 15, the Committee had extended the target completion year for this item to 2012.

Automatic Transmission of the Identification of the Radiotelephone Station

7.3 The Sub-Committee considered document COMSAR 16/7 (Poland) proposing the inclusion of an automatic transmission of radiotelephone station identification during operation of radio equipment in the VHF and MF/HF frequency bands and referred it to the Technical Working Group for detailed consideration and to advise the Sub-Committee, as appropriate.

Working toward use of AIS as a means for distress communications

7.4 The Sub-Committee considered:

.1 document COMSAR 16/7/1 (United States) relating to advantages for the possible future use of AIS for distress communications and possible problems which would need to be overcome before such a capability could be implemented; and

.2 document COMSAR 16/7/3 (Australia) commenting on document COMSAR 16/7/1, in particular AIS-SART, Satellite detection (for distress alerts via AIS) and the continuous need for DSC.

7.5 In considering the possible future use of AIS for distress communications, the following views were expressed that:

.1 to address issues identified in document COMSAR 16/7/1, the matter would need to be considered, not only by the Organization, but also in ITU-R and IALA;

.2 to initiate work in ITU-R and IALA, it would be beneficial to send a liaison statement to these organizations, informing them of the desire of some IMO Member Governments to study the possible future use of AIS for distress communications;

.3 the initial focus should be on existing equipment, currently in use on SOLAS ships; and

.4 the consideration of this issue would need an appropriate new unplanned output, approved by the Committee.

7.6 The Sub-Committee was informed by the Secretariat that:

.1 MSC 86 had considered the matter of satellite detection of AIS and was awaiting the outcome of studies in ITU;

.2 there was a need to inform the Committee on the progress made in ITU on the matter of satellite detection of AIS since MSC 86, on the basis of which the Committee could reconsider this matter;

.3 the request for a new unplanned output for the consideration of the possible future use of AIS for distress communications should be submitted to the Committee by a Member Government; and

.4 until the Committee had agreed on a new unplanned output on the possible future use of AIS for distress communications, it would not be appropriate for the Sub-Committee to consider these issues or send liaison statements to other organizations.

7.7 The delegation of France, supported by others, informed the Sub-Committee that the work in ITU-R in relation to satellite detection of AIS had been finalized. As a result of the studies on this matter in ITU-R, Report ITU-R M.2084 on Satellite detection of automatic identification system messages had been published and a revision of Recommendation ITU-R M.1371 had been adopted in order to introduce the new message 27 to permit the reception of AIS emissions of long-range AIS broadcast messages. Based on these studies and proposals received, WRC-12 had identified VHF channels 75 and 76 of appendix 18 of the Radio Regulations for the satellite detection of AIS messages (COMSAR 16/4/5, paragraph 13). The Sub-Committee noted that the IMO position for WRC-12 had supported this allocation to the mobile satellite service (Earth-to-space) relating to the frequencies of channels 75 and 76 of appendix 18 (COMSAR 15/16, annex 4, page 6).

7.8 Following some discussion, the Sub-Committee invited interested Member Governments to submit proposals to the Committee for a new unplanned output to consider the possible future use of AIS for distress communications.

Developments in Man Overboard (MOB) and similar devices using AIS-SART technology

7.9 In considering the issue of developments in Man Overboard (MOB) and similar devices using AIS-SART technology (COMSAR 16/7/3, paragraphs 12 to 20), the Sub-Committee concurred with the view that there was a need to consider the use of the AIS symbol for these kind of devices and to develop guidance to inform seafarers that there were devices which operated in a similar way to an AIS-SART, had the same symbol displayed, but were used for different purposes.

7.10 In considering that the use of the AIS symbol, the Sub-Committee recalled that this was a matter under the purview of the NAV Sub-Committee and instructed the Technical Working Group to develop a suitable request to be forwarded to the NAV Sub-Committee inviting them to consider the use of the AIS symbol for these kinds of devices and to develop appropriate guidance to seafarers for further consideration and finalization by COMSAR 17.

7.11 The Sub-Committee further instructed the SAR Working Group to consider the issue from an operational perspective and advice, as appropriate.

7.12 Accordingly, the Sub-Committee referred document COMSAR 16/7/3 to the Technical and SAR Working Groups and instructed the groups, as set out above in paragraphs 7.10 and 7.11.

Promoting study on AIS Personal Locator Beacons

7.13 The Sub-Committee considered document COMSAR 16/7/2 (China) proposing to promote a study on AIS Personal Locator Beacons based on AIS-SART technology, to be used on lifejackets, in order to facilitate effective search and rescue of survivors in water.

7.14 The ICS observer, supported by others, expressed the view that any study should be conducted by either Member Governments or international organizations and the results submitted to the relevant IMO body for consideration. Furthermore, the cost implications of any requirement for all lifejackets would be significant and no justification or compelling need had been identified. The proposed study should also consider the potential disadvantages e.g. accidental activation, mass activation of the devices in congested waters and testing and maintenance requirements. Accordingly, more information was required before this could be discussed further.

7.15 After a brief discussion, the Sub-Committee agreed that there would be a need for a proposal to the Committee for a new unplanned output if future consideration of this matter was preferred. The delegation of China informed the Sub-Committee that they would consider submitting a proposal to the Committee.

7.16 The CIRM observer suggested that, since the term "PLB" was linked to Cospas-Sarsat beacons, it might be more appropriate to use the term AIS Man Overboard devices.

Instructions for the Technical Working Group

7.17 The Sub-Committee instructed the Technical Working Group, taking into account decisions of, and comments and proposals made in Plenary to:

.1 consider and provide advice, as appropriate, on the proposal for the inclusion of the automatic transmission of radiotelephone station identification during operation of radio equipment in the VHF and MF/HF frequency bands (COMSAR 16/7); and

.2 develop a suitable request to be forwarded to the NAV Sub-Committee inviting them:

.1 to consider the use of the AIS symbol for Man Overboard (MOB) and similar devices using AIS-SART technology; and

.2 to develop draft guidance to seafarers, to be further considered and finalized by COMSAR 17,

and submit its report on Thursday, 15 March 2012.

Report of the Technical Working Group

7.18 On receipt of the report of the Technical Working Group (COMSAR 16/WP.4, section 5), the Sub-Committee took action as summarized in the ensuing paragraphs.

7.19 The Sub-Committee noted the opinion that the proposal on automatic transmission of radiotelephone station identification should be considered by the Correspondence Group on the Review of the GMDSS, except for the technical solutions mentioned in the document.

7.20 The Sub-Committee agreed to forward to the NAV Sub-Committee the concerns regarding the difficulties arising in interpreting the AIS-SART symbol, along with the established text message SART ACTIVE, when used for Man Overboard (MOB) and similar devices using AIS-SART technology, and to request it to develop draft guidance to seafarers, to be further considered and finalized by COMSAR 17 (COMSAR 16/WP.4, paragraphs 5.4 and 5.5), subject to concurrence by the Committee.

7.21 The Sub-Committee noted the view of the Working Group that there was inconsistency between AIS-SART and radar-SART in SOLAS chapter IV, regulation 7.1.3, and annex IV of COLREG (COMSAR 16/WP.5, paragraph 5.6).

Instructions for the SAR Working Group

7.22 The Sub-Committee instructed the SAR Working Group, taking into account decisions of, and comments and proposals made in Plenary to consider document COMSAR 16/7/3, paragraphs 12 to 20, on Man Overboard (MOB) and similar devices using AIS-SART technology from an operational perspective and advice, as appropriate and submit its report on Wednesday, 14 March 2012.

Report of the SAR Working Group

7.23 On receipt of the report of the SAR Working Group (COMSAR 16/WP.3, section 5), the Sub-Committee took action as summarized in the ensuing paragraphs.

7.24 The Sub-Committee noted the deliberations of the Working Group and the SAR operational concerns on Man Overboard (MOB) and similar devices using AIS-SART technology (COMSAR 16/WP.3, paragraph 5.2).

7.25 Recognizing that it remained very important for the Sub-Committee to consider developments in maritime radiocommunication systems and technology and that further proposals might be submitted, it was decided to invite the Committee to extend the target completion year for this item to 2013, when discussing its biennial agenda under agenda item 14.

8 DEVELOPMENT OF AMENDMENTS TO THE IAMSAR MANUAL

8.1 The Sub-Committee recalled that the:

.1 ICAO/IMO Joint Working Group (JWG), at its 2010 meeting, had completed the review on IAMSAR Manual Volume I, which had been prepared by its Editorial Group; and

.2 main focus of the last meeting of the JWG was on discussions on IAMSAR Manual Volumes II and III, with the aim to finalize the fundamental review of the IAMSAR Manual, as endorsed by MSC 85.

8.2 The Sub-Committee considered the relevant outcome of the JWG (COMSAR 16/6) and, in particular, the proposed amendments to the 2010 edition of Volumes II and III of the IAMSAR Manual, set out in appendices D and E of the document and referred them to the SAR Working Group, for detailed consideration and the preparation of an associated draft MSC circular.

Social media and distress notification

8.3 The Sub-Committee considered document COMSAR 16/8 (United States) wherein the general public had an expectation that SAR authorities monitor their well-being during an emergency. They had identified the need for the development of guidance for SAR authorities in case social media was being used for distress alerting.

8.4 After some discussion, the Sub-Committee decided to invite the JWG, at its next session, to develop relevant text with the aim to include guidance and information on the use of social media for SAR alerting and the expectation that it would not be monitored as a primary means of distress notification, into the 2016 edition of the IAMSAR Manual.

Terms of reference for the SAR Working Group

8.5 The Sub-Committee instructed the SAR Working Group, taking into account decisions of, and comments and proposals made in Plenary, to consider the draft proposed amendments to the IAMSAR Manual, as given in document COMSAR 16/6, appendices D and E, and prepare an associated draft MSC circular for approval by MSC 90 and consequential inclusion in the new edition of the IAMSAR Manual, to be published in 2013.

Report of the SAR Working Group

8.6 On receipt of the report of the SAR Working Group (COMSAR 16/WP.3, section 6 and annex 5), the Sub-Committee took action as summarized in the ensuing paragraphs.

8.7 The Sub-Committee endorsed the draft MSC circular on amendments to the IAMSAR Manual, as set out in annex 11, and requested the Committee to approve it, taking into account ICAO's concurrence with the inclusion of the proposed amendments to the Manual, for inclusion in the 2013 edition.

8.8 The Sub-Committee instructed the JWG to provide, in their next submissions to the Sub-Committee, the full amended text with track-changes to the IAMSAR Manual.

9 DEVELOPMENT OF MEASURES TO AVOID FALSE DISTRESS ALERTS

9.1 The Sub-Committee recalled that MSC 87 had agreed to include an output on the "Development of measures to avoid false distress alerts", with two sessions needed to complete the work, in the agenda of the Sub-Committee, in cooperation with the NAV Sub-Committee.

9.2 The Sub-Committee considered document COMSAR 16/9 (IEC) summarizing the work that had been done by the Organization and the international standards bodies relating to a standard distress alert button. According to IEC, this button was now well on the way to being universally implemented on ships. The remaining false alerts were caused by random events which would be difficult to reduce and did not cause a major problem to rescue authorities. Accordingly, little would be achieved in attempting to change the existing measures due to the resulting long implementation period.

9.3 The Sub-Committee considered documents COMSAR 16/9/1, COMSAR 16/9/2 and COMSAR 16/9/3 (Republic of Korea), proposing that:

.1 the specification and location of distress alarm buttons needed to be standardized, not from the perspective of a radiocommunication installation, but from users' viewpoint, taking into account factors such as the human factors and the navigation bridge designs;

.2 a standardized system of audio and visual indications of distress alarms needed to be created, aimed at indicating the alarm's transmission status with a view to preventing user confusion; and

.3 an appropriate size for a distress button was needed to prevent malfunctions inadvertently caused by the users.

9.4 During the ensuing discussions, the following views were expressed that:

.1 the proposals had implications on work of other Sub-Committees, as well as the ongoing work on the development of an e-navigation strategy implementation plan and the review of the GMDSS;

.2 the proposals were too prescriptive and should be more goal-based;

.3 taking into account information contained in document COMSAR 16/9, there was no compelling need to take the proposed actions as suggested in documents COMSAR 16/9/1, COMSAR 16/9/2 and COMSAR 16/9/3;

.4 there were concerns about false distress alerts and possible remedial measures had to be considered to reduce them;

.5 training was an important element to reduce false distress alerts; and

.6 any future requirements should only be applicable to new ships.

9.5 After a brief discussion, the Sub-Committee decided to refer documents COMSAR 16/9, COMSAR 16/9/1, COMSAR 16/9/2 and COMSAR 16/9/3 to the Technical Working Group, for detailed consideration and advice.

Instructions for the Technical Working Group

9.6 The Sub-Committee instructed the Technical Working Group, taking into account decisions of, and comments and proposals made in Plenary and the contents of document COMSAR 16/9, and provide comments and advice on:

.1 standardization of the specification and location of distress alarm buttons (COMSAR 16/9/1);

.2 a standardized system of audio and visual indications of distress alarms (COMSAR 16/9/2); and

.3 on whether an appropriate size for a distress button was needed to prevent malfunctions inadvertently (COMSAR 16/9/3),

and submit its report on Thursday, 15 March 2012.

Report of the Technical Working Group

9.7 On receipt of the report of the Technical Working Group (COMSAR 16/WP.4, section 6), the Sub-Committee took action as summarized in the ensuing paragraphs.

9.8 Noting that the Sub-Committee would have this agenda item for one more year, several delegations were of the opinion that the issues raised by IEC and the Republic of Korea should be further considered under the agenda items of development of an e-navigation strategy implementation plan and Review of the GMDSS.

10 DEVELOPMENT OF MEASURES TO PROTECT THE SAFETY OF PERSONS RESCUED AT SEA

10.1 The Sub-Committee noted the outcome of deliberations on this matter at MSC 89 (MSC 89/25, paragraphs 13.12 to 13.19) and FAL 37 (FAL 37/17, paragraphs 6.24 to 6.34).

10.2 The Sub-Committee further noted that the Secretariat had attended an Expert meeting organized by UNHCR in Djibouti (8 to 10 November 2011) on the development of a Model Framework for cooperation following rescue at sea operations involving refugees and asylum seekers. This Model Framework was to be seen as complementary to the development of a draft Regional MoU being undertaken by IMO.

10.3 The Sub-Committee also noted information provided by the Secretariat on the progress of the Group of interested parties (Group) working on the development of a draft regional arrangement and, in particular, that:

.1 the first regional meeting was kindly hosted by Italy on 12 October 2011, back to back with the World Maritime Day parallel event in Rome, and it was attended by countries of the Mediterranean region (Algeria, Cyprus,

France, Greece, Italy, Lebanon, Malta, Morocco, Spain, Turkey) and the United Kingdom and the Secretariat. The draft terms of reference were approved in principle and the draft Regional MoU was partly revised during that meeting;

.2 in order to make significant progress towards finalizing the draft Regional MoU, it was considered beneficial to hold informal consultations among interested parties to agree on some of the more contentious issues and associated draft texts before organizing the next regional formal meeting. Accordingly, informal consultations of interested parties were held at IMO Headquarters on 21 February 2012. Some of the most contentious aspects were discussed and agreements reached on sensitive subjects and the draft text of the Regional MoU was improved accordingly;

.3 the Second formal Regional Meeting was planned to be held on 18 April 2012 at IMO Headquarters, with a view to reviewing the draft of the instrument on procedures relating to the disembarkation of persons rescued at sea.

10.4 After some discussion, the Sub-Committee, taking into account that the work on this matter was still in progress, decided to invite the Committee to extend the target completion year for this planned output to 2013, when discussing its biennial agenda under agenda item 14.

11 DEVELOPMENT OF AN E-NAVIGATION STRATEGY IMPLEMENTATION PLAN

11.1 The Sub-Committee noted that NAV 57 had:

.1 re-established the Correspondence Group on e-navigation under the coordination of Norway with the terms of reference, as set out in paragraph 6.42 of the report of NAV 57; and

.2 invited MSC 90 to:

.1 approve a revised joint plan of work for the COMSAR, NAV and STW Sub-Committees for the period 2012-2014 and extend the target completion year for the planned output "Development of an e-navigation strategy implementation plan" to 2014;

.2 approve the overarching e-navigation architecture, a proposed way forward for developing a Common Maritime Data Structure (CMDS) and the use of the IHO's S-100 standard as the baseline for creating a framework for data access and services under the scope of SOLAS; and

.3 authorize, in consultation with other organizations, the establishment of an IMO/IHO Harmonization Group on Data modelling.

11.2 The Sub-Committee also noted that the ITU's World Radiocommunication Conference 2012 (23 January to 17 February 2012) had agreed:

.1 on the harmonization of the maritime mobile service in the frequency band 415-526.5 kHz, resulting in an exclusive worldwide allocation for the maritime mobile service in the frequency band 495-505 kHz and a co-primary allocation in the frequency band 510-525 kHz; and

.2 to place GMDSS modernization and the implementation of e-navigation on the preliminary agenda for WRC-18.

11.3 The Sub-Committee considered document COMSAR 16/11 (Norway) containing the report of the Correspondence Group on e-navigation, which included, in particular, the gap analysis, a proposed procedure for identifying Risk Control Options (RCO), issues concerning an overarching approach for the preparation of performance standards, AIS (next generation), VHF data communications, digital broadcasting of Maritime Safety Information (MSI) in the 500 kHz band (495-505 kHz), carrying out e-navigation communications in practice, including development of guidelines, and harmonization of test beds.

11.4 The delegation of Panama, commenting on document COMSAR 16/11, expressed the opinion that the Correspondence Group had gone beyond its term of reference and considered issues that were not within its mandate by including, for example, the discussions on satellite AIS. This was an issue which should be considered by the NAV Sub-Committee.

11.5 In view of the above, the Chairman invited the Sub-Committee to consider the report of the Correspondence Group bearing in mind its terms of reference and, in particular, from the radiocommunications and search and rescue perspective.

Gap analysis

11.6 The Sub-Committee noted the concerns expressed by Liberia et al. (COMSAR 16/11/2) with regard to the inclusion of prescriptive training requirements in the gap analysis that did not reflect "user friendly" and "innovative" approaches that were widely accepted as being integral to the e-navigation process and that due consideration should be given to the human element during the discussion of all issues relating to e-navigation.

11.7 The delegations of the Bahamas and Panama, supporting the concerns stated in document COMSAR 16/11/2, expressed the opinion that the design of equipment should be such that there would be no need for training. In this regard, appropriate attention to the human-machine-interface would minimize the need for training. Furthermore, the STW Sub-Committee was the right forum to discuss training matters.

11.8 Bearing in mind that the gap analysis was expected to be finalized at NAV 58, the Sub-Committee decided to give priority to its completion and instructed the Working Group on e-navigation and LRIT to review the list of gaps and prepare a final list of gaps relevant to radiocommunications and search and rescue, including comments and observations, as appropriate.

Proposed procedure for identifying Risk Control Options (RCOs)

11.9 The Sub-Committee noted the proposed procedure for identifying Risk Control Options (RCOs), including examples of e-navigation solutions, as outlined in annex 2 to document COMSAR 16/11.

Overarching approach for the preparation of performance standards

11.10 The Sub-Committee noted the views of the Correspondence Group on an overarching approach for the preparation of performance standards and agreed that the human-machine-interface should be considered in-depth when developing or revising the performance standards.

Essential elements of communication for e-navigation

11.11 The Sub-Committee noted that, in paragraph 25 of the report of the Correspondence Group (COMSAR 16/11), the following communication services were identified as representing some of the main elements of the e-navigation concept:

.1 AIS (Next generation), including satellite AIS (S-AIS);

.2 VHF Data Communications; and

.3 Digital broadcasting of Maritime Safety Information (MSI) in the 500 kHz band (495-505 kHz).

11.12 The Sub-Committee further noted that Norway, commenting on paragraph 25 of the report (COMSAR 16/11), had proposed to replace HF telex (NBDPT) with HF-mail and HF Data and upgrade the HF shore-based infrastructure accordingly, with a view to improving the promulgation of safety information (MSI) to the Arctic.

11.13 After a brief discussion, the Sub-Committee decided that, taking into account that the Gap analysis has not been finalized, it was too premature to provide a well-considered view on this matter.

AIS (next generation)

11.14 The Sub-Committee considered the comments provided by the Correspondence Group on the next generation AIS (including satellite AIS) and its potential use for e-navigation.

11.15 The Sub-Committee recalled that, with regard to satellite detection of AIS, MSC 86 had noted considerable concerns relating to the development, implementation and operation of the system and decided that IMO should not make any commitment at this stage, prior to the outcome of studies at ITU.

11.16 Liberia et al. (COMSAR 16/11/2) were of the opinion that it was too premature to consider a possible new generation of AIS before demonstrating a compelling need through appropriate IMO instruments. This was supported by the delegations of the Marshall Islands and Panama, and the ICS observer.

11.17 The IALA observer expressed the view that there was a need to discuss the future development of AIS, otherwise the idea would not be developed at all.

11.18 In this context, the Secretariat reiterated that MSC 86 (MSC 86/26, paragraphs 25.8 and 25.9), whilst considering the issue of satellite detection of AIS, had noted and recognized that:

.1 considerable concerns had been raised in the Committee concerning the development, implementation and operation of the system;

.2 there was general support for the continuation of studies under the framework of ITU; and

.3 IMO should not make any commitment at this stage, awaiting the outcome of studies at ITU.

11.19 After some discussions, the Sub-Committee, taking into account the decisions of MSC 86, agreed that there was no need to consider this issue at this stage (paragraph 7.7 refers).

VHF data communications and digital broadcasting of Maritime Safety Information (MSI)

11.20 The Sub-Committee noted the need for further developments on VHF Data Communications and Digital broadcasting of MSI under the umbrella of e-navigation and recalled that a document on this issue by Belgium et al. (COMSAR 16/4/3) had been submitted under agenda item 4, presenting the main performances of a digital system for broadcasting maritime safety- and security-related information in the 500 kHz band (paragraphs 4.3 to 4.6 refer).

Carrying out e-navigation communications in practice

11.21 The Sub-Committee noted, in general, the views of the Correspondence Group on how to facilitate reporting communications in practice.

Test beds as an input to the e-navigation process

11.22 The Sub-Committee took note of the current initiatives for test beds and, in particular, that the Marine Electronic Highway (MEH) project in the Straits of Malacca and Singapore was a demonstration project that aimed to link shore-based marine information and communication infrastructure with the corresponding navigational and communication facilities aboard transiting ships, while being also capable of incorporating marine environmental management systems. Noting the synergy between e-navigation and the MEH project, and the global significance of the Malacca and Singapore Straits, a test bed of S-100 data transfer model in the MEH area was planned to be conducted in April 2012.

11.23 The ICS observer, supported by France, expressed the view that the development of guidelines was important to harmonize and standardize different initiatives for test beds.

11.24 In this context, the Secretariat advised the Sub-Committee that the outcome of the trial test bed of S-100 data transfer in the MEH area would be reported orally to MSC 90 and, in addition, detailed information would also be submitted to NAV 58 for further consideration.

Information provided by Governments

11.25 The Sub-Committee noted the information provided in documents COMSAR 16/INF.2 (Denmark et al.) on the EfficienSea Project in the Baltic Sea region and COMSAR 16/INF.8 (China) related to the development of the BeiDou Navigation Satellite System in China.

ESTABLISHING THE WORKING GROUP ON E-NAVIGATION AND LRIT

11.26 The Sub-Committee established the Working Group on e-navigation and LRIT under the Chairmanship of Dr. S. Ryan (Canada) and instructed it, taking into account decisions of, and comments on proposals made in Plenary, to review the list of gaps identified by the

Correspondence Group, set out in annex 1 to document COMSAR 16/11, and prepare a final draft list of gaps relevant to radiocommunications and search and rescue, based on user needs, as approved by NAV 56 (NAV 56/WP.5/Rev.1, annexes 2 to 5) and submit its report on Thursday, 15 March 2012.

Report of the Working Group

11.27 On receipt of the report of the Working Group on e-navigation and LRIT (COMSAR 16/WP.5), the Sub-Committee approved the report in general and took action as summarized in the ensuing paragraphs.

11.28 The delegation of the Netherlands, supported by France, Germany, Norway, the United Kingdom and IALA, not questioning the time taken to discuss issues related to LRIT at this session, expressed the view that the important issue of e-navigation should also receive the attention it required and deserved, taking into account the caution expressed by the Secretary-General at the opening of this session that the issue of e-navigation should not incur further delay. They noted that after having considered LRIT matters, there was very little time left for the Working Group to address the e-navigation issues, raising their concern that the work plan and time schedule for e-navigation, which had already been extended once, might be jeopardized again.

11.29 The delegation of Panama was of the view that this was an issue related to the workload of the Organization and that the Sub-Committee should move forward bearing in mind its objectives and the available resources. In this context, the Sub-Committee noted that, as per the Guidelines on the organization and method of work of the Committee and the MEPC and their subsidiary bodies (MSC-MEPC.1/Circ.4), it could only establish three working groups at each session.

11.30 In discussing the draft lists of gaps (COMSAR 16/WP.5, annex 3), the Sub-Committee concurred with the recommendation of the delegation of Japan to maintain the gap related to the need for developments of guidelines or guidance for usability evaluation as it was still a work in progress. Accordingly, the Sub-Committee requested the Secretariat to issue a revised version of the report of the Working Group (COMSAR 16/WP.5/Rev.1), in order to allow the STW and NAV Sub-Committees to refer to the draft list of gaps as agreed by the Sub-Committee.

11.31 The Sub-Committee endorsed the final draft list of gaps relevant to radiocommunications and search and rescue (COMSAR 16/WP.5/Rev.1, annex 3) and instructed the Secretariat to forward it to both STW 43, for further revision from the training perspective, and NAV 58, for final consideration, taking into account any further information that might be provided by the Correspondence Group on e-navigation and proposals received.

12 REVISION OF THE RECOMMENDATION FOR THE PROTECTION OF THE AIS VHF DATA LINK (RESOLUTION MSC.140(76))

12.1 The Sub-Committee noted that MSC 89 agreed to include, in the 2012-2013 biennial agenda of the Sub-Committee and in the provisional agenda for COMSAR 16, a planned output on "Revision of the Recommendation for the protection of the AIS VHF Data Link (resolution MSC.140(76))", with a target completion year of 2013.

12.2 The Sub-Committee considered document COMSAR 16/12 (IALA), proposing to update resolution MSC.140(76) on the protection of the AIS VHF Data Link, to take into account that several AIS devices had been permitted since its adoption in 2002.

The Sub-Committee further considered document COMSAR 16/12/1 (United States), commenting on document COMSAR 16/12, which proposed changes to resolution MSC.140(76) regarding loading of the AIS VHF data link.

12.3 In the ensuing discussions, the following views were expressed:

.1 that the proposal by IALA (COMSAR 16/12) should be supported; and

.2 concerns related to the proposals by the United States (COMSAR 16/12/1), in particular the issue of monitoring the AIS VDL which was a new IALA recommendation (A-124) on which very little feedback was available.

12.4 After some discussion, the Sub-Committee decided to refer documents COMSAR 16/12 and COMSAR 16/12/1 to the Technical Working Group for detailed consideration and instructed it, taking into account decisions of, and comments and proposals made in Plenary, to prepare a draft revised text of resolution MSC.140(76) and to provide comments and recommendations on the proposal to invite ITU, IALA, the STW Sub-Committee and IEC to take actions, as set out in document COMSAR 16/12/1, paragraph 7, and submit its report on Thursday, 15 March 2012.

Report of the Technical Working Group

12.5 On receipt of the report of the Technical Working Group (COMSAR 16/WP.4, section 7), the Sub-Committee took action as summarized in the ensuing paragraphs.

12.6 The Sub-Committee endorsed the draft MSC resolution on "Recommendation for the protection of the AIS VHF data link", as set out in annex 12, and subject to the concurrence by the Committee, agreed to bring it to the attention of the NAV Sub-Committee for comments, as appropriate with the view to approval by MSC 91.

12.7 Noting that as the work on this planned output had been completed, the Sub-Committee agreed to invite the Committee to delete this planned output when discussing its biennial agenda under agenda item 14.

13 CONSIDERATION OF LRIT RELATED MATTERS

Developments in relation to the operation of the LRIT system since MSC 89

13.1 The Sub-Committee noted the information provided by the Secretariat (COMSAR 16/13/2 and COMSAR 16/INF.4) relating to information communicated to the Organization by governments pursuant to the provisions of SOLAS regulation V/19-1 and the Revised performance standards and functional requirements for the long-range identification and tracking of ships (Revised performance standards), adopted by resolution MSC.263(84); the status of establishment of LRIT Data Centres (DCs); the transfer of operations of the International LRIT Data Exchange (IDE); the operation of the LRIT Data Distribution Plan (DDP) server and the Information Distribution Facility (IDF); the renewal of Public Key Infrastructure (PKI) certificates; and the newly adopted Guidelines for Port State Control related to LRIT (resolution A.1052(27), annex, appendix 9).

REPORT OF THE TENTH SESSION OF THE AD HOC LRIT GROUP

General comments

13.2 After the introduction of the report of the Ad Hoc LRIT Group (COMSAR 16/13) and related documents submitted by IMSO (COMSAR 16/13/3 (part) and COMSAR 16/INF.3), CIRM (COMSAR 16/13/4) and China (COMSAR 16/13/5 and COMSAR 16/13/6), several delegations and observers provided comments and expressed their views on the following issues:

.1 cost of the audits of DCs;

.2 audit requirements, including frequency of the audits;

.3 DCs unwilling to be audited or not audited due to the cost of the audit;

.4 suspension of operations or penalization of DCs which were not timely audited or could not demonstrate compliance with the relevant provisions of LRIT; and

.5 additional amendments to the Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange, as proposed by IMSO.

13.3 The delegation of Vanuatu made a statement, the text of which is set out in annex 13.

13.4 The views expressed had been summarized in the ensuing paragraphs under the relevant issues.

13.5 The Sub-Committee considered the report of the Ad Hoc LRIT Group (Group) on its tenth session (COMSAR 16/13), along with the related documents mentioned in paragraph 13.2 above, and, having approved the report, in general, took action as outlined in the ensuing paragraphs.

Communication of information to the Organization and establishment and testing of LRIT Data Centres

13.6 The Sub-Committee noted that, as of 9 March 2012:

.1 97 of 161 SOLAS Contracting Governments, including 10 non-metropolitan territories and two special administrative regions, were part of the LRIT system;

.2 49 SOLAS Contracting Governments had still not communicated any information to the Organization related to the implementation of LRIT; and

.3 66 DCs were operating in the LRIT system. There were also nine DCs which had either not started testing or had not yet completed the testing process and two existing DCs that were in the process of conducting additional testing to start providing services to other governments.

13.7 The Sub-Committee invited the Committee to urge governments:

.1 to communicate the information required pursuant to the provisions of SOLAS regulation V/19-1, the Revised performance standards, and other related decisions of the Committee, and to promptly update this information as and when changes occurred (COMSAR 16/13, paragraph 9.1.1); and

.2 establishing DCs which had not yet completed developmental or integration testing, to do so at the earliest opportunity, and to request technical assistance in case they were experiencing any issues with the establishment of their DCs (COMSAR 16/13, paragraph 9.1.2).

13.8 With regard to the testing requirements in case of changes to the hardware or software design of DCs or transfer of services to a different contractor (COMSAR 16/13, paragraph 9.1.3), the Sub-Committee agreed that:

.1 in cases of software upgrade or minor changes to the software and hardware of DCs, no additional testing should be required. However, if the change was to be made to a completely new realization of the DC, different to the one that had satisfactorily completed developmental and integration testing in the past, or to a different contractor using a completely different software solution, then the DC would be required to conduct developmental and integration testing again. In that case, and in accordance with the previous decisions of the Committee, the DC might qualify for accelerated testing if the new realization was to be based on the same design and the same software and hardware solution, used previously in at least two DCs operating in the production environment of the LRIT system;

.2 changes to the location of the DC, to the end connection points, upgrades of hardware or changes with regard to the operation of the DC should not be considered as a requirement to conduct developmental and integration testing, provided the original software design of the DC remained unchanged; and

.3 for the purpose of integration testing and in order to ensure the continuous and uninterrupted provision of LRIT information, the DC in question should be authorized to continue providing LRIT information while conducting integration testing and should notify all DCs and the IDE in cases of temporary suspension of operations or reduction of the level of service provided. However, if the DC concerned was to fail to complete integration testing, it would still have the right to roll back to its previous valid implementation. In that case, the DC would be treated as a DC which had not undergone any testing and would have to commence testing anew through the developmental and integration testing phase route,

and invited the Committee to endorse the above decisions.

13.9 The Sub-Committee noted the information provided by the LRIT Coordinator relating to the integration fee of DCs undergoing testing under the above-mentioned circumstances (COMSAR 16/13, paragraph 9.1.4).

Issues concerning the functioning and operation of the LRIT system

Transfer of operations of the International LRIT Data Exchange

13.10 The Sub-Committee noted that (COMSAR 16/13, paragraph 9.1.5):

.1 the changeover of operations of the IDE had been completed on 18 October 2011;

.2 the LRIT Operational governance body (Governance body) had considered the results of integration testing and authorized, subject to the final consideration and endorsement of the action by the Committee, at its ninetieth session, the operation of the IDE by the European Maritime Safety Agency (EMSA) in the production environment of the LRIT system;

.3 EMSA had established a primary and a secondary IDE site (the first one hosted at EMSA headquarters, in Lisbon, Portugal, and the second one hosted at EMSA's Business Continuity Facility in Porto, Portugal); and

.4 the United States had established the disaster recovery site of the IDE (hosted at the United States Coast Guard Operations System Center (OSC)) and would continue providing Domain Name Service (DNS) management for the IDE (imo-ide.org).

13.11 The Sub-Committee appreciated the efforts of the United States and the SOLAS Contracting Governments and the European Commission for having established the IDE through EMSA.

13.12 In light of the foregoing, the Sub-Committee invited the Committee to (COMSAR 16/13, paragraph 9.1.6):

.1 endorse the decision taken by the Governance body for the operation of the IDE by EMSA and of its disaster recovery site by the United States in the production environment of the LRIT system; and

.2 consider and decide any offer for the continued operation of the IDE by EMSA and its disaster recovery site by the United States beyond 2013.

Issues concerning search and rescue (SAR) services

13.13 The Sub-Committee urged Member Governments to:

.1 verify and update, as necessary, the information they had communicated to the Organization with regard to the availability of SAR services (COMSAR 16/13, paragraph 9.1.9); and

.2 instruct their SAR services to send their responses to IMSO's questionnaire reminding them of their obligation to provide, when requested by the LRIT Coordinator, information in accordance with the provisions of paragraph 17.3 of the Revised performance standards to enable a holistic review of the performance of the LRIT system and for the investigation of any disputes (COMSAR 16/13, paragraph 9.1.10).

13.14 In this context, the delegation of the United States recommended that the SAR questionnaire, prepared by IMSO, should be communicated to the RCC through the designated national points of contact for LRIT-related matters to ensure adequate and timely response.

13.15 The Sub-Committee reminded SAR services, notwithstanding the purpose for which they might be requesting the provision of LRIT information, to exercise the right to request LRIT information with due diligence and care and to avoid excessive requests (COMSAR 16/13, paragraph 9.1.13).

Other technical issues

13.16 The Sub-Committee urged all DCs, the IDE and the IMO Secretariat responsible for the DDP server to maintain time synchronization, as required by paragraph 2.2.1.4 of MSC.1/Circ.1259/Rev.4, annex, annex 3 (COMSAR 16/13, paragraph 9.1.11).

13.17 The Sub-Committee requested the Secretariat to manually remove the empty character which was in front of some port facilities' names listed in the Maritime Security module of GISIS on behalf of the governments concerned and invited the Committee to endorse this action (COMSAR 16/13, paragraph 9.1.12).

Issues concerning LRIT shipborne equipment

13.18 The Sub-Committee encouraged SOLAS Contracting Governments to (COMSAR 16/13, paragraph 9.1.14):

.1 participate in the discussions at IEC relating to the preparation of standards intended to assist the type approval of LRIT shipborne equipment; and

.2 formalize their own internal mechanisms to ensure that their own ships were reporting and that their DC was operating correctly, including the continuous monitoring of the proper functioning of LRIT shipborne equipments installed on board ships flying their flag and, if necessary, to consider upgrading or replacing the existing equipment.

13.19 The Sub-Committee considered whether the use of dedicated LRIT shipborne equipment or the utilization of the enhanced capabilities of newer equipment could improve LRIT compliance and reduce the financial burden to administrations (COMSAR 16/13, paragraph 9.1.15).

13.20 CIRM (COMSAR 16/13/4) provided information related to functioning of LRIT shipborne equipment, including comments and recommended solutions to further improve the reliability of terminals reporting into the LRIT system.

13.21 The delegation of the Netherlands, supporting the recommendations of CIRM, expressed the view that a detailed study was required of older Inmarsat terminals used for LRIT to decide which terminals would need to be replaced or updated. Accordingly, Inmarsat should be invited to make available a list of Inmarsat terminals (both new and older types) indicating which ones supported the new protocols and which did not.

13.22 The ICS observer, supported by others, informed the Sub-Committee that during the development and establishment of the LRIT system, the industry had been assured that the existing shipborne equipment would be used. Accordingly, they expressed concerns that now there was the possibility of replacement of equipment. To this end, the delegation of Panama sought cost-effective practical solutions to the issue.

13.23 China (COMSAR 16/13/6) provided information on functioning of LRIT shipborne equipment, indicating, in particular, some difficulties it had observed with an incorrect procedure of withdrawing LRIT shipborne terminals and recommended proposals for improvement.

13.24 After a brief discussion, the Sub-Committee decided to refer the issue of use of dedicated LRIT shipborne equipment, together with documents COMSAR 16/13/4 (CIRM) and COMSAR 16/13/6 (China), to the Working Group on e-navigation and LRIT for detailed consideration and advice, as appropriate.

Issues concerning the Information Distribution Facility (IDF)

13.25 The Sub-Committee recalled that MSC 89 had agreed on the addition of polling functionalities to the IDF as an "opt-in" arrangement in the LRIT system where each flag State would have the ability to determine which security force, if any, would be entitled to transmit polling request messages to them and, in this respect, it had instructed the Group to consider and recommend an appropriate technical solution.

13.26 The Sub-Committee endorsed the proposed technical solution proposed by the Group, including amending the Web interface of the DDP so as to allow flag Administrations to decide which security forces, if any, would be authorized to poll the current position o any of their own ships that might be approaching an area of high risk of piracy attack and instructed the Working Group on e-navigation and LRIT to prepare a draft MSC resolution amending resolution MSC.298(87) on Establishment of a distribution facility (COMSAR 16/13, paragraph 9.1.16).

Issues concerning the financial burden of SOLAS Contracting Governments for the maintenance, operation and audit of LRIT Data Centres

Financial support offered by Canada

13.27 The Sub-Committee noted with appreciation the financial support offered by Canada to some African developing countries to help them to fulfil their LRIT obligations and that some African countries had already joined or were in the process of joining the South Africa NDC (COMSAR 16/13, paragraph 9.1.17).

Consideration of Canada's proposals

13.28 The Sub-Committee noted that the Group had considered the following two proposals submitted by Canada (COMSAR 16/13, paragraphs 9.1.17 and 9.1.18):

.1 allowing the South Africa NDC to pay only once in cases where different governments using the DC were to request the same LRIT information, as a coastal State, within the same geographical area of entitlement (i.e. within overlapping areas of active coastal State standing orders); and

.2 allowing Canada to request LRIT information on a voluntary basis, as a coastal State, up to a distance of 4,000 nm off its coasts to contribute to the sustainability of the LRIT system,

and, bearing in mind that these were policy issues, it had invited Canada to resubmit its proposals to the Committee.

Use of the LRIT system

13.29 The Sub-Committee agreed that there was a need for the preparation of guidance for coastal States and port States on use of the LRIT system and invited Member Governments and international organizations to submit comments and proposals to COMSAR 17 (COMSAR 16/13, paragraph 9.1.19).

13.30 The Sub-Committee noted with appreciation the information provided in document COMSAR 16/13/5 (China) concerning the use of the LRIT system, in particular, for search and rescue, for ship security and anti-piracy issues.

Scale of charges to be levied or expected to be levied by the LRIT Coordinator

13.31 The Sub-Committee noted the information provided by IMSO in relation to:

.1 the charges expected to be levied during the next five years for the work required to be undertaken by the LRIT Coordinator related to the performance review and audit of DCs (COMSAR 16/13, paragraph 9.1.20); and

.2 the scale of charges to be levied by IMSO for LRIT-related work undertaken as the LRIT Coordinator during 2012 (COMSAR 16/INF.3).

13.32 In noting the information provided in document COMSAR 16/INF.3, several delegations spoke on the issue and:

.1 expressed concerns on the high cost of the audit unit and indicated that this was an issue that could be preventing SOLAS Contracting Governments from joining the LRIT system or could force in the future others to opt out; and

.2 recommended an urgent review of the audit requirements with a view to reducing the financial burden on administrations.

13.33 The IMSO observer advised the Sub-Committee that the information provided to the Ad Hoc LRIT Group (COMSAR 16/13, paragraph 5.18) was only an estimate of the cost of the audit for the next five years and that it had informed the Committee in the past, before even the system was implemented, that the cost of the audit unit could be in the order of £10,000.

13.34 During the ensuing discussions, the following views were expressed:

.1 any changes to the existing audit requirements could have an impact on the participation of IMSO, as the LRIT Coordinator, since the LRIT-related functions were to be carried out at no extra cost to IMSO Member Governments;

.2 the cost of the audit and not its requirements or frequency was the main cause for concern to countries operating DCs;

.3 considering that the LRIT system was still evolving, it was premature to review the frequency of the present audit requirements;

.4 that IMSO, as the LRIT Coordinator, should be invited to review its charges and consider more cost-effective measures with a view to reducing the cost of the audit unit;

.5 that reducing the cost of the audit might reduce the financial burden on individual DCs but was not necessarily the solution for the financial viability of the LRIT system as a whole;

.6 that the financial viability of the LRIT system should be considered holistically and effective solutions should be developed urgently;

.7 LRIT system was unbalanced which affected, in particular, developing countries with a small number of ships operating DCs financially; and

.8 that a possible way forward could be the sharing of incomes generated from the selling of LRIT information equally between all DCs.

13.35 After an in-depth discussion and taking into account that the views expressed were issues of a policy nature, the Sub-Committee decided to invite the Committee to:

.1 note the information provided by IMSO concerning charges to be levied or expected to be levied by the LRIT Coordinator, as set out in annex 14;

.2 note the views and concerns expressed by delegations, as well as the repeated concerns, relating to the cost of the audit and the financial viability of the LRIT system; and

.3 consider and decide on the need for an urgent review of the LRIT system, with a view to reducing the financial burden of operating DCs in compliance with SOLAS regulation V/19-1.

13.36 The Sub-Committee also invited Member Governments to submit proposals to MSC 90, commenting on the outcome of COMSAR 16 with a view to reducing the financial burden on administrations.

13.37 In this context, the delegation of Tuvalu, whilst agreeing with the above recommendation of the Sub-Committee, stated that the annual audit fees as determined by IMSO were considered unrealistic and unaffordable. The Committee should be given consideration to reducing the frequency of the audit.

13.38 The IMSO observer reaffirmed that IMSO would explore measures which would be effective in addressing this issue. He invited all IMSO's Member Governments to participate actively in this process.

Amendments to LRIT-related documentation

Draft amendments to the Revised performance standards

13.39 The Sub-Committee approved the draft MSC resolution on amendments to the Revised performance standards and functional requirements for the long-range identification and tracking of ships (COMSAR 16/13, paragraph 9.1.22), as set out in annex 15, and invited the Committee to adopt it.

13.40 The Sub-Committee noted that section 13 of the Revised performance standards would need to be reviewed to ensure proper assessment of the LRIT system performance and invited Member Governments to submit comments and proposals to COMSAR 17 (COMSAR 16/13, paragraph 9.1.23).

Draft amendments to MSC.1/Circ.1259/Rev.4 and MSC.1/Circ.1294/Rev.2

13.41 The Sub-Committee endorsed the draft amendments to MSC.1/Circ.1259/Rev.4 and MSC.1/Circ.1294/Rev.2, containing the Technical documentation (parts I and II), as set out in annex 16, section 1, including the additional draft amendments to be implemented during a future modification testing phase of the LRIT system, as set out in annex 16, section 2, and invited the Committee to approve them (COMSAR 16/13, paragraphs 9.1.7 and 9.1.8).

13.42 Furthermore, the Sub-Committee also invited the Committee to consider authorizing it to approve in the future, on behalf of the Committee, any further amendments to MSC.1/Circ.1259/Rev.4 or MSC.1/Circ.1294/Rev.2, as amended.

Draft amendments to the Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange

13.43 The Sub-Committee considered the draft amendments to Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange (COMSAR 16/13, paragraph 9.1.21), along with the additional amendments proposed by IMSO (COMSAR 16/13/3, paragraphs 20 to 22).

13.44 Several delegations did not concur with the additional amendments proposed by IMSO as it would become mandatory for DCs to be liable to complete the audit and pay the associated fee.

13.45 The IMSO observer recalled that it had informed the Ad Hoc LRIT Group that it was unable to commit to a specific policy related to additional or supplementary charges for carrying out an extended audit until the matter had been considered by the IMSO Advisory Committee.

13.46 After discussion, the Sub-Committee was of the view that the issue of liability to pay for extended audits was a policy issue that should be considered by the Committee and decided to refer the above-mentioned documents to the Working Group on e-navigation and LRIT for further consideration of the amendments proposed by IMSO from the technical perspective only, and without considering financial-related issues.

Draft amendments to the Continuity of service plan for the LRIT system

13.47 The Sub-Committee endorsed the draft amendments to the Continuity of service plan for the LRIT system (MSC.1/Circ.1376), as set out in annex 17, and invited the Committee to approve them.

AUDIT REVIEW AND PERFORMANCE OF LRIT DATA CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE

13.48 The Sub-Committee considered document COMSAR 16/13/1 (IMSO) containing the summary audit reports of DCs audited during the period from 7 March 2011 until 8 December 2011 and document COMSAR 16/13/3 (IMSO) providing observations and recommendations relating to the performance of the LRIT system and information on dealings of the LRIT Coordinator with the LRIT components for review and audit purposes.

13.49 In this context, the Sub-Committee noted that the LRIT Coordinator:

.1 had not observed during 2011, with the exception of one NDC, any serious and systematic deviation from the provisions of the system that might have had an adverse impact on the implementation of the LRIT system;

.2 continued to experience delays in receiving responses from DCs that were preventing the timely completion of some of the audits;

.3 at the time of the submission of the document, it could not complete the performance review and audit of five DCs due to different reasons (i.e. unwilling to be audited, not agreeable to the audit fees, no response, unable to fund the cost of the audit, DC not operational) and recommended that any DC that does not comply fully with the requirements of the Revised Performance Standards should be temporarily suspended from the production LRIT system until their compliance with such requirements has been satisfactorily audited and the report of that audit had been formally communicated to the Secretary-General by the LRIT Coordinator; and

.4 indicated that one DC had failed to demonstrate compliance with the audit criteria and recommended a procedure to be followed in the future, in this respect.

13.50 The IMSO observer provided up-to-date information and indicated that the audits of two of the five above-mentioned DCs were in progress and that communications had been established with another one.

13.51 Several delegations were of the view that:

.1 DCs not audited should not be suspended from operating in the production of LRIT system; and

.2 the barring, suspension or temporary disconnection of DCs from operating in the LRIT system were beyond the scope of SOLAS regulation V/19-1 and were policy issues that should be considered by the Committee.

13.52 After discussions, the Sub-Committee agreed to refer the above issues to the Committee for consideration and decision, as appropriate.

13.53 The Sub-Committee also decided to refer document COMSAR 16/13/1 (IMSO) to the Working Group on e-navigation and LRIT for further consideration and advice, as appropriate.

ESTABLISHING THE WORKING GROUP ON E-NAVIGATION AND LRIT

13.54 The Sub-Committee instructed the Working Group on e-navigation and LRIT, taking into account decisions of, and comments and proposals made in Plenary, to:

.1 consider the issues of functioning LRIT shipborne equipment and use of dedicated LRIT shipborne equipment, together with documents COMSAR 16/13/4 (CIRM) and COMSAR 16/13/6 (China), and recommend the approach to be taken;

.2 prepare a draft MSC resolution amending resolution MSC.298(87) on Establishment of a distribution facility, describing the proposed technical solution proposed by the Ad Hoc LRIT Group for adding polling functionalities to the IDF (COMSAR 16/3, paragraph 9.1.16);

.3 consider the audit reports submitted by the LRIT Coordinator (COMSAR 16/13/1) and prepare a list of issues, if any, that might require further consideration;

.4 prepare a draft COMSAR circular summarizing the audits conducted by the LRIT Coordinator so far; and

.5 consider the additional amendments to the draft MSC circular on Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange prepared by the Ad Hoc LRIT Group, as proposed by IMSO (COMSAR 16/13/3, paragraphs 20 to 22), and recommend the approach to be taken,

and submit its report on Thursday, 15 March 2012.

Report of the Working Group

13.55 On receipt of the report of the Working Group on e-navigation and LRIT (COMSAR 16/WP.5/Rev.1), the Sub-Committee approved the report in general and took action as summarized in the ensuing paragraphs.

Addition of polling functionalities to the IDF

13.56 The Sub-Committee approved a draft MSC resolution amending resolution MSC.298(87) on Establishment of a Distribution Facility, as set out in annex 18, and invited the Committee to adopt it.

Summary audit reports submitted by the LRIT Coordinator

13.57 The Sub-Committee noted that no major issues had been identified from the results of the audits of DCs submitted by the LRIT Coordinator and invited the Committee to accept the Summary audit reports of the following DCs audited during the period from 7 March 2011 to 8 December 2011: Antigua and Barbuda NDC, Australia NDC, Azerbaijan NDC, Bahamas NDC, Bahrain NDC, Barbados NDC, Belize NDC, Plurinational State of Bolivia NDC, Brazil RDC, Canada NDC, Cayman Islands (United Kingdom) NDC, China NDC, Democratic People's Republic of Korea NDC, Egypt NDC, European Union CDC, India NDC, Isle of Man (United Kingdom) NDC, Israel NDC, Jamaica NDC, Japan NDC, Kuwait NDC, Liberia NDC, Marshall Islands NDC, Mauritius NDC, Montenegro NDC, Myanmar NDC, Nigeria NDC, Philippines NDC, Qatar NDC, Republic of Korea NDC, Sierra Leone NDC, Singapore NDC,

Thailand NDC, Turkey NDC, Ukraine NDC, United Arab Emirates NDC, United Republic of Tanzania NDC, United States NDC and Vanuatu NDC.

13.58 The Sub-Committee endorsed a draft COMSAR circular listing the audits conducted so far by the LRIT Coordinator, as set out in annex 19, and invited the Committee to approve it.

Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange

13.59 The Sub-Committee endorsed a draft MSC circular on Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange, as set out in annex 20, and invited the Committee to approve it.

Functioning LRIT shipborne equipment and use of dedicated LRIT shipborne equipment

13.60 The Sub-Committee:

.1 noted that there was no agreement within the Working Group to recommend the use of dedicated LRIT shipborne equipment;

.2 recommended administrations to analyse the performance of individual LRIT shipborne equipment by, for example, using archived LRIT information collected from their own ships and determine their replacement or upgrade, as necessary;

.3 invited Member Governments to continue sharing their experiences concerning malfunction of LRIT shipborne equipment;

.4 with regard to the "ghost terminal" situation:

.1 encouraged Inmarsat and Application Service Providers to continue working closely together to address the issue; and

.2 invited Member Governments to:

.1 liaise with Recognized Organizations and investigate if adding a relevant item to their checklist for change of flag could be another way to address the issue; and

.2 submit proposals to COMSAR 17, in this respect.

14 BIENNIAL AGENDA AND PROVISIONAL AGENDA FOR COMSAR 17

General

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

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

Biennial agenda, post-biennial agenda and provisional agenda for COMSAR 17

14.3 Taking into account the progress made during this session, the Sub-Committee prepared its draft revised biennial agenda for the 2012-2013 biennium in SMART terms, including items on the Committee's post-biennial agenda under the purview of the Sub-Committee, and the provisional agenda for COMSAR 17 (COMSAR 16/WP.2), based on the biennial agenda approved by MSC 89, which was further modified by the High-level Action Plan of the Organization and Priorities for the 2012-2013 Biennium (resolution A.1038(27)), as set out in annexes 21 and 22, respectively, for approval by MSC 90.

Arrangements for the next session

14.4 The Sub-Committee agreed to establish, at its next session, working groups on the following subjects:

.1 Search and Rescue (SAR);

.2 GMDSS, ITU and operational matters and performance standards; and

.3 e-navigation and LRIT.

14.5 The Sub-Committee established a Correspondence Group on the Review of the GMDSS, subject to approval by MSC 90 of the Work Plan and the new unplanned output on the "Review and modernization of the Global Maritime Distress and Safety System" for the COMSAR, NAV and STW Sub-Committees, and the inclusion of this agenda item on the agenda of COMSAR 17.

Status of planned outputs

14.6 The Sub-Committee prepared the report on the status of planned outputs of the High-level Action Plan of the Organization and priorities for the 2012-2013 biennium relevant to the Sub-Committee, as set out in annex 23, and invited the Committees to note the status.

Date of the next session

14.7 The Sub-Committee noted that the seventeenth session of the Sub-Committee had been tentatively scheduled to take place from 21 to 25 January 2013.

15 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2013

15.1 In accordance with rule 16 of the Rules of Procedure of the Maritime Safety Committee, the Sub-Committee unanimously re-elected Mr. C. Salgado (Chile) as Chairman for 2013. Furthermore, having been informed that the Vice-Chairman would not be available for re-election, the Sub-Committee decided to elect its Vice-Chairman for 2013 at the beginning of its next session. In this context, the Sub-Committee expressed its deep appreciation to Mr. H. Supriyono (Indonesia) for his outstanding contribution over many years to the work of the Organization, especially the Sub-Committee, and wished him every success in his future undertakings.

16 ANY OTHER BUSINESS

Operating anomalies identified within ECDIS

16.1 The Sub-Committee noted the outcome of deliberations on this matter at MSC 88 (MSC 88/26, paragraphs 25.19 to 25.22), MSC 89 (MSC 89/25, paragraphs 24.6 to 24.9) and NAV 57 (NAV 57/15, paragraphs 14.38 to 14.48).

16.2 The Sub-Committee further noted that:

.1 IHO had convened a meeting of interested parties in February 2011 to discuss the matter further, which resulted in the distribution of a test ENC to all ships using ENCs. This enabled all mariners using ECDIS to identify whether their equipment conformed to the latest standards, and also highlighted some of the known software deficiencies affecting certain manufacturers' ECDIS;

.2 the United Kingdom had, in September 2011, convened a meeting of interested parties in London, which had reviewed various issues where different ECDIS equipment had been identified as not performing as anticipated by the relevant standards. Eighteen anomalies, i.e. unanticipated behaviours, were identified, which included the possibility of significant charted features, for example, wrecks not displaying appropriately on some manufacturer's models of ECDIS and had obvious implications for safety of navigation; and

.3 IHO had hosted a technical workshop at the International Hydrographic Bureau in Monaco on 25 and 26 January 2012 and the outcome had been reported to MSC 90 (MSC 90/10/1).

16.3 The Sub-Committee considered document COMSAR 16/16 (Australia, et al.) reporting progress to date on identifying and rectifying operating and presentation anomalies with ECDIS. In particular, the Sub-Committee was requested to provide advice on how to communicate to mariners important safety-related information concerning ECDIS.

16.4 Some delegations expressed the view that the consideration of this matter by the Organization would contribute substantially to the safety of navigation and that the Sub-Committee should consider the best means for informing mariners about issues that might affect their ECDIS.

16.5 The IHO observer informed the Sub-Committee on the specific issue of communicating to mariners important safety-related information concerning ECDIS and, in their view, the NAVAREA Coordinator should retain responsibility for deciding what messages he/she would issue. Furthermore, the joint IMO/IHO/WMO Manual on MSI did not at present include "ECDIS" as a class of messages appropriate for dissemination as MSI. In addition, the IHO's WWNWS Sub-Committee's Document Review Working Group was conducting a full review of all the WWNWS documentation and would be meeting next week with the intention of submitting editorial proposals to COMSAR 17 (COMSAR 16/3/2). This Working Group would consider the inclusion of this subject matter in the joint Manual, including the provision of relevant examples, and make a submission to COMSAR 17, if requested by the Sub-Committee.

16.6 In light of the foregoing, the Sub-Committee appreciated the offer by IHO and requested them to consider this matter and make an appropriate submission to COMSAR 17.

16.7 The delegation of the United Kingdom recalled that they had requested the Sub-Committee if the WWNWS was the suitable vehicle for such communications to mariners, and, if so, could work be taken forward in the right form to establish a system. They noted with appreciation that the matter had been taken up by the Chairman of the WWNWS Sub-Committee and expressed the hope that NAVAREA Coordinators would cooperate. Furthermore, they had also requested the Sub-Committee to provide any further specific advice or guidance into the "consolidated" recommendations to MSC 90 in accordance with NAV 57/15, paragraph 14.48.

16.8 The IHO observer assured that the IHO, through the Chairman of its WWNWS Sub-Committee, would, with immediate effect, do all it could to ensure the broadcast of such messages by all NAVAREA Coordinators.

16.9 The ICS observer suggested that the STW Sub-Committee should be informed on this matter.

Report on the Thirteenth Combined Antarctic Naval Patrol, 2010-2011

16.10 The Sub-Committee noted with appreciation the information provided in document COMSAR 16/INF.7 (Argentina and Chile) describing the activities of the thirteenth combined Antarctic naval patrol carried out during the southern hemisphere summer of 2010/2011 by Argentina and Chile.

Development of a mandatory code for ships operating in polar waters

16.11 The Sub-Committee noted that DE 56 had referred the draft Polar Code to the Sub-Committee together with relevant explanatory comments (DE 56/WP.4, annex 2), with a request to consider the parts of the draft Code under its purview and advise DE 57 of the outcome of their consideration. It was noted that, in particular, the DE Sub-Committee had invited the Sub-Committee to consider chapter 10 of the draft Code, which related to the functional requirements of the communication equipment, with few prescriptive or performance requirements to define how these might be fulfilled, and chapter 8.3 for additional requirements for communications with life-saving equipment.

16.12 After a brief discussion, the Sub-Committee noted that due to the short period of time between DE 56 and this session, it had not been possible for Member Governments to consider this request from the DE Sub-Committee. Furthermore, noting that DE 57 was scheduled eight weeks after COMSAR 17, the Sub-Committee invited Member Governments and interested organizations to consider the matter in detail and submit comments and proposals to COMSAR 17.

16.13 The Sub-Committee also agreed to invite the ICAO/IMO Joint Working Group and the Joint IMO/ITU Experts Group to consider the issue and provide relevant advice to COMSAR 17.

Bangladesh ferry accident

16.14 The Secretary-General informed the Sub-Committee that the passenger ferry **Shariatpur-1** had sunk on 13 March 2012, after being hit by a small cargo ship in the Meghna River, south-west of the Bangladeshi capital, Dhaka. The Secretary-General offered his condolences and sympathies to the families of all those who lost their life in this tragic accident. He also expressed the solidarity of IMO, at these difficult times, with the Government of Bangladesh and IMO's readiness to respond to any request from Bangladesh for assistance for technical co-operation.

China ferry accident

16.15 The Assistant Secretary-General/Director, Maritime Safety Division informed the Sub-Committee that on 11 March 2012 a passenger ship had sunk after a collision with a cargo ship on the inland waterways in south China. On behalf of the Organization, he offered his condolences and sympathies to the families of all those who lost their life in this tragic accident.

Expressions of appreciation

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

- Captain Valentin Ruz Rodriguez (Argentina) (on return home);
- Commander Roberto Annichini (Argentina) (on return home);
- Ms. Petra Bethge (Germany) (on return home);
- Captain Hadi Supriyono (Indonesia) (on return home);
- Mr. Kees Koning (the Netherlands) (on retirement);
- Mr. Simon Cockburn (United Kingdom) (on retirement);
- Cdr. Tim Sewell (United Kingdom) (on retirement);
- Captain David McBride (United States) (on retirement);
- Admiral Alexandros Maratos (President of IHO) (on retirement);
- Mr. Stephen Shipman (IHO) (on retirement).

17 ACTION REQUESTED OF THE COMMITTEE

17.1 The Maritime Safety Committee, at its ninetieth session under agenda item 8, is invited to:

.1 endorse the withdrawal of COMSAR/Circ.36 with effect from 1 January 2013, following the revision of the WWNWS documentation (paragraphs 3.11 and 3.12);

.2 approve the draft revision of annex 8 to MSC.1/Circ.1382 and instruct the Secretariat to include this revised annex in the revised draft MSC circular, as set out in document COMSAR 15/16, annex 5 (MSC 90/8, paragraph 2.3 refers) (paragraph 3.18 and annex 1);

.3 note the concerns expressed with regard to the review of the GMDSS, in particular, on the known and unknown implications in terms of affordability by developing countries (paragraph 3.29);

.4 approve the draft revised Work Plan on the "Review and modernization of the Global Maritime Distress and Safety System", along with a new unplanned output on the "Review and modernization of the Global Maritime Distress and Safety System" with a target completion year of 2017 and include the proposed unplanned output in the biennial agenda of the COMSAR, NAV and STW Sub-Committees and in the provisional agenda for COMSAR 17 (paragraph 3.30.1 and annex 2);

.5 endorse the decision of the Sub-Committee to approve the Terms of Reference for the Correspondence Group on the Review of the GMDSS, under the coordination of the United States, for the intersessional work to be done between MSC 90 and COMSAR 17 (paragraph 3.30.2 and annex 3);

.6 bring the Work Plan to the attention of the STW Sub-Committee, in particular, to consider issues related to the Human Element for advice, as appropriate (paragraph 3.21.3);

.7 approve the draft MSC circular on Guidance to prospective GMDSS satellite service providers (paragraph 3.30.3 and annex 4);

.8 recommend to Member States to consider carefully the proposal whether to delete or not to delete appendix 2 of the International Telecommunications Regulations requirements concerning Accounting Authorities, which would be discussed during ITU's World Conference on International Telecommunications (WCIT) in December 2012 (paragraph 4.20);

.9 note that the Sub-Committee decided to refer document COMSAR 16/4/5 on the outcome of WRC-12 to the eighth session of the Joint IMO/ITU Experts Group for a detailed review and to start the preparation of an IMO position on maritime issues for WRC-15 (paragraph 4.21);

.10 authorize the convening of the eighth meeting of the Joint IMO/ITU Experts Group, to be held at IMO Headquarters in London, from 8 to 12 October 2012 (paragraph 4.22);

.11 authorize the convening of the nineteenth session of the ICAO/IMO Joint Working Group, to be held in Hong Kong, China from 10 to 14 September 2012 (paragraph 6.4);

.12 request the NAV Sub-Committee to develop draft guidance to seafarers, to be further considered and finalized by COMSAR 17, regarding the difficulties arising in interpreting the AIS-SART symbol, along with the established text message SART ACTIVE, when used for Man Overboard (MOB) and similar devices using AIS-SART technology (paragraph 7.20);

.13 approve the draft MSC circular on amendments to the IAMSAR Manual, taking into account ICAO's concurrence with the inclusion of the proposed amendments to the Manual, for inclusion in the 2013 edition (paragraph 8.7 and annex 11);

.14 note that the Sub-Committee, in relation to the Development of an e-navigation strategy implementation plan, endorsed the final draft list of gaps relevant to radiocommunications and search and rescue and instructed the Secretariat to forward it to both STW 43, for further revision from the training perspective, and NAV 58, for final consideration (paragraph 11.31);

.15 bring the draft MSC resolution on "Recommendation for the protection of the AIS VHF data link" to the attention of the NAV Sub-Committee for comments, as appropriate, with the view to approval by MSC 91 (paragraph 12.6 and annex 12);

.16 approve the draft revised biennial agenda for the 2012-2013 biennium, including items on the Committee's post-biennial agenda under the purview of the Sub-Committee and the provisional agenda for COMSAR 17 (paragraph 14.3, annexes 21 and 22); and

.17 note the report on the status of planned outputs for the 2012-2013 biennium relevant to the Sub-Committee (paragraph 14.6 and annex 23).

17.2 The Maritime Safety Committee, at its ninetieth session under agenda item 6 (LRIT-related matters), is invited to:

.1 urge governments to communicate the information required pursuant to the provisions of SOLAS regulation V/19-1, the Revised performance standards, and other related decisions of the Committee, and to promptly update this information as and when changes occur (paragraph 13.7.1);

.2 urge Governments establishing DCs which have not yet completed developmental or integration testing, to do so at the earliest opportunity, and to request technical assistance in case they were experiencing any issues with the establishment of their DCs (paragraph 13.7.2);

.3 endorse the decisions of the Sub-Committee with regard to the testing requirements in case of changes to the hardware or software design of DCs or transfer of services to a different contractor (paragraph 13.8);

.4 endorse the decision taken by the Governance body for the operation of the IDE by EMSA and of its disaster recovery site by the United States in the production environment of the LRIT system (paragraph 13.12.1);

.5 consider and decide on any offer for the continued operation of the IDE by EMSA and its disaster recovery site by the United States beyond 2013 (paragraph 13.12.2);

.6 endorse the action taken by the Sub-Committee requesting the Secretariat to manually remove the empty character which was in front of some port facilities' names listed in the Maritime Security module of GISIS on behalf of the Governments concerned (paragraph 13.17);

.7 note the information provided by IMSO concerning estimated cost of the LRIT audit unit for 2012 to 2016 and scale of charges to be levied during 2012 by the LRIT Coordinator (paragraph 13.35.1 and annex 14);

.8 note the views and concerns expressed by delegations, as well as the repeated concerns, relating to the cost of the audit and the financial viability of the LRIT system (paragraph 13.35.2);

.9 consider and decide on the need for an urgent review of the LRIT system, with a view to reducing the financial burden of operating DCs in compliance with SOLAS regulation V/19-1 (paragraph 13.35.3);

.10 adopt the draft MSC resolution on the amendments to the Revised performance standards and functional requirements for the long-range identification and tracking of ships (paragraph 13.39 and annex 15);

.11 approve the draft amendments to MSC.1/Circ.1259/Rev.4 and MSC.1/Circ.1294/Rev.2, including the additional draft amendments to be implemented during a future modification testing phase of the LRIT system (paragraph 13.41 and annex 16);

.12 authorize the Sub-Committee to approve in the future, on behalf of the Committee, any further amendments to MSC.1/Circ.1259/Rev.4 or MSC.1/Circ.1294/Rev.2, as amended (paragraph 13.42);

.13 approve the draft amendments to MSC.1/Circ.1376 on Continuity of service plan for the LRIT system (paragraph 13.47 and annex 17);

.14 consider and decide the issue of the barring, suspension or temporary disconnection of DCs from operating in the LRIT system, taking into account the view expressed by the Sub-Committee (paragraphs 13.51 and 13.52);

.15 adopt the draft MSC resolution amending resolution MSC.298(87) on Establishment of a Distribution Facility (paragraph 13.56 and annex 18);

.16 bearing in mind that no major issues had been identified from the results of the audits submitted by the LRIT Coordinator (COMSAR 16/13/1), note the Summary audit reports of the DCs audited during the period from 7 March to 8 December 2011 (paragraph 13.57);

.17 approve the draft COMSAR circular on Audits of LRIT Data Centres and of the International LRIT Data Exchange conducted by the LRIT Coordinator (paragraph 13.58 and annex 19); and

.18 approve the draft MSC circular on Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange (paragraph 13.59 and annex 20).

17.3 The Maritime Safety Committee, at its ninety-first session, is invited to:

.1 endorse the action taken by the Sub-Committee to invite IEC, assisted by IMSO and CIRM, to develop a data interface definition for an Inmarsat C SafetyNET terminal similar to the existing definition for NAVTEX, for use by manufacturers of Inmarsat C terminals and navigation display systems (e.g. INS, ECDIS) on a voluntary basis (paragraphs 3.19);

.2 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey liaison statements to ITU-R WP 5B and ITU-R WP 7C, as appropriate:

.1 on the "Work Plan adopted for revision of Recommendation ITU-R M.493-13" (paragraph 4.19.1 and annex 5);

.2 "Regarding Recommendation ITU-R M.493-13" (paragraph 4.19.2 and annex 6); and

.3 on "Proposed changes to Recommendations ITU-R M.824-3 and ITU-R M.1176 and WRC-15 Agenda item 1.12 and Resolution COM 6/18" (paragraph 4.19.3 and annex 7);

.3 remind Member States, with a low response rate, of the importance of a reliable test call response of their search and rescue point of contact (SPOC) (paragraph 5.14);

.4 inform the Technical Co-operation Committee on the perceived need for some countries identified in document COMSAR 16/5/2, paragraph 17, for capacity-building and technical assistance to help ensure timely response of their search and rescue point of contact (SPOC) upon receiving distress alerts (paragraph 5.15);

.5 approve the draft revised MSC circular on Guide for cold water survival (paragraph 6.22.1 and annex 8);

.6 approve the draft COMSAR circular on Guidance for entering and updating information on Search and Rescue into GISIS and on how to access information for operational use (paragraph 6.22.2 and annex 9);

.7 approve the draft COMSAR circular on Guidance on Smartphone and Other Computer Device SAR Applications (paragraph 6.22.3 and annex 10); and

.8 approve the draft MSC resolution on "Recommendation for the protection of the AIS VHF data link", taking into account comments made by NAV 58, if any (paragraph 12.6 and annex 12).

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ANNEX 1

DRAFT REVISION OF ANNEX 8 TO MSC.1/CIRC.1382

International SafetyNET Service

1 Does your Administration broadcast MSI through the International SafetyNET Service?

YES ☐ NO ☐

Is it operational now?

YES ☐ NO? ☐

If not operational now, indicate the date of operation in the following table.

2 Provide details of International SafetyNET Service

NAV/MET Area	Type of Information	Country	LES/LESO	Ocean Region/LES ID	MSI Coastal Warning Area(1) (if applicable)	Broadcast schedule (UTC)	Status of implementation
	NAV(2)	*					
	MET(3)	**					
	SAR(4)						

(1) Provide a diagram showing limits of Coastal Warning Areas, including B1 Codes.
(2) NAV = navigational warnings.
(3) MET = meteorological information.
(4) SAR = search and rescue alerts.
* = NAVAREA coordinator responsible for the area.
** = The issuing service nominated by WMO for METAREA services, responsible for the area.

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ANNEX 2

DRAFT WORK PLAN

**Review and Modernization of the
Global Maritime Distress and Safety System (GMDSS)**

Introduction

1 This draft Work Plan contains the final outcome of the consideration of the planned output on a Scoping exercise to establish the need for a review of the elements and procedures of the GMDSS undertaken by the COMSAR Sub-Committee, and has been developed in accordance with the Guidelines on the organization and method of work of the Committees (MSC-MEPC.1/Circ.4), taking into account the High-level Action Plan for the Organization and priorities for the 2010-2011 biennium (resolution A.1038(27)). The objective of the draft Work Plan is to justify the request for a new unplanned output on "Review and modernization of the Global Maritime Distress and Safety System" with a target completion year of 2017 and to include the proposed unplanned output in the biennial agenda of the COMSAR, NAV and STW Sub-Committees and in the provisional agenda for COMSAR 17.

2 The agenda item is to review the Global Maritime Distress and Safety System (GMDSS), and then to develop a modernization programme. The modernization programme would implement findings of the review, include more modern and efficient communications technologies in the GMDSS, and support the communications needs of the e-navigation strategy.

3 The review, with particular reference to the Human Element, will include:

a high-level review, containing as a minimum:

.1 review of the existing nine functional requirements, including:

.1 the possible need for inclusion of security-related communications in the GMDSS; and

.2 the consideration of the possible need to develop a clearer definition of "General Communications", which is continuing to cause confusion and consider if this category should be included within the requirements of the GMDSS;

.2 the need for the current order of priorities in use for radiocommunications;

.3 the future need for the four different areas of carriage requirements (Sea Areas A1 to A4), and port State control procedures if sea areas are changed;

.4 the future need to allow for differences for certain categories of ships, including non-SOLAS ships;

.5 whether distress communications should be separated from other types of communications and in consequence whether the arrangements in chapters in SOLAS could be revised (Note: chapter II, (part D – Electrical installations), chapter III (part B in several instances), chapter V in various instances including e-navigation applications);

a detailed review, containing as a minimum:

.6 the issue of training and performance of crews on board ships, considering the certification and renewal of qualifications and also noting the possible reduction of technical knowledge and skills by operators;

.7 equipment carriage requirements for duplication, maintenance, equipment interfacing, back-up support systems and power supplies;

.8 the possible inclusion of Automatic Identification System (AIS) functions;

.9 the possible inclusion of Long-range identification and tracking of ships (LRIT) functions;

.10 the possible inclusion of Ship Security and Alerting System (SSAS) functions;

.11 the role of Narrow Band Direct Printing (NBDP);

.12 the role of MF/HF Digital Selective Calling (DSC) and the complexity of some of the signaling functions;

.13 problems which might arise due to a lack of HF stations in future;

.14 the usage of satellite equipment as an alternative in Sea Areas A2 currently based around MF/HF DSC;

.15 voice communications as an integral part of the GMDSS, benefiting search and rescue operations;

.16 possible new requirements for lifeboats and liferafts, for instance to provide long-range communications;

.17 the expected evolution of satellite EPIRB systems, such as the Medium Earth Orbit Search And Rescue system (MEOSAR);

.18 the further evolution of Maritime Safety Information broadcast systems, taking into account the ongoing work in IHO and WMO;

.19 possible alignment between chapters III, IV, V and XI-2 of SOLAS, in particular with regard to type approval, secondary equipment and maintenance arrangements and their regulatory status (i.e. mandatory or discretionary);

.20 the need to indicate the facilities required for capacity-building; and

.21 assess whether to increase the use of goal-based methodologies when reviewing the regulations and regulatory framework for GMDSS in SOLAS chapters IV and V and the STCW Convention, to provide flexibility to allow the GMDSS to adapt to new and evolving technologies without major revision of the SOLAS and STCW Conventions in future.

The review should take place over a three-year period (2013-2015). The inclusion of timelines and an appreciation of workload would allow all to plan and participate. The review process is illustrated in a flow diagram in appendix A.

4 A further two-year period is envisaged (2015-2017) for the GMDSS modernization plan. This will be followed by development of legal instruments, revision/development of relevant performance standards and an implementation period.

Relationship to IMO's objectives

5 IMO's objectives are generally summarized as safe, secure and efficient shipping on clean oceans. The maritime communications system is essential to achieving all of these objectives. Information passed between ships and between ships and shore facilities ensures safe passages on the waterways of the world. In order to achieve safe, secure and efficient shipping on clean oceans, modernization of the GMDSS system is essential.

Compelling need

6 As the world continues to move into the "information age", there is a need for an ever-increasing exchange of information, but there is a finite supply of radio spectrum for wireless communications. Consequently, new services seek to use spectrum allocated to others. Existing services must use the spectrum they have been allocated in the most efficient manner. The current GMDSS is not optimized for efficient spectrum use and there is a growing demand for maritime communication resources, such as those that will result from the e-navigation initiative.

7 The GMDSS was designed over 25 years ago. There has not been a full review since its implementation in 1999 and technology has developed significantly in that time. There are GMDSS elements where improvement could be brought about, e.g. the acceptance, procedures and lack of usability and consequential usage of DSC, managing the cessation of international telex, and to examine the continued use of narrow-band direct-printing in certain sea areas. The elements that will be identified may need to be examined and reviewed as a matter of some urgency.

8 Consideration should be given to any compatibility that there may be between the GMDSS, current technologies like AIS, and new or emerging technologies that are over the horizon. The emerging e-navigation facets should also be considered, to ascertain what parts may or may not, be beneficial to this mature distress alerting and communications system.

9 It is also important that any review of the GMDSS takes into account the *raison d'être* for each of the system's elements. It is important to consider the information that is conveyed by each element of the overall system in terms of importance or criticality, which aspect of a ship's mission is it supporting, timeliness/latency, volume of data involved, and so on. The time has come for maritime communications to be redefined and thus add more value by delivering increases in safety, efficiency and quality of life for those serving at sea.

10 The use of GMDSS-compliant and GMDSS-compatible equipment on board ships is widely implemented and there is a persistent need for compatibility between SOLAS and other ships, including recreational vessels. In this regard it is noted that SOLAS chapter V has been applied generally to all ships on all voyages and that a similar approach could be taken in reviewing chapter IV. IMO has adopted a similar stance in the development of e-navigation.

Analysis of the issue

11 The GMDSS already provides for exchange of information vital for maritime safety and for certain general communications. E-navigation initiatives will create the need for additional communications capabilities. The project is intended to allow the evolution of maritime communications to meet these needs and improve service through the introduction of modern technologies. Elements to be considered include the following:

.1 Which basic communication capabilities are properly part of the GMDSS and which could become a part of the developing e-navigation concept?

.2 VHF and HF equipment might employ more modern digital technology.

.3 New developments may be employed, for instance by non-GMDSS communication providers, as well as the use of mobile phones, satellite systems, including regional satellite systems, and the possible introduction of new technologies in future.

.4 Survival craft communications, homing and locating equipment.

.5 Examination of how maritime safety information is provided to ships.

.6 Benefits of including additional satellite service providers to enter the GMDSS.

.7 Identify elements that may be phased out from current carriage requirements.

12 The following goals should be achieved without a complete redesign of the communications regime:

.1 continue to be effective for both SOLAS and non-SOLAS ships in the face of changing ship traffic patterns, patterns of use, skills, knowledge and resources;

.2 within the definition of "effective" to consider fitness for purpose, need, benefit and cost and recognize the existing investment in the GMDSS;

.3 readily able to evolve without undue burdens on administrations or industry;

.4 to take advantage, where appropriate, of changes and advances in technology;

.5 to recognize the importance of human factors in the proper use of the GMDSS;

.6 to recognize the development of e-navigation; and

.7 ensure capacity-building.

Analysis of the implications

13 Revisions to chapter IV of SOLAS may be expected, along with revised resolutions and circulars that support chapter IV. Chapter IV may become strictly goal-based, with more detailed solutions contained in one or more resolutions, or perhaps a Code as has been done with SOLAS chapters II-2 and III.

14 Impact analysis and evaluation of cost implications resulting from amendments to legislation, administration changes, and modernization of the facilities and technologies within the GMDSS need to be undertaken, taking into account the facilities required for capacity-building.

15 The e-navigation initiative will need to focus on the challenge of keeping shipboard systems up to date, error-free and securely implemented. The GMDSS will also need to examine this issue. Convergence of technologies may require a similar approach to some GMDSS elements. The existing system of standards setting may not be suitable in all cases to all elements of a modernized GMDSS, due to the rapid change and increasing use of software-based systems.

Benefits

16 Do the benefits vis-à-vis enhanced maritime safety, maritime security or protection of the marine environment expected to be derived from the inclusion of the new item proposed justify such action?

.1 Evolving technology and e-navigation applications will continue to drive change in the maritime communications system. With or without a GMDSS modernization plan, shore facilities and ship operators will have more economical and efficient choices for exchanging the information they need for the safe operation of ships. Unless the GMDSS can evolve to include these technologies, ship operators may find themselves carrying obsolete equipment for the sole purpose of meeting a SOLAS requirement. In addition, if future advances are not well controlled there is a risk that increasing complexity will cause incompatibility between equipment, in turn resulting in decreased availability and adverse safety outcomes.

.2 It may be that the review will confirm that enhanced safety, response to alerts and follow-up communications, especially in the Polar Regions, could be attained by the integration of newer technologies and existing systems.

.3 The examination of the technology used for the provision of maritime safety information may result in alternative proposals to allow for more rapid dissemination of maritime safety information.

.4 The e-navigation strategy and the pulling together of some of the salient strands within this visionary introduction of technology and systems, together with the GMDSS and its mature existing technologies, can only lead to overall improvement in safety and efficiency. Enhanced use of allocated spectrum can only be of benefit where the provision in some areas is congested and in others underutilized and where, internationally, the assignment becomes more competitive. Current and emerging technologies could also be investigated so that more efficient use of spectrum would be provided.

.5 The key benefits of the proposed actions would be to all seafarers, shore communications providers, rescue coordination centres, shipowners and managers, surveyors, training establishments, those involved in the provision of maritime communications equipment, classification societies and regulators. The proposed actions aim to ensure that the GMDSS continues to be fit for purpose for the 21st century, to allow modern technologies to be incorporated into the GMDSS, thus enhancing and improving safety of life at sea.

.6 The benefits that are expected to emerge, include enhancement of safety in general, and navigation safety in particular, security, environmental protection and general communications for the industry, while mariners would benefit from a GMDSS that is fully modern and responsive to user needs.

Industry standards

17 IMO has a close relationship with the United Nations Specialized Agency, the International Telecommunications Union (ITU), and has formed a Joint Experts Group with ITU to ensure close coordination on revisions required to the Radio Regulations and associated ITU Recommendations.

18 IMO has the benefit of a close relationship with the International Electrotechnical Commission (IEC), and IEC Technical Committee 80 (TC 80), Maritime navigation and radiocommunication equipment and systems. TC 80 has continued to develop standards as required, throughout the existence of the GMDSS. Standards, during review, are improved to reflect technological advancement and improvement. It is unlikely that new standards will be needed for existing technologies, however, some existing technology standards will require to be revised into the future (examples could include AIS, DSC, VHF radio, EPIRBs and LRIT equipment), but the continued support of TC 80 may be expected for new technologies, as required.

19 IMO also has a close relationship with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). IALA has actively contributed to the development of e-navigation strategy and development and maintenance of ITU-R Recommendations, and also publishes IALA Recommendations, guidelines and other useful documents for ship and shore facilities including GMDSS.

Output

20 The intended output is described in SMART terms (specific, measurable, achievable, realistic, time-bound):

.1 Specific – A review will be completed first, followed by a GMDSS Modernization Plan leading to development of new and/or revised instruments.

.2 Measurable – The project is measurable in terms of meeting its time goals.

.3 Achievable – The involved subsidiary bodies of the Committee have the expertise to complete the project, and have appropriate liaisons with outside bodies such as ITU, IEC and IALA to complete the work.

.4 Realistic – There are no technological reasons why the project cannot be completed.

.5 Time-bound – COMSAR 19 is to complete the review at its (expected) March 2015 meeting. The Modernization Plan is to be completed at the (expected) COMSAR 21 meeting in 2017, but possibly earlier depending upon the amount of intersessional work that can be completed.

Human element

21 See the MSC-MEPC.7/Circ.1 checklist in appendix B. The Human Element will be embodied in the process from the beginning to ensure the technology is fit for purpose. The checklist is designed to review projects at their completion, so the marks on the checklist indicate the anticipated outcome. The checklist should be reviewed at the completion of the project.

Priority/Urgency

22 How is the proposed item related to the scope of the Strategic Plan for the Organization and how does it fit into the High-level Action Plan? With reference to resolution A.1038(27), the following elements of the High-level Action Plan are related to the GMDSS Modernization project:

5.1 Ensuring that all systems related to enhancing the safety of human life at sea are adequate, including those concerned with large concentrations of people:

5.1.2 Development and review of safe evacuation, survival, recovery and treatment of people following maritime casualties or in case of distress.
GMDSS communications play a vital role in distress response.

5.1.3 Enhance the safety of navigation in vital shipping lanes
GMDSS communications are essential to safe navigation and will play a key role in the implementation of the e-navigation strategy.

5.2 Enhancing technical, operational and safety management standards:

5.2.1 Keep under review the technical and operational safety aspects of all types of ships, including fishing vessels.
The GMDSS Modernization project will be the first comprehensive review of the GMDSS since its development 25 years ago. Fishing vessels must have communication systems compatible with the GMDSS.

5.2.4 Keep under review measures to improve navigational safety, including ships' routeing, ship reporting systems, vessel traffic services, requirements and standards for shipborne navigational aids and systems and Long-range identification and tracking of ships (LRIT).
GMDSS communications are essential to safe navigation and will play a key role in the implementation of the e-navigation strategy.

5.2.5 Monitor and evaluate the operation of the Global Maritime Distress and Safety System (GMDSS).
The GMDSS Modernization project will be the first comprehensive review of the GMDSS since its development 25 years ago.

5.2.6 Development and implementation of the e-navigation strategy *GMDSS communications are essential to safe navigation and will play a key role in the implementation of the e-navigation strategy.*

10 IMO will apply goal-based standards for maritime safety:

10.1 Further develop measures to apply goal-based standards for maritime safety and environmental protection.
GMDSS regulations already employ goal-based standards (see SOLAS regulation IV/4). The Modernization project will consider further application of the concept.

23 Target completion date: 2017 (2016 with extensive intersessional work).

24 Timescale needed for the IMO organ to complete the work:

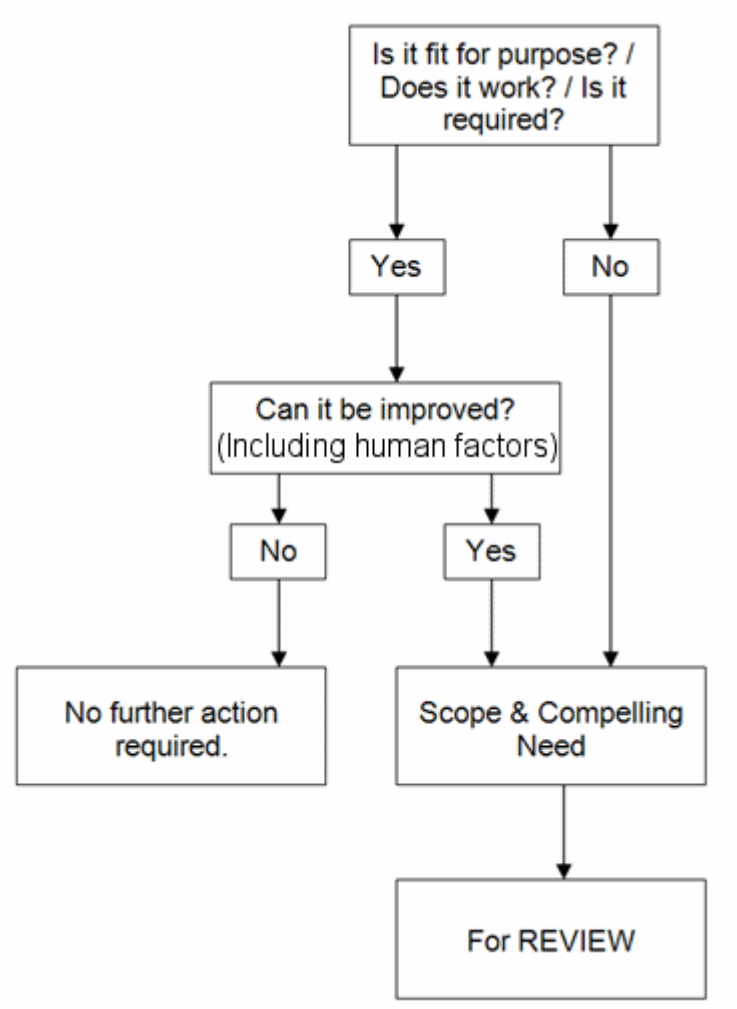
A project schedule is in appendix 3.

* * *

APPENDIX 1

REVIEW PROCESS

A simple process for the review is offered in the following flow diagram. The intent is to develop a simple statement of compelling need and implications for each of the review subjects.



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APPENDIX 2

CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

Instructions: If the answer to any of the questions below is: (A) **YES**, the preparing body should provide supporting details and/or recommendation for further work. (B) **NO**, the preparing body should make proper justification as to why human element issues were not considered. (C) **NA** (Not Applicable), the preparing body should make proper justification as to why human element issues were not considered applicable.	
Subject Being Assessed: (e.g. Resolution, Instrument, Circular being considered) Review and modernization of the GMDSS	
Responsible Body: (e.g. Committee, Sub-committee, Working Group, Correspondence Group, Member State) Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), and Sub-Committee on Standards of Training and Watchkeeping (STW) (Human element aspect)	
1. Was the human element considered during development or amendment process related to this subject?	☑Yes ☐No ☐NA
2. Has input from seafarers or their proxies been solicited?	☑Yes ☐No ☐NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	☐Yes ☑No ☐NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	☑Yes ☐No ☐NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	
• Administrations?	☑Yes ☐No ☐NA
• Shipowners/managers?	☑Yes ☐No ☐NA
• Seafarers?	☑Yes ☐No ☐NA
• Surveyors?	☑Yes ☐No ☐NA
6. At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	☑Yes ☐No ☐NA
7. Does the solution address safeguards to avoid single person errors?	☑Yes ☐No ☐NA
8. Does the solution address safeguards to avoid organizational errors?	☑Yes ☐No ☐NA
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	☑Yes ☐No ☐NA
10. Have human element experts been consulted in development of the solution?	☑Yes ☐No ☐NA
11. **HUMAN ELEMENT**: **Has the proposal been assessed against each of the factors below?**	
☐ CREWING. The number of qualified personnel required and available to safely operate, maintain, support, and provide training for system.	☑Yes ☐No ☐NA
☐ PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	☑Yes ☐No ☐NA
☐ TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills, and abilities to achieve desired job/task performance.	☑Yes ☐No ☐NA
☐ OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc., to properly manage risks.	☑Yes ☐No ☐NA
☐ WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health, and comfort of those on working on board, such as noise, vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	☑Yes ☐No ☐NA

☐ HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury, or death in a catastrophic event such as fire, explosion, spill, collision, flooding, or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	☑Yes ☐No ☐NA
☐ HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive, and sensory abilities of the user population.	☑Yes ☐No ☐NA
Comments: (1) Justification if answers are NO or Not Applicable. (2) Recommendations for additional human element assessment needed. (3) Key risk management strategies employed. (4) Other comments. (5) Supporting documentation. It is anticipated that certain existing instruments will need to be revised.	

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APPENDIX 3

PROPOSED PLAN OF WORK FOR THE GMDSS REVIEW AND MODERNIZATION PROJECT

Coordinated Timeline and Planned Outputs for the GMDSS Review and Modernization Project				
Y	**Q**	**Meeting**	**Output**	**Year deliverable**
2012	**2**	MSC 90	Approval of Work Plan, along with a new unplanned output on the "Review and modernization of the GMDSS' Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
	2		Correspondence Group begins GMDSS Review in preparation for COMSAR 17	
	3	NAV 58	Provide contributions from e-navigation perspective	
	3		Correspondence Group provides its report to JEG 8	
	4	19th ICAO/IMO Joint Working Group on SAR (JWG 19)	Reviews the report of COMSAR 16 and, in particular, the Work Plan and provides recommendations in relation to the High level review to COMSAR 17	
	4	8th Joint IMO/ITU Experts Group (JEG 8)	Reviews the report of the Correspondence Group and the outcome of NAV 58 and reports to COMSAR 17	First draft of High-level review completed
	4	MSC 91	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
2013				
	1	COMSAR 17	Continues GMDSS review, taking into account contributions of Correspondence Group, NAV 58, JWG 19 and JEG 8 and completes the High level review Re-establish Correspondence Group to prepare relevant input for COMSAR 18	• First draft of High-level review discussed by COMSAR 17
	1	STW 44	Reviews report of COMSAR 17 and MSC 90 Provide contributions from STCW and human element perspective	
	2	MSC 92	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	• Draft High-level review completed and First outline of the detailed review
	3	NAV 59	Reviews report of COMSAR 17 Provide contributions from e-navigation perspective	
	3		Correspondence Group provides interim report to JEG 9	
	3	JEG 9	Reviews the interim report of the Correspondence Group and the outcome of NAV 59 and provides recommendations to Correspondence Group and COMSAR 18	
	4	JWG 20	Reviews report of COMSAR 17 and provides recommendations to COMSAR 18	

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Coordinated Timeline and Planned Outputs for the IMO GMDSS Modernization Project

Y	Q	Meeting	Output	Year deliverable
2014	1		Correspondence Group reports to COMSAR 18	• High-level review approved by COMSAR 18 • Draft detailed review completed
	1	STW 45	Reviews report of COMSAR 17 Provide contributions from STCW and human element perspective	
	1	COMSAR 18	Continues GMDSS review taking into account reports of Correspondence Group, NAV 59, JEG 9, JWG 20 and STW 45 Re-establish Correspondence Group to prepare relevant input for COMSAR 19	
	2	MSC 93	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
	3	NAV 60	Reviews report of COMSAR 18 Provide contributions from e-navigation perspective	
	3		Correspondence Group provides interim report to JEG 10	
	3	JEG 10	Reviews the interim report of the Correspondence Group and the outcome of NAV 60 and provides recommendations to Correspondence Group and COMSAR 19	
	4	JWG 21	Reviews report of COMSAR 18 and provides recommendations to COMSAR 19	
	4	MSC 94	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
2015	1		Correspondence Group reports to COMSAR 19	• Detailed review endorsed by COMSAR 19 and approved by MSC 95 • First outline of the Modernization Plan
	1	STW 46	Reviews report of COMSAR 18 Provide contributions from STCW and human element perspective	
	1	COMSAR 19	Completes the GMDSS review, taking into account contributions of Correspondence Group, NAV 60, JEG 10, JWG 21 and STW 46, and begins to discuss the development of the GMDSS Modernization Plan Re-establish Correspondence Group to prepare relevant input for COMSAR 20	
	2	MSC 95	Reviews report of COMSAR 19 and approves (1) the outcome of the GMDSS review and (2) the continuation of the project in developing the Modernization Plan Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
	3	NAV 61	Reviews report of COMSAR 19 and MSC 95 Provide contributions from e-navigation perspective	
	3		Correspondence Group provides interim report to JEG 11	
	3	JEG 11	Reviews the interim report of the Correspondence Group and NAV 61 and provides recommendations to Correspondence Group and COMSAR 20	
	4	JWG 22	Reviews report of COMSAR 19 and provides recommendations to COMSAR 20	

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Coordinated Timeline and Planned Outputs for the IMO GMDSS Modernization Project				
Y	**Q**	**Meeting**	**Output**	**Year deliverable**
2016	**1**		Correspondence Group reports to COMSAR 20	• Draft Modernization Plan completed
	1	STW 47	Reviews report of COMSAR 19 and MSC 95 Provide contributions from STCW and human element perspective	
	1	COMSAR 20	Continues development of GMDSS Modernization Plan, taking into account reports of MSC 95, Correspondence Group, NAV 61, JEG 11, JWG 22 and STW 47 Re-establish Correspondence Group to prepare relevant input for COMSAR 21	
	2	MSC 96	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
	3	NAV 62	Reviews report of COMSAR 20 Provide contributions from e-navigation perspective	
	3		Correspondence Group provides interim report to JEG 12	
	3	JEG 12	Reviews interim report of the Correspondence Group and NAV 62 and provides recommendations to the Correspondence Group and COMSAR 21	
	4	JWG 23	Reviews report of COMSAR 20 and provides recommendations to COMSAR 21	
	4	MSC 97	Coordination meeting of Chairmen of COMSAR, NAV, STW, and Secretariat	
2017	**1**		Correspondence Group reports to COMSAR 21	• Modernization Plan endorsed by COMSAR 21 and approved by MSC 98
	1	STW 48	Reviews report of COMSAR 20 Provide contributions from STCW and human element perspective	
	1	COMSAR 21	Completes GMDSS Modernization Plan taking into account reports of Correspondence Group, NAV 62, JEG 12, JWG 22 and STW 47 Provides Final Report to MSC 98	
	2	MSC 98	Reviews report of COMSAR 21 Acts on Final GMDSS Modernization Plan	

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ANNEX 3

TERMS OF REFERENCE FOR THE CORRESPONDENCE GROUP ON THE REVIEW OF THE GMDSS

After the approval by MSC 90 (16 to 25 May 2012) of the Work Plan and the new unplanned output on the "Review and modernization of the Global Maritime Distress and Safety System" for the COMSAR Sub-Committee, and the inclusion of this agenda item on the agenda of COMSAR 17, the Correspondence Group on the Review of the GMDSS, taking into account the approved Work Plan, should:

.1 develop, in particular, the draft High-level review of the GMDSS; and

.2 submit its report by Friday, 21 September 2012, to the Joint IMO/ITU Experts Group (8 to 12 October 2012) for its consideration and finalization of the draft High-level review of the GMDSS for submission to COMSAR 17.

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ANNEX 4

DRAFT MSC CIRCULAR

GUIDANCE TO PROSPECTIVE GMDSS SATELLITE SERVICE PROVIDERS

1 The Maritime Safety Committee, at its [ninetieth session (16 to 25 May 2012)], approved the attached Guidance to prospective GMDSS satellite service providers, prepared by the Sub-Committee on Radiocommunications and Search and Rescue, at its sixteenth session.

2 The purpose of this circular is to provide guidance with respect to the provisions of resolution A.1001(25) on Criteria for the provision of mobile satellite communication systems in the Global Maritime Distress and Safety System (GMDSS).

3 Member Governments are invited to bring this Guidance to the attention of all parties concerned.

* * *

ANNEX

GUIDANCE TO PROSPECTIVE GMDSS SATELLITE SERVICE PROVIDERS

INTRODUCTION

1 Assembly resolution A.1001(25) provides the adopted criteria for the provision of mobile satellite communication systems in the Global Maritime Distress and Safety System (GMDSS) and requests the Maritime Safety Committee to:

(a) apply the criteria set out in the annex to the present resolution, through the procedure set out in section 2 of the annex, to evaluate satellite systems notified by Governments for possible recognition for use in the GMDSS, within the context of the relevant regulations of SOLAS chapter IV; and

(b) ensure that mobile satellite communication systems recognized by the Organization for use in the GMDSS are compatible with all appropriate SOLAS requirements, and also that such recognition takes into account existing operational procedures and equipment performance standards.

2 The Maritime Safety Committee, at its eighty-eighth session agreed on the need to further study the implementation of the concept of regional satellite systems in the GMDSS and instructed the COMSAR Sub-Committee to consider the matter under its agenda item "Scoping exercise to establish the need for a review of the elements and procedures of the GMDSS". As a result, the COMSAR Sub-Committee developed this Guidance to prospective GMDSS satellite service providers with respect to the provisions of resolution A.1001(25).

BACKGROUND

3 Section 2 of Assembly resolution A.1001(25) provides information and guidance on the recognition for mobile satellite communications systems for use in the GMDSS. It includes some key provisions, as follows:

.1 The evaluation and recognition of satellite systems participating, or wishing to participate in the GMDSS are undertaken by the Organization;

.2 Satellite system providers wishing to participate in the GMDSS should apply to the Organization, through a Member State;

.3 Such applications should be notified to the Organization by Governments;

.4 The application will be reviewed by the Maritime Safety Committee (the Committee);

.5 If the Committee decides that there are no objections in principle to the application, it will forward the application to the COMSAR Sub-Committee for evaluation;

.6 Recognition of the satellite provider to operate in the GMDSS will be undertaken by the Committee on the basis of the evaluation report;

.7 The governments concerned should make available to the Organization all necessary information to enable it to evaluate the satellite system in relation to the criteria;

.8 Governments proposing such satellite systems for possible recognition and use in the GMDSS should provide evidence to show that:

.1 the satellite system conforms with all the criteria specified in (resolution A.1001(25));

.2 the charging policies and provisions of resolution A.707(17), as amended, on Charges for distress, urgency and safety messages through the Inmarsat system, are complied with;

.3 there is a well-founded confidence that the company concerned will remain viable for the foreseeable future, that the company has a well-organized quality and risk management programme, and that the company will remain in a position to deliver the required services over an extended period; and

.4 the provider of the satellite system is ready to submit any recognized services to oversight by IMSO and sign the required Public Services Agreement (PSA) with that organization; and

.9 The COMSAR Sub-Committee should verify and evaluate the information, seeking clarification as required direct from the service provider concerned, and decide whether the satellite system meets the criteria established by resolution A.1001(25).

4 The main questions requiring additional guidance to these provisions of resolution A.1001(25) are:

.1 What constitutes: "… all necessary information …";

.2 Must a satellite system offer full global coverage in order to be considered for participation in the GMDSS;

.3 Should the proposing government(s) accept responsibility for the accuracy and completeness of the information provided;

.4 On what basis can the proposing government(s) and the Organization establish "… *a well-founded confidence that the company concerned will remain viable for the foreseeable future …*";

.5 How does the COMSAR Sub-Committee undertake its evaluation and produce an evaluation report; and

.6 How can the evaluation and recognition process be accomplished within a timescale that coincides with the commercial realities of successful and proper Company administration and management?

These questions are addressed in the following paragraphs:

WHAT CONSTITUTES: "… ALL NECESSARY INFORMATION …"?

5 The information and evidence that will be necessary for a full and comprehensive evaluation of any submission to be carried out is very wide-ranging and quite detailed. Experience of designing, implementing and operating the present satellite-based elements of the GMDSS, and evaluating their initial and continuing operational and other capabilities, has shown that it will not be sufficient, for example, to accept a plain statement such as: "the system can deliver a distress alert to an RCC within 60 seconds of it being originated". In such a case, in order to provide an assurance to the Committee that the candidate system will meet this target reliably on a high percentage of occasions, the evaluation would need to take into account such diverse factors as:

.1 Spectrum: frequency band; type of allocation; reliability of signalling in this band; etc.

.2 Constellation: number and arrangement of satellites; link budget; number of on-orbit spares required and provided; inter-satellite hand-offs; etc.

.3 Ground segment: number and geographical disposition of ground stations, satellite and communication network control arrangements; contingency arrangements in the event of satellite or network failures; availability; time of contingency service restoration; communication links to RCCs; distress alert distribution arrangements; message prioritization; personnel availability, shift patterns, training; etc.

.4 Mobile terminals: design, manufacture and market availability; test procedures and type approval, IEC compliance; capabilities; signalling modes and protocols; ship installation guidelines and arrangements; etc.

.5 Live end-to-end system and contingency tests.

.6 Availability, performance and arrangement comparable to existing GMDSS satellite services, including Maritime Safety Information.

This list is not fully comprehensive. However, it serves to illustrate the complexity of the consideration when evaluating submissions from potential additional satellite system providers for participation in the GMDSS under the requirements of resolution A.1001(25).

MUST A SATELLITE SYSTEM OFFER FULL GLOBAL COVERAGE IN ORDER TO BE CONSIDERED FOR PARTICIPATION IN THE GMDSS?

6 According to section 1.3 of resolution A.1001(25), the Coverage Area of the satellite system is the geographical area within which the satellite system provides an availability in accordance with the criteria stated in section 3.5 in the ship-to-shore and shore-to-ship directions, and within which continuous alerting is available. Section 3.5, dealing with availability, states among others that the satellite system should provide continuous availability for maritime distress and safety communications in the ship-to-shore and shore-to-ship directions.

If the system(s) which a ship is licensed to use does not offer full global coverage, administrations will need to devise a means of matching the ship's distress and safety radio capabilities with the regions of the world in which she is permitted to operate.

In this context, it is important to note that satellite systems forming part of the GMDSS should provide capabilities for all the nine maritime distress and safety communications functions specified by chapter IV, regulation 4.

SHOULD THE PROPOSING GOVERNMENT(S) ACCEPT RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF THE INFORMATION PROVIDED?

7 Individual proposing Member States are unlikely to be able to endorse technical, operational and financial statements made by a potential satellite system provider for the GMDSS, as required by paragraph 2.2.2 of the annex to resolution A.1001(25), to the breadth and depth necessary for the Committee to reach an informed decision on an application.

8 With this in mind, the COMSAR Sub-Committee should be provided with an in-depth Technical and Operational Assessment report, on which to base its evaluation and any recommendation to the Committee.

9 The universal credibility of the Technical and Operational Assessment will require that any applicant satellite communications system operator provides hard, incontrovertible evidence, including suitable metrics wherever appropriate, in support of its application. Although the sufficiency and accuracy of the evidence provided should be assured by the submitting Member State(s) before any such application is forwarded for consideration by the Committee, it is likely that both the Company and Member State representatives will need to discuss the evidence and liaise with those conducting the Assessment before the evidential submission is completed.

ON WHAT BASIS CAN THE PROPOSING GOVERNMENT(S) AND THE ORGANIZATION ESTABLISH "… ***A WELL-FOUNDED CONFIDENCE THAT THE COMPANY CONCERNED WILL REMAIN VIABLE FOR THE FORESEEABLE FUTURE …*****"?**

10 The evaluation of a potential applicant company in relation to the requirement that "there is a well-founded confidence that the company concerned will remain viable for the foreseeable future and will remain in a position to deliver the required services over an extended period" poses particular difficulties. Financial regulations and laws in many countries prevent companies from making the kind of forward-looking statements that could assist the Committee in this regard, and any publicly owned company is entirely subject to the vagaries of the stock markets. Therefore, it is recommended that the proposing government(s) should be the only entity(ies) that should make a statement to the Committee in relation to this requirement, and such a statement might probably only be phrased in terms of the requirement itself. For instance, it could be stated that the provider has been providing services for […] years, is a going concern, and that there is no reason to believe that the provider would not be able to continue to do so.

HOW DOES THE COMSAR SUB-COMMITTEE UNDERTAKE ITS EVALUATION AND PRODUCE AN EVALUATION REPORT?

11 Given the complexity of the Technical and Operational Assessment, the technical and operational experience required, the probable need for a dialogue between the assessors and the company concerned, and the time required to achieve a sufficient understanding of all the factors affecting the probable performance of an applicant satellite system, the Technical and Operational Assessment report used to inform COMSAR's evaluation could be produced by an independent body which can report directly to the COMSAR Sub-Committee. IMSO would need to undertake that work in any case, in order for it to acquire the system-specific knowledge necessary for it to be able to oversee the

performance of any successful applicant satellite system, once it is approved for participation in the GMDSS. It is, therefore, expected that the Committee would request IMSO to undertake the Technical and Operational Assessment and produce the report.

HOW CAN THE EVALUATION AND RECOGNITION PROCESS BE ACCOMPLISHED WITHIN A TIMESCALE THAT COINCIDES WITH THE COMMERCIAL REALITIES OF SUCCESSFUL AND PROPER COMPANY ADMINISTRATION AND MANAGEMENT?

12 Given that resolution A.1001(25) establishes that the application and decision are matters for the Committee, and evaluation is to be done by the COMSAR Sub-Committee, the procedure cannot be accomplished in less than one year. Some specimen processes are summarized in the following table:

YEAR			Worst Case	Fast Track A	Fast Track B
1	Mar	COMSAR			
	May	MSC	Application		
	Nov	MSC		Application	
2	Mar	COMSAR	Evaluation	Evaluation + Report	
	May	MSC		Decision + MSC Resolution	Application
	Nov	ASSEMBLY			
3	Mar	COMSAR	Report		Evaluation + Report
	May	MSC	Decision		Decision + MSC Resolution
	Nov	MSC			

The table shows that, in the Worst Case, it could be possible for the review, evaluation and decision procedure to take up to two-and-a-half years, even without any need to revert to the applicant with a request for further detail or explanation. This would be extremely likely to deter potential commercial satellite system operators from applying to become involved in the GMDSS. The Fast Track requires that the COMSAR Sub-Committee undertake the evaluation and complete its report in one session, and that the evaluation report and recommendation are sent to the next session of the Committee for consideration as an Urgent Matter. The Fast Track takes either 12 or six months depending on whether the application is made in an Assembly year or not. It may be concluded that Fast Track A is unlikely to be achieved.

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ANNEX 5

LIAISON STATEMENT TO ITU-R WORKING PARTY 5B

WORK PLAN ADOPTED FOR REVISION OF RECOMMENDATION ITU-R M.493-13

Digital selective-calling system for use in the maritime mobile service

IMO would like to thank ITU-R WP 5B for the liaison statement concerning the work plan for revision of Recommendation ITU-R M.493-13 (annex 39 to document 5B/727).

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its sixteenth six session (12 to 16 March 2012), very much appreciated the work carried out by WP 5B in establishing a work plan for revision of this recommendation. The Sub-Committee would like to express its concerns about the high number of revisions of this recommendation over the past years, and believe that the work plan could assist in reducing the frequency of revisions in the coming years.

The COMSAR Sub-Committee would like to express its support for the proposed course of action as indicated in the liaison statement.

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ANNEX 6

LIAISON STATEMENT TO ITU-R WORKING PARTY 5B

REGARDING RECOMMENDATION ITU-R M.493-13

IMO would like to thank ITU-R WP 5B for the liaison statement as contained in annex 15 to document 5B/810, sent in November 2011, concerning revision of Recommendation ITU-R M.493-13 and noted the request from ITU-R WP5B for clarification on some specific operational issues related to this recommendation.

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its sixteenth session (12 to 16 March 2012), has considered the issues raised and the conclusions are reflected for each of the three items: Display, Distress button and Handheld equipment.

Display

The possible need for revision of resolution MSC.68(68) in relation to minimum number of characters, etc., is noted.

The proposal for inclusion of radio communications equipment within the scope of resolution MSC.191(79) "Performance Standards for the presentation of navigation-related information on shipborne navigational displays" is also noted.

The COMSAR Sub-Committee is of the opinion that harmonization of requirements for the displays on the bridge of a ship would be beneficial for the user and consequently for the safe navigation and operation of ships.

The COMSAR Sub-Committee has invited interested Member Governments to submit proposals to the Maritime Safety Committee for a new unplanned output concerning the revision of resolution MSC.191(79).

Distress button

The COMSAR Sub-Committee noted the proposal from ITU-R WP 5B regarding the procedure for sending a designated distress alert.

The COMSAR Sub-Committee also noted that the current wording of MSC/Circ.862 provokes different interpretations of whether the methods mentioned are acceptable.

Since there are different views regarding the procedure, the COMSAR Sub-Committee is of the view that further consideration is required. The COMSAR Sub-Committee has invited interested Member Governments to submit proposals to the Maritime Safety Committee for a new unplanned output concerning the revision of MSC/Circ.862.

DSC handheld VHF equipment

The COMSAR Sub-Committee considered the observation expressed by ITU-R WP 5B concerning the possibility for adding functionality to DSC handheld VHF equipment apart from the functions referred to in the Liaison statement to ITU-R WP 5B and CIRM (Proposed new "DSC Class H" of DSC portable radio intended primarily for distress alerting

and communication), as laid down in annex 3 of document COMSAR 13/14 and ITU document 5B/191.

The COMSAR Sub-Committee has made a brief review of the list of functions and has decided that the information previously communicated on the subject remains valid.

The COMSAR Sub-Committee has invited interested Member Governments to submit proposals to the Maritime Safety Committee for a new unplanned output concerning the revision of the functionalities of DSC handheld VHF radios.

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ANNEX 7

LIAISON STATEMENT TO ITU-R WORKING PARTIES 5B AND 7C

PROPOSED CHANGES TO RECOMMENDATIONS ITU-R M.824-3 AND ITU-R M.1176 AND WRC-15 AGENDA ITEM 1.12 AND RESOLUTION COM 6/18

Use of the frequency range 9200-9500 MHz for Maritime Radionavigation

1 IMO would like to thank ITU-R WP 5B for the liaison statement as contained in annex 14 to document 5B/810, sent in November 2011, providing the information that, due to increased use of the band 9200-9300 MHz for marine radionavigation, the frequency range identified in the proposed revisions of Recommendations ITU-R M.824-3 and ITU-R M.1176 has been extended from 9300-9500 MHz to 9200-9500 MHz.

2 The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its sixteenth session from 12 to 16 March 2012, considered the liaison statement and fully endorsed the view of WP 5B to extend the frequency range to 9 200-9 500 MHz.

3 The Sub-Committee noted that WRC-15 is to consider under its agenda item 1.12 extending the current worldwide allocation for the Earth exploration-satellite (active) service in the frequency band 9300-9900 MHz by up to 600 MHz within the frequency bands 8700-9300 MHz and/or 9-900-10500 MHz, in accordance with resolution COM 6/18 (WRC-12). Resolution COM 6/18 (WRC-12) recognizes that the maritime radionavigation service operates in the frequency band 9200-9500 MHz and is used by safety service systems.

4 In this regard, ITU-R WP 5B is encouraged to safeguard the interests of the maritime radionavigation service when participating in ITU-R studies in relation to WRC-15 Agenda item 1.12. Considering that this matter also concerns ITU-R WP 7C, the Sub-Committee agreed to send this liaison statement for their appropriate consideration.

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ANNEX 8

DRAFT REVISED MSC CIRCULAR

GUIDE FOR COLD WATER SURVIVAL

1 The Maritime Safety Committee, at its [ninety-first session (26 to 30 November 2012)], taking into account the considerable medical progress which has been made in recent years, approved the revision of MSC.1/Circ.1185 on the Guide for cold water survival, prepared by the Sub-Committee on Radiocommunications and Search and Rescue, at its sixteenth session (12 to 16 March 2012), as set out in the annex.

2 Member Governments and international organizations are invited to bring the annexed Guide to the attention of all concerned.

3 This circular supersedes MSC.1/Circ.1185.

* * *

ANNEX

GUIDE FOR COLD WATER SURVIVAL

1 Introduction

This guidance is intended primarily for seafarers. It provides information which will help you if you are unlucky enough to fall into cold water, or have to enter it in an emergency, or have to use survival craft in cold conditions. It also provides information which will help seafarers, trained as first-aid providers, to treat those rescued from cold conditions.

This guide briefly examines the hazards of exposure to the cold that may endanger life, and provides advice based on the latest medical and scientific opinion on how to prevent or minimize those dangers. It is a sad fact that people continue to die at sea through a lack of this knowledge. Knowing what is likely to happen if you are exposed to cold water is a survival aid in itself. A thorough understanding of the information contained in this booklet may some day save your life – or someone else's.

It is most important to realize that you are not helpless to affect your own survival in cold water. Understanding your body's response and simple self-help techniques can extend your survival time, particularly if you are wearing a lifejacket. *You* can make a difference; this guide is intended to show you how.

The guidance is laid out as follows:

- an explanation of *cold water hazards and their effects*

  followed by sections on:

- actions to be taken *prior to abandoning* your ship that will improve your chances of survival

- actions to be taken during *the survival phase*, whether in survival craft or in the water

- *the rescue phase*

- *treatment of people recovered* from cold water or from survival craft in cold conditions

- *treatment of the apparently dead*.

2 Cold water hazards and their effects: knowledge that can improve survival chances

An understanding of how your body reacts to cold air or water exposure, and knowing the steps you can take to help your body delay the damaging effects of cold stress, will help you stay alive.

If you need to abandon your ship you should, if possible, avoid going into cold water at all. Cold water represents a much greater risk than cold air, partly because water takes heat away from the body much faster than air. Human beings cool four to five times faster in water

than in air at the same temperature – and the colder the water is the more likely it is that you will suffer the physical reactions and medical problems described below. Therefore, you should try to enter survival or rescue craft directly, without entering the water.

The major threats of cold water immersion are:

- drowning
- hypothermia[1]
- collapse just before, during, or after rescue.

Four stages of immersion have been identified. Each is associated with particular risks, and it helps to understand these and so be better able to deal with them.

Initial responses to immersion in cold water may include:

- inability to hold your breath
- an involuntary gasp, followed by uncontrollable breathing
- increased stress placed on your heart.

These responses are caused by the sudden fall in skin temperature. *It is important to remember that they will last only about three minutes and will then ease.* Remember too that, at this stage:

- the fitter you are, the smaller the initial responses to cold water immersion and the smaller the chance of you experiencing heart problems

- wearing an appropriate lifejacket, properly fitted, will decrease the risk by helping to keep your airway clear of the water and reducing the need for you to exercise during this critical period

- wearing appropriate protective clothing will also decrease the risk by slowing the rate of skin cooling and thereby the size of the initial responses

- if you experience initial responses you should stay still for the first few minutes of immersion, doing as little as possible until you have regained control of your breathing: a lifejacket or other source of buoyancy will help you do this

- the period of possible self-rescue starts immediately after the initial responses (if experienced), and before hypothermia sets in.

Short term immersion effects follow the initial responses. During this phase cooling of the muscles and nerves close to the surface of the skin – particularly in the limbs – can lead to inability to perform physical tasks. Swimming ability will be significantly impaired. (Swimming accelerates the rate of cooling in any event.) It follows that:

- essential survival action that requires grip strength and/or manual dexterity – such as adjusting clothing or your lifejacket, or locating a lifejacket whistle or

[1] By medical convention clinical hypothermia is considered present when the "deep", or "core", body temperature falls below 35°C (95°F): that is, when about 2°C (3.5°F) has been lost. With continued cooling consciousness will be progressively impaired and then lost; eventually death will follow. However, in cold water death from hypothermia itself is relatively rare. More of a threat is the loss of heat from the muscles: incapacitation may then lead to the casualty being unable to keep their airway – the mouth and/or nose – clear of the water, so that they drown. Hence the importance of being well clothed and wearing a correctly fitted and adjusted lifejacket.

turning on a light, for example – should be taken as soon as possible after the initial responses to cold water immersion have passed

- you should not attempt to swim unless it is to reach a fellow survivor or a nearby shore, craft, or other floating object onto which you can hold or climb.

Stay calm. Evaluate your options. Can you reach a shore or floating object – knowing that your swimming ability will be less than normal? If not, stay where you are, conserve body heat (see below), and await rescue.

Long-term immersion effects include a fall in deep body temperature (a cooling of your vital organs such as your heart, lungs and brain) to hypothermic levels. However, the rate at which your deep body temperature falls depends on many factors, including the clothing you are wearing, your physique, and whether or not you exercise in the water – by swimming, for example. Your temperature will fall more slowly if you:

- wear several layers of clothing, including head covering – especially under a waterproof outer layer such as an immersion suit

- keep still – this is greatly facilitated by wearing a lifejacket.

The rescue phase is the fourth stage of immersion you should focus on. A significant percentage of people die just before they are rescued; during their rescue; or just after it. This may be because of:

- the way in which they are rescued

- relaxing too soon

- loss of buoyancy – actions such as waving, etc. may release air trapped in clothing. Again, wearing a lifejacket removes this threat.

It follows that:

- you should stay still in the water: blow a whistle or shout to attract attention – but do not wave unless you are wearing a lifejacket or have some other aid to flotation

- the rescue itself should be carried out appropriately (see *the rescue phase*, below)

- you should maintain your determination to survive throughout: do not relax too soon.

3 Actions prior to abandoning the ship

Avoid abandoning for as long as safely possible: "*the ship is the best survival craft*".

When abandonment is necessary there may be little time to formulate a plan, so careful planning beforehand is essential. Here are some things to remember should you ever have to abandon a ship:

- Ensure distress alerts have been sent. If you have emergency location beacons – including personal beacons – switch them on, and leave them on.

- If possible keep the emergency location beacon with you. Rescue units are most likely to find the emergency location beacon first.
- Put on as many layers of warm clothing as possible, including your feet. Make sure to cover your head, neck, and hands. The outer layer should be as watertight as possible. Fasten clothing to improve insulation and to minimize cold water flushing in and out beneath the clothing.
- If an immersion suit is available put it on over the warm clothing.
- Put on a suitable lifejacket and secure it correctly. If in cold water you will quickly lose full use of your fingers. If the lifejacket is fitted with crotch and/or other retaining straps, make sure that they are pulled tight. They will hold the lifejacket in the right position, increasing buoyancy – you may not be able to tighten them once in the water. If the lifejacket is of the automatic inflation type, inflate it manually *after* leaving the interior of the ship but *before* entering the water.
- If time permits drink a lot before leaving the ship: warm sweet drinks are best – but no alcohol: it can reduce the chances of survival in cold water. Take extra water with you if possible.
- Before leaving the ship, or immediately after boarding the survival craft, take anti-seasickness medicine.
- Avoid entering the water at all if possible. If you must go into the water, avoid jumping in. If davit-launched survival craft, a marine escape system or other means of dry-shod embarkation are not available use over-side ladders if you can, or lower yourself slowly, by means of a rope or fire hose, for example.
- If jumping into the water is unavoidable, you should try to keep your elbows to your side and cover your nose and mouth with one hand while holding the wrist or elbow firmly with the other hand. Just before you jump look down to ensure the area beneath is clear of obstruction, and then jump with eyes fixed on the horizon to ensure you stay in a vertical position as you fall. Avoid jumping onto a liferaft canopy (you may injure yourself or people inside) and avoid jumping into the water astern of a liferaft still secured to the ship, in case the ship has some remaining headway.

4 The survival phase: in a survival craft

You should try to enter the survival craft "dry". But this may not be possible, and the craft is unlikely to be dry itself. You can still cool to dangerous levels – especially if wet to begin with, partly because of the evaporation of water in your clothing. Even if wearing an immersion suit, or a so-called "dry" suit, you may still be wet. But stay calm: there are things you can do to improve your situation:

- In survival craft without covers, try to give yourself a waterproof and windproof covering – plastic sheeting or bags, for example, if suitable clothing is not available.
- Enclosed survival craft give you better protection from the elements, but may still become wet inside. Having checked that there are no other survivors able to reach the raft, close the covers as soon as you can, before your hands get too cold.
- Try to avoid sitting in water: sit on your lifejacket if there is nothing else available.

- Squeeze as much water as you can out of sodden clothing before replacing it, to reduce body heat loss through evaporation.
- Huddling close to the other occupants of the survival craft will also conserve body heat – but ensure craft stability is not compromised.
- Follow your survival craft training (water and food rationing, etc.).
- Keep a positive attitude of mind about your survival and rescue: your will to live *does* make a difference! While you wait "*Stay warm; stay alive*" should be your motto.

5 The survival phase: in the water

Because of the greater body heat loss in water, you are always better off out of the water than in it – despite how this may feel at first – and you are better off partially out of the water if you cannot get out of it entirely.

After the initial responses have passed and you have regained control of your breathing, you should:

- Orientate yourself and try to locate the ship, survival craft, other survivors, or other floating objects. If you were unable to prepare yourself before entering the water, button up clothing now. In cold water you may experience violent and distressing shivering and numbness. These are natural body responses that are not dangerous. You do, however, need to take action as quickly as possible before you lose full use of your hands.
- Do not attempt to swim unless it is to reach a fellow survivor or a nearby shore, craft, or other floating object onto which you can hold or climb. Staying calm and still conserves heat.
- If swimming, swim on your back, using only your legs if possible. The arms are critical to heat loss. Not using your arms to swim means that you can keep them folded over your torso to assist in insulation.
- Swim downwind of a floating object if you are trying to reach it, rather than straight towards it. The wind will bring it in your direction. Once upwind of a liferaft, for example, you are unlikely to be able to reach it. Keep checking the object's location and your progress towards it. If you decide that you cannot reach it, stop swimming, stay calm and stay still.
- The body position you assume in the water is very important in conserving heat. Try to float as still as possible, with your legs together, elbows close to your side, and arms folded across your chest. This position – which may only be fully achievable if you are wearing a lifejacket or dry suit – minimizes the exposure of the body surface to the cold water.
- If the lifejacket is fitted with a spray hood, put it on. The hood protects the airways against spray while drifting in the water.
- The floating body tends to turn towards on-coming waves, with the legs acting like a sea anchor. If you have to, paddle gently to maintain a back-to-wave position. Although this may increase heat loss, you need to protect your airway from wave splash.
- Link up with other survivors if you can: it helps location and rescue.

- Keep a positive attitude of mind about your survival and rescue. This will extend your survival time. Your will to live *does* make a difference!

6 The rescue phase: guidance for those engaged in search and rescue

Search may have to come before rescue.

Remember to:

- Search long enough! Survival is possible, even after many hours in cold water.
- Ask the Rescue Coordination Centre for advice; including on how long to keep searching.
- Plan and prepare recovery methods for a variety of possible scenarios while searching. See the IMO's guidance on recovery, *A Pocket Guide to Recovery Techniques*.

Rescue

Recovery from the water:

- Be aware of the dangers to people in the water of vessel drift, including side-splash – waves generated or reflected by the hull.
- Try to ensure that the survivor does not attempt to assist: full and coordinated use of their fingers and arms may not be possible, and lifting an arm to take hold of a rope can induce sinking and drowning unless they are wearing a lifejacket.
- Encourage the survivor to keep "fighting for survival". Do not let them relax too soon.
- Ideally, the survivor should be recovered in a horizontal or near-horizontal body position. Lifting a hypothermic person vertically can induce cardiac arrest. In a relatively high lift – up to the deck of a ship or into a helicopter, for example – use two strops or loops (one under the arms, the other under the knees) or other means of near-horizontal recovery: see the *Pocket Guide to Recovery Techniques*.
- However, if the survivor's airway is under threat – as it may be if alongside a vessel of any size, even in calm conditions, because of side-splash – recover by the quickest method possible.
- Keep the survivor slightly head-down during transport to a place of safety. In a fast rescue craft, for example, this will mean laying the survivor with his feet towards the bows.
- If a rescue craft has been deployed, survivors recovered should if possible remain in the craft during its recovery.

Recovery from survival craft:

- In high seas beware of swamping of enclosed craft on opening the hatch.
- Beware of the possibility of rescue collapse on recovery. This is especially likely in survivors who have been adrift for a long time.
- To avoid collapse employ the horizontal rescue procedures outlined above.

7 Treatment of people recovered from cold water

Check for vital signs. Is the casualty breathing? Are they unconscious (unresponsive) or conscious?

Begin appropriate First Aid as described below. See also the flow diagram in the Appendix.

Always obtain medical advice as soon as possible, even if the casualty has not been in cold water for long, and is conscious. Free advice may be obtained from a Telemedical Maritime Assistance Service (TMAS), which can be contacted via a Rescue Coordination Centre (RCC).

Unconscious casualty

Adopt standard First Aid procedures.

If not breathing:

- Check/clear airway; if still not breathing give 2 full rescue breaths.
- Commence cardiopulmonary resuscitation (CPR) in accordance with First Aid training.
- While awaiting medical advice continue CPR at a compression rate of 100 per minute, with 2 rescue breaths every 30 compressions.
- Continue until exhausted if acting alone. If assistance is available, interchange every 2 minutes to avoid exhaustion.
- If the cardiac arrest was not witnessed; if medical advice is still not available and none is imminent; and if there are still no signs of life after 30 minutes, stop CPR but treat the casualty in accordance with the advice in section 9 below.
- If the cardiac arrest was witnessed, maintain CPR until you are either exhausted or receive medical advice.

If breathing but unconscious:

- Transfer to a sheltered location.
- Check for other injuries.
- Place in the recovery position.
- Beware of vomiting which is very common in seawater drowning.
- Seek medical advice.
- Monitor and record breathing and heart rate (neck/carotid pulse). An increasing breathing and/or heart rate may indicate the onset of drowning complications – and in a severely hypothermic person cardiac arrest can occur at any time.
- Provide oxygen by mask, if available.
- Provide additional insulation to prevent continued cooling. To provide protection against evaporative heat loss enclose in a large waterproof bag or sheeting.

Conscious casualty

Short exposure (less than about 30 minutes): survivor is shivering

- Survivors who are fully alert, rational and capable of recounting their experiences, although shivering dramatically, will recover fully if they remove their wet clothing and are insulated with blankets, etc. If their exposure has been relatively short, 30 minutes or so, they can be re-warmed in a hot bath, or seated in a shower[2] – but only if shivering and while being supervised for early signs of dizziness or collapse associated with overheating.
- Alternatively, for survivors who are shivering and alert, physical exercise will speed up re-warming.
- Seek medical advice.

Long exposure (more than 30 minutes) and/or survivor is not shivering

- Insulate to prevent further heat loss through evaporation and exposure to wind.
- Avoid unnecessary manhandling – enclose in blankets and/or plastic, including head (but not face), neck, hands and feet.
- Move to a warm, sheltered location.
- Lay down in a semi-horizontal or half-sitting position (unless dizziness develops, when a horizontal attitude would be best).
- Oxygen should be given if available.
- If water was inhaled, encourage deep breathing and coughing.
- Monitor and record breathing and heart rate (neck/carotid pulse) at 5 minute intervals for the first 15 minutes and then, if no change, at 15-minute intervals. (An increasing breathing and/or heart rate may indicate the onset of drowning complications – and remember that in a severely hypothermic person cardiac arrest can occur at any time.)
- Seek medical advice.
- When alert and warm it is no longer necessary to maintain a semi-horizontal or horizontal position.
- Give warm sweet drinks – but no alcohol.

If the survivor's condition deteriorates, refer to the treatment procedure for the unconscious patient, above.

8 Treatment of people recovered from survival craft

Occupants who were exposed and dry for short durations (2 to 3 days), and are fully alert, may require treatment for mild hypothermia as described above for conscious immersion survivors.

[2] The bath or shower should be at a temperature of 39-41°C (102-106°F). Much less than this and the survivor's body will continue cooling, even if the water feels "warm". If you do not have a thermometer, dip your bare elbow in the water: the heat will be tolerable at about the correct temperature, but not above it.

Occupants who are wet and cold and less alert will require to be recovered in a semi-horizontal position and should be treated in the same way as immersion casualties at the same level of alertness.

Warm sweet drinks should be provided.

Obtain medical advice. Free advice may be obtained from a Telemedical Maritime Assistance Service (TMAS), which can be contacted via a Rescue Coordination Centre.

9 The apparently dead

What to do with people recovered apparently dead, showing no signs of life and extremely cold to the touch, is a very difficult question.

In all probability they will indeed be dead, especially if there are witness reports from other survivors that they have been in that state for many hours.

If, however, there are no such witness reports, the assumption must be that they may be alive but suffering from extreme hypothermia; that is, the heart may still be working but at a very reduced level of activity such that the pulse cannot be felt and the eye pupils are widely dilated.

Always obtain medical advice as soon as possible. Free advice may be obtained from a Telemedical Maritime Assistance Service (TMAS), which can be contacted via a Rescue Coordination Centre.

The apparently dead should be:

- Recovered horizontally if possible and handled as if seriously ill.
- The body should be gently placed in the recovery position in a warm sheltered compartment, and well insulated.
- If still alive, the body can rewarm very slowly at an optimal rate to allow it to compensate, by itself, for the major internal fluid changes that occurred during the slow protracted cooling it endured.
- Monitor and record pupil size and rectal temperature at hourly intervals for 12 hours. If there is no change and there are still no other signs of life, then it can be assumed that the casualty is dead.
- If, however, pupil size decreases then, possibly, the casualty is alive: commence monitoring and recording at 15-minute intervals, including checking for pulse and breathing.
- If any sign of life is detected treat as for the unconscious immersion casualty. See section 7 above.

10 Summing up

This guide has briefly explained how your body responds to cold, what you can do to help ward off its harmful effects and, finally, how to aid people recovered from the water or from survival craft.

Let's sum up with some important reminders about survival. Follow them, for your life may one day depend on them.

- **Plan your emergency moves in advance**. Ask yourself what you would do if an emergency arose. Where is your nearest exit to the deck for escape? Where is the nearest available immersion suit, lifejacket, SART, emergency location beacon and survival craft? How would you quickly get to your foul weather gear, insulated clothing, gloves, etc.?
- **Know how your survival equipment works**. The time of the emergency is not the time to learn.
- Even in the tropics, before abandoning ship **put on many layers of clothing** to offset the effects of cold. **Wear an immersion suit** if available.
- **Put on a lifejacket** as soon as possible in an emergency situation – and adjust it correctly.
- When abandoning ship, **try to board the survival craft dry** without entering the water.
- **Take anti-seasickness medicine** as soon as possible.
- If immersion in water is necessary, **try to enter the water gradually**.
- The **initial response** to immersion in cold water **will only last a few minutes**: rest until you regain control of your breathing. (This initial response will not always occur, but is more likely with lower water temperatures/less protection.)
- **Try to get as much of your body as you can out of the water**.
- Swimming increases body heat loss. **Only swim to a safe refuge nearby** if the likelihood of early rescue is low and you are confident that you can reach it. **Swim on your back, using only your legs** if you can.
- **If trying to reach a floating object swim downwind of it**, letting the wind bring the object to you.
- If not swimming to a refuge, try to reduce your body heat loss: **float in the water with your legs together, elbows to your side, and arms across your chest**.
- **If you are not wearing a lifejacket, do not wave to attract attention**. You will lose buoyancy if you have no lifejacket.
- **Force yourself to have the will to survive**. This can make the difference between life and death. Keep your mind occupied and focus on short-term objectives.
- **Do not over-exert yourself during the rescue process**: let the rescuers do the work – they are in a better condition than you.
- Even while being rescued, **do not relax too soon**.

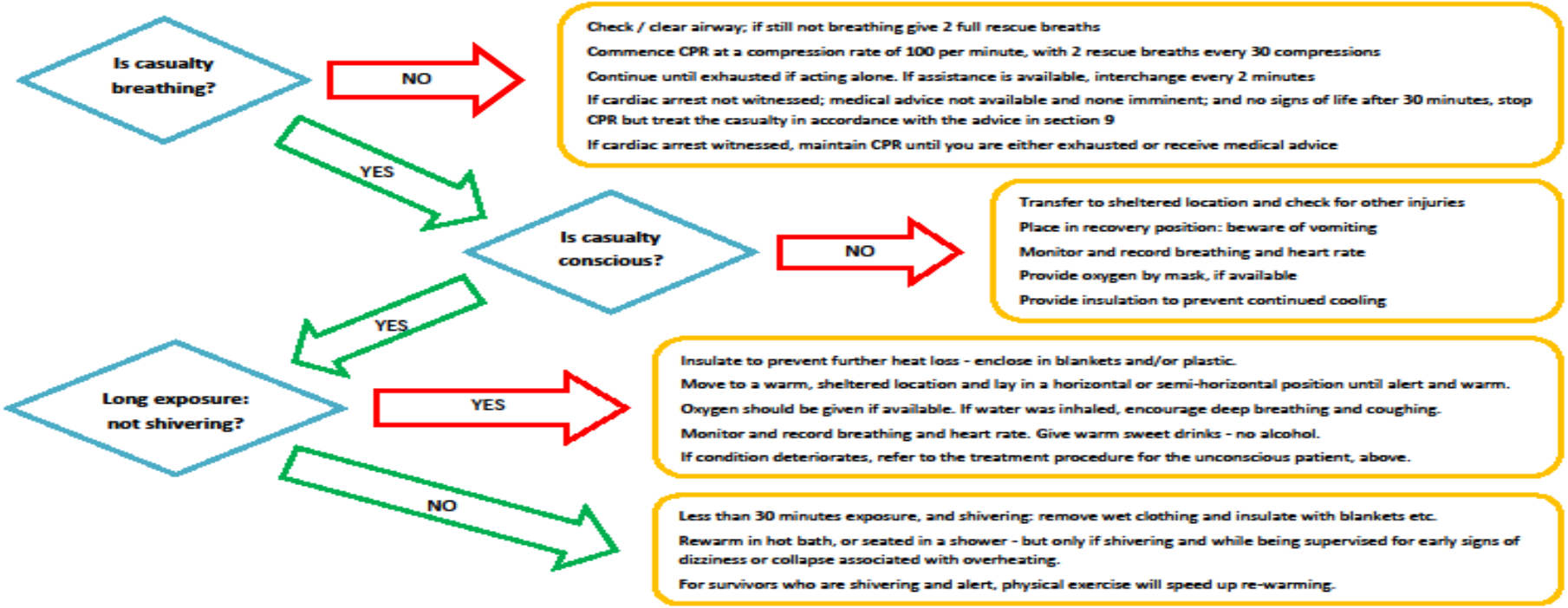
Advance knowledge, planning, preparation and thought on your part can be the most significant factors in your survival – or in treating others who have been exposed to the cold.

Familiarize yourself with the contents of this guide.

APPENDIX

Treatment of people recovered from cold water

Always obtain medical advice as soon as possible. Free advice may be obtained from a Telemedical Maritime Assistance Service (TMAS), which can be contacted via a Rescue Coordination Centre.



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ANNEX 9

DRAFT COMSAR CIRCULAR

GUIDANCE FOR ENTERING AND UPDATING INFORMATION ON SEARCH AND RESCUE SERVICES INTO GISIS AND ON HOW TO GET ACCESS TO THE INFORMATION FOR OPERATIONAL USE

1 The COMSAR Sub-Committee, at its sixteenth session (12 to 16 March 2012), agreed to change the existing system of communicating information on SAR services to the Organization, as from [1 May 2012].

2 The Sub-Committee noted that a new module of GISIS, called "Radiocommunications and Search and Rescue (COMSAR)", had been developed, containing basically the same information as available in the SAR.8 Circular (Global SAR Plan).

3 The Sub-Committee considered that making the COMSAR module accessible via GISIS would provide:

.1 the opportunity for Member Governments to enter and update information on SAR services directly into GISIS; and

.2 interested parties direct access to updated information on SAR services.

4 This circular is to inform Member Governments and interested parties of the above-mentioned change, and to clarify the procedure of entering and updating information into GISIS and on how to get access to the information for operational use.

5 Member Governments, ITU, ICAO, WMO, IHO, IMSO and the Cospas-Sarsat Partners are requested to bring this circular, and the information annexed hereto, to the attention of maritime, aviation, telecommunication, hydrographic and meteorological Authorities, SAR Authorities, Maritime Rescue Coordination Centres (MRCCs), Aeronautical Rescue Coordination Centres (ARCCs), Joint Rescue Coordination Centres (JRCCs), Coast Earth Stations (CESs), Coast Stations (CSs), Cospas-Sarsat Mission Control Centres (MCCs), hydrographers, shipowners, training institutions and seafarers.

6 This circular revokes COMSAR/Circ.52, as from [1 May 2012].

ANNEX

GUIDANCE FOR ENTERING AND UPDATING INFORMATION ON SEARCH AND RESCUE SERVICES INTO GISIS AND ON HOW TO GET ACCESS TO THE INFORMATION FOR OPERATIONAL USE

General

1 This note provides guidance to Member Governments and interested parties for entering and updating information on search and rescue (SAR) services into the Global Integrated Shipping Information System (GISIS) and on how to get access to the information for operational use.

2 The COMSAR module is a public module of GISIS and contains the information communicated by Member Governments to the Organization in response to COMSAR.1/Circ.52 on Questionnaire on the availability of SAR Services, which was distributed once a year in the past as a SAR.8 Circular (the Global SAR Plan).

3 As from [1 May 2012], information concerning the availability of SAR services will be updated by Member Governments through the COMSAR module of GISIS and, therefore, COMSAR.1/Circ.52 will be revoked and SAR.8 Circular will no longer be distributed.

4 The information contained in the COMSAR module is accessible to all Member Governments and interested parties, including the general public via the GISIS website.

Accessing the COMSAR module of GISIS

5 The COMSAR module is accessible via the GISIS website at: http://gisis.imo.org

6 To access GISIS, a valid IMO Web Account is required[*]. The general public can register for a free account online, for read-only access to GISIS modules (including the COMSAR module), while nominated IMO Web Accounts administrators of IMO Members can create accounts for their authorized users for updating information pertaining to their administration.

Communication of information

7 Relevant permissions for entering and updating information into the COMSAR module are assigned by each individual IMO Web Accounts administrator.

8 The system allows entering and updating information concerning:

.1 national authorities responsible for Maritime SAR;

.2 Rescue Coordination Centres (RCCs); and

.3 Telemedical Maritime Advice Services (TMAS).

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[*] Circular letter No.2892 provides additional guidance on access to IMO Web services, including GISIS and IMODOCS. Queries relating to the IMO Web Accounts system may be directed to the Secretariat by e-mail to: webaccounts@imo.org

ANNEX 10

DRAFT COMSAR CIRCULAR

GUIDANCE ON SMART PHONE AND OTHER COMPUTER DEVICE SAR APPLICATIONS

1 The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its sixteenth session (12 to 16 March 2012), has been advised that applications for "Smart Phones" and other computer devices have been developed and are available for download that relate to Search and Rescue (SAR). Such applications offer users a facility to raise a SAR alert.

2 There are potential safety concerns about the use of such applications where the application relies on e-mail as a form of notification. E-mail has not been approved as a means of distress notification to an RCC. There is no guarantee that an e-mail alert will be received by the appropriate authorities (including RCCs); as a result the application user may incorrectly rely upon the assumed reception of an e-mail by the authorities. This false assumption may put lives at risk.

3 It may be possible for such applications to be made compatible with existing global and national search and rescue arrangements but it is recommended that administrations review their approach to such applications. Where there is a safety concern with applications that use e-mail for distress notification it is recommended that administrations consider measures to discourage the use of such applications.

4 Additionally, administrations may want to ensure that, in markets where the application might be available outside their country, the application provider clearly lists their country as one of the locations where distress email notifications will not be received by search and rescue authorities. Administrations are advised to contact the sponsor/owner of the SAR application and request removal of their country from the application and any advertising material including websites that list regions that receive e-mail alerts.

5 It is also recommended that administrations review the arrangements they have with any other providers to ensure that their search and rescue operational requirements are adequately addressed. Some SAR authorities have currently limited smart phone applications to routeing via phone to the closest RCC as published in the Nautical Publications, or as provided for by National SAR authorities.

6 Member Governments are requested to bring this circular to the attention of all parties concerned.

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ANNEX 11

DRAFT MSC CIRCULAR

AMENDMENTS TO THE INTERNATIONAL AERONAUTICAL AND MARITIME SEARCH AND RESCUE (IAMSAR) MANUAL

1 The Maritime Safety Committee (MSC), at its [ninetieth session (16 to 25 May 2012)], having been informed that the International Civil Aviation Organization (ICAO) had approved the amendments to the IAMSAR Manual prepared by the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue, and that they had been endorsed by the Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) at its sixteenth session, approved the annexed amendments in accordance with the procedure laid down in resolution A.894(21).

2 The Committee decided that the amendments should become applicable on [1 July 2013].

PROPOSED AMENDMENTS TO IAMSAR MANUAL – VOLUME II

1 Foreword

- Add the following text at the end of the second paragraph:

  "Depending on the duties assigned, it may be necessary to hold only one, or two or all three volumes."

- Add at the end of the penultimate paragraph:

  "by the eighty-fifth session in December 2008 (which entered into force on 1 January 2009) and by the eighty-sixth session in June 2009 (which became applicable on 1 June 2010)."

- Replace the last paragraph with the following:

  "A new edition is published every three years. The 2013 edition includes the 2010 amendments (adopted by ICAO and approved by IMO's Maritime Safety Committee at its eighty-seventh session in May 2010 that became applicable on 1 June 2011) and the 2011 and 2012 amendments (adopted by ICAO and approved by IMO's Maritime Safety Committee at its ninetieth session in May 2012 that became applicable on 1 June 2013). The amendments were prepared by the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue at its sixteenth session, in September 2009, seventeenth session, in September 2010, and eighteenth session, in October 2011, respectively, and were endorsed by the IMO Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) at its fourteenth session, in March 2010, fifteenth session, in March 2011, and sixteenth session, in March 2012, respectively.

2 Abbreviation and acronyms

- Update the list with the following edited text:

AIP	aeronautical information publication
GMDSS	Global Maritime Distress and Safety System
SART	search and rescue (radar) transponder

- Add the following text:

AIS	automatic identification system
AIS-SART	automatic identification system- search and rescue transmitter
CS	coast station
GIS	geographic information system
IBRD	International 406 MHz Beacon Registration Database
LRIT	Long-range Identification and Tracking

MAREC	Maritime Search and Rescue Recognition Code
MOB	man overboard
SAC	short access code
SMCP	(IMO) Standard Marine Communication Phrases
SRS	ship reporting system
VMS	vessel monitoring system
VTS	vessel traffic services

- Delete the following text:

CIRM	Centra Internazionale Radio Medico
RTG	radio telegraphy

3 Glossary

- Update the glossary with the following text:

Cospas-Sarsat System	A satellite system designed to detect and locate activated distress beacons transmitting in the frequency band of 406.0-406.1 MHz.
Direction finding (DF)	Radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object.
Homing	The procedure of using the direction-finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously towards the other station.
MAYDAY	The international radio telephony distress signal.
METAREA	A geographical sea area[4] 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 shall not prejudice the delimitation of any boundaries between States.
NAVAREA	A geographical sea area[1] 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 shall not prejudice the delimitation of any boundaries between States.

[1] Which may include inland seas, lakes and waterways navigable by seagoing ships.

On-scene endurance	The amount of time a facility is capable of spending at the scene, engaged in search and rescue activities.
PAN-PAN	The international radio telephony urgency signal.
Personal Locator Beacon (PLB)	A portable device, manually activated, which transmits a distress signal on 406 MHz, and may have an additional homing signal on a separate frequency.

- Add the following text:

Area Control Centre (ACC)	An air traffic control facility primarily responsible for providing ATC services to IFR aircraft in controlled areas under its jurisdiction.
Automatic Identification System (AIS)	A system used by ships and vessel traffic services (VTS), principally for identifying and locating vessels.
Aeronautical Information Services (AIS)	A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation.
Distress alert	The reporting of a distress incident to a unit which can provide or coordinate assistance.
Emergency Locator Transmitter (ELT)	A generic term (related to aircraft) describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated.
Emergency position-indicating radio beacon (EPIRB)	A device, usually carried aboard maritime craft, that transmits a signal that alerts search and rescue authorities and enables rescue units to locate the scene of the distress.
Flight information centre (FIC)	A unit established to provide information and alerting services.
Geographic information system (GIS)	A system which captures, stores, analyses, manages and presents data that is linked to a location.
Heave	The vertical rise and fall due to the entire ship being lifted by the force of the sea.
Long-range Identification and Tracking (LRIT)	A system which requires certain vessels to automatically transmit their identity, position and date/time at six-hour intervals in accordance with SOLAS regulation V/19-1.

Maritime Domain Awareness (MDA)	The effective understanding of any activity associated with the maritime environment that could impact upon the security, safety, economy or environment.
Place of safety	A location where rescue operations are considered to terminate; where the survivors' safety of life is no longer threatened and where their basic human needs (such as food, shelter and medical needs) can be met; and, a place from which transportation arrangements can be made for the survivors' next or final destination. A place of safety may be on land, or it may be aboard a rescue unit or other suitable vessel or facility at sea that can serve as a place of safety until the survivors are disembarked to their next destination.
Ship reporting system (SRS)	Reporting system which contributes to safety of life at sea, safety and efficiency of navigation and/or protection of the marine environment. They are established under SOLAS regulation V/11 or for SAR purposes under chapter 5 of the International Convention on Maritime Search and Rescue, 1979.
Vessel	A maritime craft.
Vessel Monitoring System (VMS)	A tracking system which provides for environmental and fisheries regulatory organizations to monitor the position, time at a position, course and speed of commercial fishing vessels.
Vessel tracking	A generic term applied to all forms of vessel track data derived from multiple sources such as ship reporting systems, AIS, LRIT, SAR aircraft, VMS and VTS.
Vessel Traffic Services (VTS)	A marine traffic monitoring system established by harbour port authorities to keep track of vessel movements and provide navigational safety in a limited geographical area.

- Remove the following text:

Locating	The finding of ships, aircraft, units or persons in distress.
SarNet	A broadcast system between RCCs within the footprint of an individual satellite.

4 Chapter 1

- Amend the following text in paragraph 1.1.1:

  Replace text "sail or fly" with "may be in danger, in the air or at sea".

- Amend the following text in paragraph 1.2.3:

  Move text "as well as the SMC" on seventh line to sixth between "the assisting team," and "must be replaced at regular intervals." in third sentence.

  Add text "(visual and electronic)" after the word "lookout" in the fourth bullet of subparagraph (b).

  Add text "if necessary, rescue vessels and," after "fuelling of aircraft, and" in the eleventh bullet of subparagraph (b).

  Add text "notify police and other government authorities where relevant and necessary" as a new bullet after the seventeenth bullet of subparagraph (b).

  Add text "or vessel" after "registry of aircraft" in the second to last bullet of subparagraph (b).

- Amend the following text in paragraph 1.2.4:

  Add text "action" between "rescue" and "plan" in the second to last bullet.

- Move paragraph 1.2.5 after the paragraph on "Aircraft Coordinator" and renumber.

- Amend the following text in paragraph 1.2.5 (old paragraph 1.2.6):

  Add text "such as an ATS unit or RCC" at the end of second to last sentence.

  Replace text of second bullet by "assist in maintaining flight safety by issuing safety-related information".

- Rename the section called "Ship Reporting System" to read "Ship Reporting System and Vessel Tracking".

- Insert new paragraph 1.3.6 and include the following text (and renumber all paragraphs of section 1.3 accordingly):

  "As well as ship reporting systems (SRS), RCCs can use vessel position data from various vessel tracking systems to support SAR operations. These may include the Long-range Identification and Tracking (LRIT) system, the Automatic Identification System (AIS) system, fisheries and other Vessel Monitoring Systems (VMS) and Vessel Traffic Services (VTS) established to monitor port operations or to cover focal areas or sensitive areas. Data from each of these systems can be displayed by RCCs using geographic information systems (GIS) to produce a surface picture (SURPIC). SURPICs can be used to identify and locate potential rescue vessels as well as improve maritime domain awareness (MDA). In accordance with SOLAS regulation V/19-1, Contracting Governments should make provision to receive LRIT vessel position data for SAR. IMO guidance material advises that RCCs can request LRIT data for SAR operations within their own SRR and for SAR coordination requirements outside it as appropriate. Data on all vessels can be requested within a circular or rectangular area at no charge to the RCC."

- Amend the following text in paragraph 1.3.7 (old paragraph 1.3.6):

  Delete text "From 31 January 1999".

- Amend the following text in paragraph 1.3.8 (old paragraph 1.3.7):

  Replace text "though this can still be done" with "though this is still done".

  Replace text "where SAR professionals can help arrange assistance" with "so that SAR professionals are rapidly alerted and can help arrange assistance".

- Amend the following text in paragraph 1.3.9 (old paragraph 1.3.8):

  Delete last sentence and replace with "An initial goal of GMDSS was to eliminate the need for a continuous listening watch on VHF-FM Channel 16. However, since most other vessels depend on Channel 16 for distress, safety, and calling, IMO has decided that all GMDSS ships, while at sea, shall continue to maintain, when practicable, continuous listening watch on VHF-FM Channel 16".

- Amend the following text in paragraph 1.3.10 (old paragraph 1.3.9):

  Delete text "Commercial aircraft on domestic routes and general aviation" from the fourth sentence.

- Amend the following text in paragraph 1.3.12 (old paragraph 1.3.11):

  Add text "and operate on 406 MHz and 121.5 MHz for final homing" at the end of the last sentence.

- Amend the following text in paragraph 1.4.4:

  Add text "If the medical personnel consulted do not fully understand the risks, the SMC should explain the risks and ask for an opinion on the urgency of the medical situation and the necessity of and priority for evacuation." after the second sentence.

- Delete paragraph 1.5.3.

- Amend the following text in paragraph 1.6.2:

  Replace text "or other craft" with "other craft or person(s)".

- Amend the following text in paragraph 1.6.3:

  Add text "or witnesses seeing an aircraft in difficulty or crash" after "overdue".

- Amend the following text in paragraph 1.6.4:

  Replace text "A coast radio station (CRS)" with "In some areas, a coast radio station (CRS) provides the main link for ship-to-shore and shore-to-ship communications and, in this situation, it may be that the CRS".

  Add text "Some RCCs may have radio or satellite communications capability that enables them to be alerted directly." at the end of the paragraph.

- Amend the following text in paragraph 1.6.10:

  Replace text "survivors move due to wind and water currents" with "survivors may move, for example, due to wind and water currents or by attempting to walk out of a remote land area".

  Replace text "watchstanders" with "personnel".

- Amend the following text in paragraph 1.6.11:

  Replace text "removing them to a safe place" with "delivering them to a place of safety".

  Insert new sentence before last sentence and include the following text:

  "They may also continue to gather or receive more information and assess this to see if it affects or changes any of the plans previously made. The RCC may also be the focal point for communications with other organizations."

- Amend the following text in paragraph 1.6.12:

  Add text "other craft" after "ship" and add "or" at the end of the first bullet.

  Replace text of last bullet with "during the distress phase, the SMC determines that further search would be to no avail because additional effort cannot appreciably increase the probability of successfully finding any remaining survivors or because there is no longer any reasonable probability that the persons in distress have survived".

- Amend the following text in paragraph 1.7.1:

  Replace text "at some later date" with "taken" at the end of the paragraph.

- Amend the following text in paragraph 1.7.2:

  Delete sentence "Appendix C contains a sample format of this record".

- Insert new paragraph 1.7.6 and include the following text (and renumber all paragraphs of section 1.7 accordingly):

  "Electronic charting systems/Geographic Information System (GIS) make it possible to create separate records of incident information plots regardless of the number of incidents being handled. The records are stored electronically and may also be printed for portable use, briefings, etc."

- Amend the following text in paragraph 1.7.7 (old paragraph 1.7.6):

  Replace text "overlays" with "records".

- Amend the following text in paragraph 1.8.2:

  Add text "and practice skills" after "individual procedures".

- Amend the following text in paragraph 1.8.4:

  Replace text of subparagraph (b) with "A Coordination Exercise involves simulated response to an emergency based on a series of scenarios. All levels of the SAR service are involved but do not deploy. This type of exercise can require considerable planning, especially where a number of other units or organizations are involved and usually takes one to three days to execute. However, simulation exercises can be carried out more simply, for example, RCC personnel can conduct "internal" coordination exercises to simulate response to a scenario and practise their skills, techniques, procedures and processes. This may be as part of a programme of personnel competency maintenance training."

- Amend the following text in paragraph 1.8.6:

  Add text "and opportunities for testing and evaluating." to the end of the first sentence.

  Replace text "EXERCISE ONLY" with "a prefix such as "EXERCISE" or "SAREX" in subparagraph (a).

- Amend the following text in paragraph 1.8.12:

  Replace text "These watchstanders" with "Their personnel" in second sentence.

  Replace text "watchstanders" by "personnel" in fourth sentence.

- Amend the following text in paragraph 1.8.15:

  Replace text of first paragraph with "RCC and RSC SAR training should also include many other topics. If search planning skills, knowledge and expertise gained from formal training is not used on a regular basis for operations or exercises, then periodic recurrent training must be implemented to ensure reliable and effective delivery of SAR services. Subject matter should include:".

  Add "GDMSS, Weather and Vessel tracking (AIS, LRIT, VMS and VTS) to the list of topics and remove "Inmarsat".

- Amend the following text in paragraph 1.10.3:

  Replace text of first two sentences of subparagraph (a) with "In order to ensure the formulation of a consistent and controlled message to the public, designated media relations personnel should be notified as the focal point for the release of information relating to SAR operations. In the conduct of major operations, the RCC should not normally be the contact point for the media because of the potential for negative impact on SAR operations if media interest becomes too extensive".

  Add text "behaviour" after text "experience" and replace text "captain" with "master" in first bullet of subparagraph (c).

- Amend the following text in paragraph 1.10.5:

  Replace text "man" with "staff" in first bullet.

- Amend the following text in paragraph 1.10.6:

  Add text "public relations and management of" after text "considerations for".

  Add text "public relations staff" after text "RCC" in subparagraph (a).

- Amend the following text in paragraph 1.11.6:

  Replace text of subparagraph (b) with the following:

  "*Search planning.* The RCC may develop its own databases as well as make use of existing database programs on a variety of information valuable to search planning. Examples include:

  - An index to previous SAR incidents by distressed craft name or other identifier could lead to valuable information about that craft if it is involved in a later incident.

  - A database of known debris locations from previous aircraft crashes or forced landings over land, or vessels recently sunk may avoid wasting valuable search time investigating old SAR incident sites.

  - In the maritime area, a database of past drift trajectories could improve estimates of survivor location in future incidents.

  - An environmental database, including sea currents, water temperatures, winds currents, etc."

  Add new subparagraph (c) as follows:

  "Facilities and agencies

  - A database of SAR and medical facilities, such as hyperbaric chambers and hospitals, and their capabilities could aid rescue planners in determining the best place to take injured survivors.

  - Lists of frequently called agencies and telephone numbers can be kept in a database and rapidly accessed when needed."

- Amend the following text in paragraph 1.11.7:

  Add text "computer" at the beginning of paragraph.

- Amend the following text in paragraph 1.11.8:

  Add text "The Internet often provides a means to access this data as well as business and individual web sites which might provide pertinent information on the craft or persons in distress." at the end of subparagraph (a).

- Insert new paragraph 1.11.10 and include the following text:

  "*Display of Vessel Tracking Data*. A computer system with geographic information system (GIS) display capability is important for displaying vessel tracking data sourced from AIS, LRIT, VMS, VTS and other sources. The location of SAR units can also be tracked and displayed, as can search areas and other information."

5 Chapter 2

- Amend the following text in paragraph 2.1.4:

  Insert text ", Commercially available emergency notification device service providers," between "units" and "public".

- Amend the following text in paragraph 2.2.9:

  Replace text "ELT or EPIRB" with "ELT, EPIRB or PLB" in second sentence.

- Amend the following text in paragraph 2.3.1:

  Delete text "from 1999" in second sentence.

- Amend the following text in paragraph 2.3.3:

  Replace text "voice distress safety, and calling frequency" with "voice distress and safety frequency".

- Amend the following text in paragraph 2.3.4:

  Add text "HF radio can be useful in polar regions where geostationary satellite coverage may be limited. Also, HF email capability exists." at the end of the paragraph.

- Amend the following text in paragraph 2.3.5:

  Add text "AIS transmission from ships provides vessel identity, location and other information which can be useful for SAR purposes." at the end of the paragraph.

- Amend the following text in paragraph 2.5.1:

  Delete text "After 1 Feb 1999" at beginning of paragraph.

- Amend the following text in paragraph 2.5.5:

  Delete text "After 1 Feb 1999" at beginning of paragraph.

  Add text "(radar) and/or AIS-SART" at the end of third bullet.

  Replace text "VHF DSC of Satellite" with "EPIRB, as appropriate" in last bullet.

  Insert new paragraph 2.5.11 and include the following text (and renumber all paragraphs of section 2.5 accordingly):

  "AIS-Search and Rescue Transmitter (AIS-SART) is a portable manual deployment survivor locating device intended for use on life rafts or survival craft and is an alternative to a radar SART. The device sends updated position reports using a standard AIS class A position report. It has a built in GNSS receiver."

- Amend the following text in paragraph 2.5.14 (old paragraph 2.5.13):

  Replace text "when" with "if" in last sentence.

- Amend the following text in section 2.6 title:

  Replace text "EPIRBs and ELTs" with "406 MHz distress beacons, EPIRBs and PLBs".

- Amend the following text in paragraph 2.6.1:

  Delete text "Satellite" in first sentence.

  Replace text "MH" with "MHz" in second sentence.

- Amend the following text in paragraph 2.6.3:

  Replace text of paragraph with the following:

  "Cospas–Sarsat also relays alerts from aviation 406 MHz emergency locator transmitters (ELTs), and from 406 MHz Personal Locator Beacons (PLBs). Signals from 121.5 MHz and 243.0 MHz ELTs and EPIRBs may also be relayed by aircraft in flight via an ATS unit, but signals from these beacons are not processed by satellites and are not part of GMDSS. Some national regulations may allow for the 121.5 MHz ELT on domestic flights. This old style ELT depends on other aircraft or airport facilities to detect its aural signal. All 406 MHz distress beacons are electronically similar, the main differences being construction, activating mechanisms and slight differences in coding protocols. While ELTs, EPIRBs, and PLBs each have intended user communities, unintended users may activate the devices in an emergency."

- Amend the following text in paragraph 2.6.4:

  Replace text of paragraph with the following:

  "Most 406 MHz distress beacons provide a homing capability on 121.5/243/406 MHz; some EPIRBs may also integrate AIS-SARTs into their designs."

- Amend the following text in paragraph 2.6.5:

  Replace text "EPIRBs and ELTs" with "406 MHz distress beacons".

- Amend the following text in paragraph 2.6.6:

  Replace text "ELT and EPIRB" with "406 MHz distress beacon".

  Replace text "Global Positioning System (GPS)" with "Global Navigation Satellite System (GNSS)".

- Amend the following text in paragraph 2.6.7:

  Replace text "ELTs and EPIRBs properly registered" with "distress beacons properly register".
  Replace text "beacon" with "ELT".

- Amend the following text in paragraph 2.6.8:

  Replace text "ELTs and EPIRBs" with "distress beacons".

- Amend the following text in paragraph 2.6.9:

  Replace text "ELTs and EPIRBs" with "406 MHz distress beacons".

- Amend the following text in paragraph 2.7.6:

  Add text "and fleet 77" between "Inmarsat B" and "SES".

  Add text "(Inmarsat B only)" after "telex calls".

  Add text "Fleet 55 and 33" at the end of paragraph.

  Add text "In addition to its GMDSS-compliant services, Inmarsat provides a distress and urgency voice calling service via its series of Fleet Broadband terminals. These ship earth stations can connect a mobile user direct with a designated RCC depending on the vessel's geographic position. These terminals also provide Urgency communication for Medical Advice, Medical Assistance and Maritime assistance through the use of 2-digit SACs." at the end of paragraph.

- Insert new paragraph 2.7.8 and include the following text:

  "Portable satellite handsets are available which provide voice and text messaging capabilities. Some of these handsets use GNSS to provide position information, which may be made available to the RCC. These handsets are not normally designed for use in the maritime environment, for example they may not be waterproof. They are also not GMDSS-compliant."

- Amend the following text in paragraph 2.8.3:

  Replace text "radiotelephone" with "MF DSC." in subparagraph (a).

  Add text "Passenger ships must be able to communicate for SAR purposes on this frequency." before last sentence of subparagraph (d).

  Add text "Passenger ships must be able to communicate for SAR purposes on this frequency." at the end of subparagraph (e).

- Amend the following text in paragraph 2.9.2:

  Delete text "some".

- Amend the following text in paragraph 2.9.4:

  Replace text "Many civil aircraft world-wide, especially operating over ocean areas, carry a 121,5 MHz ELT for alerting and homing. SAR aircraft should be able to home on this frequency to help locate survivors. Many ELTs also alert and provide homing signals on …" with "Many civil aircraft world-wide, especially operating on international flights and over ocean areas, carry an ELT which operates on 406 MHz for alerting and 121.5 MHz for final homing. SAR aircraft should be able to home on this frequency to help locate survivors. Many ELTs also provide homing signals on …".

- Amend the following text in paragraph 2.9.5:

  Add text "Ships may carry either a radar transponder(s) and/ or an AIS-SART." at the end of paragraph.

- Amend the following text in section 2.10 title:

  Replace text "Cellular Telephones" with "Mobile Telephones – Satellite and Cellular".

- Amend the following text in paragraph 2.10.1:

  Add text "A mobile telephone can be a satellite or cellular telephone. The satellite telephone connects to orbiting satellites and can provide regional or global coverage. Cellular telephones connect to a local terrestrial network of radiocommunications base stations known as cell sites. Many aspects of the guidance below regarding cellular telephones can also apply to the satellite telephone." at the beginning of the paragraph.

  Replace text "boats" with "vessels" in first bullet.

- Amend the following text in paragraph 2.12.2:

  Replace text "and 2182 kHz after 1 February 1999" with "when practicable".

- Amend the following text in paragraph 2.13.1:

  Delete text "and EPIRBs" in first sentence.

- Amend the following text in paragraph 2.13.2:

  Add text "MMSIs are also used in the AIS for vessels, base stations, aids to navigation, SAR aircraft and AIS SARTs. The various platforms can be differentiated by reference to the MMSI format and from databases." at the end of paragraph.

- Amend the following text in paragraph 2.15.4:

  Replace text "satellite EPIRB and ELT" with "distress beacon".

  Add text "Cospas-Sarsat provides its International 406 MHz Beacon Registration Database (IBRD) online and free-of-charge. Each SAR service has access to the IBRD to obtain beacon registration data by means of arrangements made by its Administration's National Point of Contact with Cospas-Sarsat. Volume I, chapter 4 has more details." at the end of paragraph.

- Insert new paragraph 2.15.7 and include the following text:

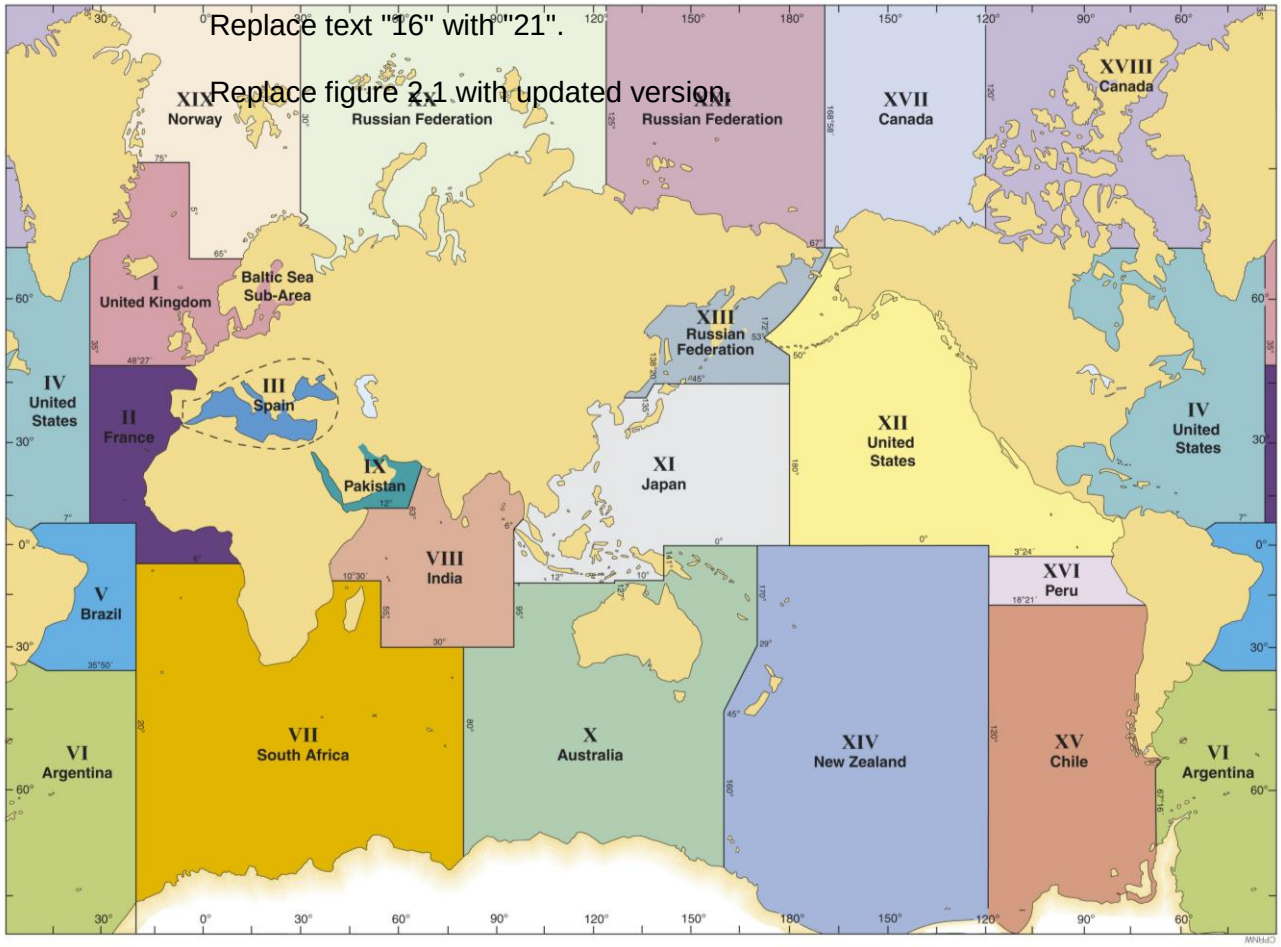
  "Users subject to IMO/ICAO regulation carry as a minimum a 406 MHz distress beacon that is compatible with established international Cospas-Sarsat system and compliant with ICAO and IMO. Non-regulated users may, as a matter of choice, carry other commercially available emergency notification devices."

- Delete paragraphs 2.16.4, 2.16.5, 2.16.6 and 2.16.7.

- Amend the following text in paragraph 2.17.5:

  Replace text "16" with "21".

  Replace figure 2.1 with updated version.



- Amend the following text in paragraph 2.19.1:

  Delete text "provided for distress and safety on the frequencies 500 kHz and 8364 kHz".

- Amend the following text in paragraph 2.19.2:

  Delete text "after 1 February 1999".

- Delete paragraphs 2.19.3 and 2.19.4.

- Amend the following text in paragraph 2.21.1:

  Delete text "(pronounced M'AIDER)" in subparagraph (a).

  Replace text "person" with "man" in subparagraph (a).

  Replace text "messages are sent" with "the distress signal precedes the distress message" in subparagraph (a).

  Delete text "(pronounced PAHN-PAHN)" in subparagraph (a).

  Replace text "SECURITY" with "SÉCURITÉ" and text "SECURITAY" with "SE-CURE-E-TAY" in subparagraph (c).

- Amend the following text in paragraph 2.22.1:

  Add text "AIS to detect the AIS-search and rescue transmitter (SART) and/or" in first bullet.

  Replace text "actuate radiotelephone alarms" with "activate DSC alerts".

- Amend the following text in paragraph 2.24.1:

  Delete text "The Code of Standard Phrases for Use between (Maritime) RCCs and RSCs is provided in Appendix I".

- Amend the following text in paragraph 2.24.3:

  Replace text 'Vocabulary" with "IMO SMCP".

- Amend the following text in paragraph 2.24.5:

  Replace text "Vocabulary" with "IMO SMCP".

- Amend the following text in paragraph 2.24.6:

  Delete text "Standard Marine Communication Phrases".

- Amend the following text in paragraph 2.24.7:

  Replace text "Vocabulary" with "IMO SMCP".

- Amend the following text in paragraph 2.24.8:

  Add text "or even by text translation on the Internet" at the end of second sentence.

- Amend the following text in paragraph 2.26.2:

  Add text "ACO" after "OSC" in first sentence.

  Replace second sentence with following text:

  "If multiple assets are assigned, the OSC should maintain communications with all maritime SAR facilities and the ACO with all aeronautical SAR facilities and the SMC; the OSC and ACO would communicate with each other as specified by the SMC."

- Amend the following text in paragraph 2.26.3:

  Add text "and/or ACO" after "OSC".

- Amend the following text in paragraph 2.27.2:

  Delete text "Inmarsat-E".

- Amend the following text in paragraph 2.27.3:

  Add text "All Cospas-Sarsat message samples are also available in Cospas-Sarsat document G.007 *Handbook on distress alert messages for RCCs*." at the end of the paragraph.

- Amend the following text in paragraph 2.27.5:

  Add text "and/or ACO" after "OSC".

- Amend the following text in paragraph 2.27.8:

  Delete text "along with standard codes as necessary".

- Amend the following text in paragraph 2.27.9(a):

  Add text "and/or ACO" after "OSC" two times in last sentence.

- Amend the following text in paragraph 2.27.11:

  Add text "and/or ACO" after "OSC".

- Amend the following text in paragraph 2.27.16:

  Add text "and ACO" after "OSC" in subparagraph (d).

- Amend the following text in paragraph 2.27.17:

  Add text "and ACO" after "OSC" in first paragraph and in subparagraph (d).

Replace text of subparagraph (f) with following text:

"*Reports:* discusses required OSC reports to the SMC and parent activity reports."

- Insert new italic/bold text "***Commercial Device Notification (non Cospas-Sarsat) messages***" and paragraph 2.27.31 which includes the following text:

"When a commercial locating, tracking and emergency notification service provider (non Cospas-Sarsat) must pass distress alert information to an RCC, there is need for consistency of formats and styles, for all essential information to be provided, and for the information to be easily and clearly understandable. Model formats provided in Appendix B have been developed for relay of alerts between commercial providers and RCCs."

- Amend the following text in paragraph 2.31.1:

Replace text of paragraph with following text:

"Inmarsat sometimes finds it necessary to bar a vessel's SES from transmitting and receiving communications. In such cases, the SES can still be used by vessels to send distress alerts or make distress calls. In the case of an emergency an RCC will initially attempt to contact the vessel, to ascertain whether the distress alert is real or inadvertent. If the RCC is unable to communicate with the vessel, they will then check its status in the "MRCC Database". Mandatory or discretionary barring will prevent communications with the vessel. The RCC may then call its associated LES, to confirm the barring status of the terminal. The LES will verify the status by referring to the appropriate tables (barring/authorization, etc.). If the terminal status is confirmed as barred, the RCC will then request the LES to unbar the terminal so that communications with the vessel can be established. If the RCC is unable to communicate with the LES, or requires the terminal to be unbarred by more than one LES, it should contact Inmarsat Customer Services or Inmarsat Network Operations Centre (NOC), or both."

- Amend the following text in paragraph 2.31.2:

Replace text of paragraph with following text:

"Any RCC that is not associated with an Inmarsat LES may not know through which LES it is attempting to communicate with a vessel. There can be a number of reasons why a non-associated RCC is unable to communicate with the vessel, including barring of the vessel or local/national telecommunication issues. If local/national telecommunication issues are not relevant and barring is suspected, the RCC should first try to contact the vessel via an Inmarsat-associated RCC, who will be able to arrange for the barring to be lifted. Alternatively, the non-associated RCC may contact either Inmarsat Customer Services or Inmarsat NOC (or both) which operate on a 24-hour basis. Inmarsat will check its Electronic Service Activation System (ESAS) for the correct status of the terminal, i.e. active, barred, etc. If the terminal is found to be active and not barred, Inmarsat will assist the RCC by providing any other information or advice as requested."

- Amend the following text in paragraph 2.31.3:

  Replace text of paragraph with following text:

  "Additionally, vessels equipped with Voice Distress enabled Fleet Broadband terminals may be similarly barred. However, LESs will be unable to assist in these cases and the RCC should contact either the Inmarsat Customer Services which operates on a 24-hour basis, or the Network Operations Centre (NOC) which also operates on a 24-hour basis who will be able to arrange the necessary unbarring."

- Insert new paragraph 2.31.4 and include the following text:

  "When the distress situation is resolved, the RCC should inform the LES(s) and either the Inmarsat Customer Services or the NOC, at the earliest opportunity to reinstate the barring on the terminal."

- Insert new section 2.33 and include the following text:

  "Vessel Tracking Communications

  Various forms of communication can be used for vessel tracking. Ship reporting systems can use voice reporting over VHF and HF, DSC and Inmarsat. Many ship reporting systems use Inmarsat-C polling or Inmarsat automated position reporting (APR). AIS uses a time-division multiple access (TDMA) scheme to share the VHF frequency, also known as the VHF Data Link (VDL). There are two dedicated frequencies used for AIS – AIS 1 (161.975 MHz) and AIS 2 (162.025 MHz). LRIT can employ any form of communication which meets the required functional specification, but most vessels use Inmarsat equipment to report every six hours to their data centre via a communications service provider and application service provider. A vessel monitoring system (VMS) can use various systems for tracking, including Inmarsat, Iridium and Argos."

6 Chapter 3

- Amend the following text in paragraph 3.4.4:

  Replace sub-bullets with following text:

  Agency and person calling;

  Nature of the emergency;

  Significant information from the flight plan:
  - A/C call sign and type;
  - point of departure and departure time;
  - route of flight;
  - destination and ETA;
  - number of persons on board;
  - endurance;
  - colour and distinctive markings;
  - survival equipment carried;
  - dangerous goods;
  - telephone number of pilot in command;

  Unit which made last contact, time, and frequency used;

Last position report and how the position was determined (course, speed, altitude);

Any action taken by the reporting office;

Any direction finder equipment available; and

Other information.

- Amend the following text in paragraph 3.4.7:

  Delete text "(see sample in Appendix C)" from first sentence in subparagraph (b).

- Amend the following text in paragraph 3.5.3:

  Replace text "radio on all frequencies" with "all available means" in subparagraph (b).

  Add text "and vessel tracking systems" after "ship reporting systems" in subparagraph (b).

- Amend the following text in paragraph 3.5.9:

  Add text "Check vessel tracking systems (e.g. AIS, LRIT, VMS, and VTS) for vessels which may be able to assist" at the end of subparagraph (c).

- Amend the following text in paragraph 3.8.6:

  Replace text "Environmental" with "Environment-related" at the beginning of the first sentence.

  Add text "the use of life jackets, immersion suits" after "varies with" in the second sentence.

  Add text "and psychological" between "physical" and "condition" in second sentence.

  Delete text "psychological stress" in second sentence.

  Replace text of third sentence with the following text:

  "Individuals can exceed common life expectancies or tolerance times. (Regarding survival in cold water, the IMO provides more information in its *Pocket Guide to Cold Water Survival*.)"

  Delete last sentence in subparagraph (a).

  Insert new subparagraph (b) and include the following text (and renumber all subparagraphs of paragraph 3.8.6 accordingly):

  "The term "cold" can be applied to water as warm as 25°C (77°F): long periods of immersion in water as high as this temperature can result in a fall in deep body temperature. It follows that most of the planet is covered in "cold" water".
  Delete text "to avoid frostbite. In temperature below 18º Celsius (0º F, survivors become easily fatigued." in subparagraph (c) (old subparagraph (b)).

Replace text of subparagraph (d) (old subparagraph (c)) with the following text:

"The warmest ocean water that can be expected at any time of year is 29°C (84°F). About one third of the earth's ocean surface has water temperatures above 19°C (66°F). Figure N-14 in appendix N shows the realistic upper limit of survival time for people wearing normal clothing in water at various temperatures. The graph is based on the analysis of known survival cases and laboratory experimentation, and shows a reasonable upper limit for search duration. But the search planner must remember that this graph can only be indicative and that a number of uncertainty factors can improve or reduce survival time."

Insert new subparagraph (e) and include the following text:

"Guidelines based on analysis of accidents, together with laboratory-based experimental evidence, show a clear correlation between water temperature, body cooling and survival times. However, it is also apparent that, because of the vast array of personal factors that can influence survival time in cold water, this time can vary from seconds to days. Factors that slow the loss of body heat are:

- high body fat;
- heavy clothing;
- survival clothing; and
- the use of a protective behaviour.

Factors that make a person lose body heat faster are:

- gender (females are more prone to hypothermia);
- age (children and the elderly are more prone to hypothermia);
- low body fat;
- light clothing;
- exercising (such as situations where persons without lifejackets have to swim); and
- seasickness.

Thus, in water at 5°C (41°F), the 50 per cent survival time for a normally clothed individual is estimated to be about one hour, with a recommended search time of six hours. The corresponding times for 10°C (50°F) are two hours and 12 hours. While in water at 15°C (59°F) the 50 per cent survival time is about six hours, with the recommended search time of 18 hours. Between 20°C (68°F) and 30°C (86°F) search times exceeding 24 hours should be considered, and searching for several days should be considered for water temperatures at the upper end of this temperature scale.

As there are many factors to consider, this model cannot be used for all situations. SOLAS survival suits are meant to keep a person alive for 24 hours in extremely cold water; and, a person may be able to keep himself out of the water by climbing onto wreckage, for example. It should be kept in mind that factors working positively on survival times are often unknown to the SMC. Some of these factors include, but are not limited to the following:

- Near-naked swimmers would be at the lower ranges of these times. In calm water there may be an exceptional individual (someone who is very fat and fit) who will exceed expectations. If it is known that the victim is such an individual, consideration should, exceptionally, be given to extending the search times from 3-6 to 10 times the predicted 50 per cent survival time.

- For inshore incidents, survival times may be less because of breaking water and adverse currents. However, consideration must be given to the possibility that the inshore survivor managed to get ashore. Consequently, the limiting effects of cold water cooling will no longer be the only consideration, and the search must be continued until the shore has been thoroughly searched.

- For offshore incidents, it is reasonable to expect that individuals may be better equipped to survive and have access to appropriate protective clothing, lifejackets and possibly liferafts. Consequently, search times for them should be at the upper limits of those expected (10 times predicted 50 per cent survival time), unless obviously adverse conditions prevail – and should exceed them if it is possible that survivors may have been able to get out of the water.

- Survival time is shortened by physical activity (such as swimming) and increased by wearing heavy clothing and, if wearing a lifejacket, adopting protective behaviour (such as huddling with other survivors or adopting a foetal position in the water). Specialized insulated protective clothing (such as immersion suits or wet suits) is capable of increasing survival time from 2 to 10 times. The SMC should bear in mind that ingress of as little as half a litre of water into an immersion/survival suit can reduce its insulation value by 30 per cent, and that wave height of one metre can reduce it by an additional 15 per cent.

Predicting survival times for immersion victims is not a precise science; there is no formula to determine exactly how long someone will survive, or how long a search should continue. The SMC must make some difficult decisions based on the best information available and a number of assumptions, and should extend the search time beyond that which they can reasonably expect anyone to survive."

Move subparagraph (e) (old subparagraph (d)) after subparagraph (f) (old subparagraph (e)).

7 Chapter 4

- Add new paragraph 4.1.4 and include the following text:

  "The methods given in this chapter and in chapter 5 have been simplified for manual use. A computer program can be developed based on this manual solution which could save time and reduce the chance of mathematical errors, but the search plans would not be any better than the results produced by hand. Computers, including typical personal computers and laptops, have large computing and data storage capability and can be programmed to use advanced simulation techniques. Search plans produced by simulation techniques can be significantly better than those produced by the correct application of the manual methods contained within this Manual. Appendix P describes some of the functions a computer-based search planning aid should provide."

- Amend the following text in paragraph 4.3.3:

  Add text "then" between "probable" and "distress" in subparagraph (a).

  Add text "(bell curve)" after "normal distribution" in subparagraph (b).

- Amend the following text in paragraph 4.6.2:

  Add the following text at the end of paragraph:

  "Scenario analysis and development, along with related investigative efforts to obtain more information, often determine a successful outcome to the distress incident. The search planner must think like a detective who is trying to solve an important case or a scientist who is trying to answer an important question. Lines of evidence must be followed to see where they lead. The available facts must be viewed from different perspectives. Missing information must be filled in with different, but plausible, assumptions to create plausible scenarios. At times, several scenarios can be developed that are consistent with all or most of the known facts. These scenarios must be carefully evaluated and weighted according to the search planner's judgement about which scenarios are more likely and which are less likely to represent the actual situation. These efforts can be difficult, demanding tasks and require dedication by the search planner to attain the best chance for success."

- Amend the following text in subparagraph 4.6.13(d):

  Replace text "300/5" with "3/5".

8 Chapter 5

- Amend the following text in paragraph 5.3.2:

  Replace text "electronic" with "radar" in subparagraph (a).

  Delete text "Sweep widths for electro optical searches using infra red image intensifying cameras will be limited by the maximum detection range and maximum field of view of the lens" in subparagraph (a).

Add text "In poor visibility" at the beginning of the second sentence of the first bullet of subparagraph (b).

Replace text "the air, although a" with "an aircraft" in second sentence of the first bullet of subparagraph (b).

Add text "except where a thick overcast layer reduces light levels at the surface" at the end of third bullet of subparagraph (b).

Add text "and use of searchlights and electro-optical systems limited or" between text "stations" and "ineffective" in the third bullet of subparagraph (b).

Replace text of last sentence in subparagraph (e) with the following text:

"However, where it is safe for search units to continue and active aids, such as searchlights, radar, infrared devices, low-light television, or night vision devices are available and usable, then searches could continue."

- Insert section title "Search Area Coverage Records" before paragraph 5.4.7.

- Amend the following text in paragraph 5.4.7:

  Add text "It is important that the SMC also receives information on how effective the search facilities considered their search to have been, given the search conditions at the time." at the end of the paragraph.

- Amend the following text in paragraph 5.5.1:

  Replace text of second sentence with the following text:

  "Examples of this situation include a crew member seeing another crew member fall overboard from a ship or a reported distress from a craft which provides a very accurate position."

  Add text "Instead" at the beginning of the last sentence.

- Amend the following text in paragraph 5.5.2:

  Replace text "automatic" with "easier" at the end of the third sentence.

  Replace text of fourth sentence with the following text:

  "The first leg should usually be down-drift."

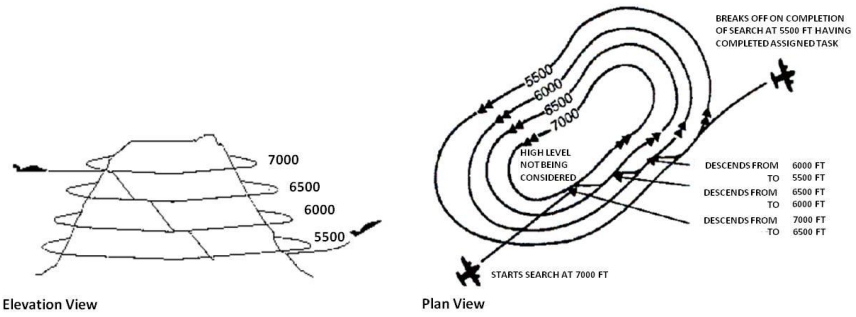
- Amend the following text in paragraph 5.5.4:

  Replace text "within relatively close limits" with "with relatively good accuracy" at the end of the first sentence.

- Amend the following text in Note after paragraph 5.5.5:

  Add text "*or helicopters, but not necessarily fixed-wings assets*" after "*small boats*" in first sentence.

- Replace figure 5.12 with updated version.



- Amend the following text in paragraph 5.5.15:

  Replace text of subparagraph (a) with the following text:

  "The crew must be very experienced, well briefed and have accurate large scale maps (1:100000 scale maps are recommended)."

  Add subparagraph (h) and include the following text:

  "Only one aircraft should be assigned to each contour search area to avoid possible collision with other search aircraft."

- Amend the following text in paragraph 5.6.1:

  Add text "and PLBs" between "EPIRBs" and "operated" at the beginning of second sentence.

- Amend the following text in paragraph 5.6.4:

  Insert new subparagraph (b) and include the following text (and renumber all subparagraphs of paragraph 5.6.4 accordingly):

  "When reports are received of detections of 121.5 MHz or 243 MHz signal from over flying aircraft (these signals are not processed by the Cospas-Sarsat system), a search area will need to be established so that an electronic search can be conducted for the beacon. Appendix [S] can be used for guidance on determining a search area and how that area should be searched."

  Add text "(The procedures could be used by vessels but the lack of equipment for detecting the signal as well as the low height of the vessel make this a less practical search technique.)" at the end of subparagraph (c) (old subparagraph (b)).

- Add text "for Land Search Parties" in title before paragraph 5.8.2.

- Amend the following text in paragraph 5.10.4:

  Delete last sentence of paragraph.

- Amend the following text in paragraph 5.10.11:

Add text "An Aircraft Coordinator (ACO) should be assigned whenever multiple aircraft are operating in close proximity." at the end of the paragraph.

- Amend paragraph cite "5.11.9" in the first line of paragraph to "5.11.8".

- Amend the following text in paragraph 5.12.3:

  Add text "The SMC, or if that is not practicable, the OSC, may designate an Aircraft Coordinator (ACO) to assist in maintaining flight safety as discussed in chapter 1. Considerations as to whether an ACO is designated may include, but are not limited to, multiple aircraft in the search area, aircraft from different countries, weather conditions, communications problems and logistic problems." at the end of the paragraph.

- Amend the following text in paragraph 5.12.4:

  Replace text of first two sentences with the following text:

  "For large-scale searches and searches in controlled airspaces, the SMC should obtain a temporary airspace reservation or flight restrictions to limit aircraft not involved in the search from the appropriate authority. It may then be the responsibility of the SMC, OSC or ACO to make arrangements for separation among the search aircraft if they are unable to provide their own separation."

  Add paragraph number 5.12.6 before sentence beginning with "The primary advantage".

- Amend the following text in paragraph 5.13.2:

  Replace text "present" with "presented" in subparagraphs (b) and (c).

  Add text "and ACO" in all subparagraphs where "OSC" is mentioned.

- Amend the following text in paragraph 5.15.2:

  Add text "and ACO" at the end of the last bullet.

- Amend the following text in paragraph 5.18.1:

  Replace text of paragraph with the following text:

  "The same basic theory of search applies on land as well as in the marine environment. In both cases, the goal is to increase the cumulative POS as quickly as the available resources will allow. However, the planning methods and search techniques used on land are often different from those used in the marine environment. If the initial search object is a forced landing site, then search object motion is likely not an issue. If the search object is a lost or missing person, whether from a forced landing site or some other circumstance such as a lost hiker, hunter or child, search object motion may be an issue. However, in these cases, the influences of lost person's behaviour, weather, terrain, and vegetation take the place of winds, currents, and drift. Aerial search effectiveness is reduced over areas that are mountainous or covered with significant amounts of vegetation. Searching with land facilities may be the only

alternative. Land facility search procedures are covered in the *International Aeronautical and Maritime SAR Manual* for *Mobile Facilities.*"

- Add new paragraph 5.18.2 and insert the following text:

  "Searching for lost persons with ground parties may involve large numbers of searchers. Logistics (keeping track of searchers and providing food and shelter for them) can become quite complex, especially in remote areas. Search environments, and hence sweep width values, can vary dramatically over short distances, such as when pasture lands and dense forests are adjacent to one another. Search assignments normally involve small teams of persons. Search areas are based on terrain, vegetation, a corresponding estimated search speed, sweep width, etc. Decisions about which areas to search when there are insufficient search facilities should be determined by where the cumulative POS can be increased at the greatest rate. Search area boundaries are normally defined by physical features such as ridgelines, water boundaries, roads, trails, fences, visible power lines and pipelines, etc. These search areas may have irregular shapes. Decisions about the best balance between team size (number of persons) and assigned area size must be made. Additional "search" techniques include searching for signs of the lost person's passage (footprints, discarded items, disturbed vegetation, etc.), the use of trackers, both human and animal, and establishing a perimeter around the overall search area, then patrolling it for signs that the lost person crossed the perimeter and left the original search area."

- Insert new paragraph 5.18.3 and include the following text:

  "Search effectiveness can be improved by combining air assets with ground parties."

- Insert new section 5.21 called "Geographic Referencing" and include the following text in new paragraph 5.21.1:

  "If position information is communicated in Latitude and Longitude format in the planning and conduct of a SAR operation, it is recommended that the Degrees, Minutes, Decimal Minutes (DD° MM.mm') format be used."

- Insert new paragraph 5.21.2 and include the following text:

  "Geographic referencing refers to the ability to locate a point on the Earth's surface, either physically or on a chart or map. A system of coordinates is used to define a location in physical space. Mariners and aviators typically use latitude and longitude to define their position but these coordinates can be displayed in different ways and people on land may use a different coordinate system, such as a grid system. On land after a major disaster or in undeveloped areas, landmarks and navigational aids, such as roads, may not be recognizable so the use of a coordinate system may be the only way to find specific locations. Search facilities must have a good geographic reference system to conduct an effective search as well as to safely operate near each other, especially to avoid airspace traffic conflicts."

- Insert new paragraph 5.21.3 and include the following text:

  "Charts and maps have two primary difficulties in providing a location: (1) showing the Earth's spherical shape as a flat surface, and (2) the Earth is not a perfect sphere. Another complication is States using a different basis, or *datum*, for developing charts. Also, land maps may use a local reference point to show positions on the basis of grid distances (usually east and north, in metres) from the reference point. These concerns usually do not interfere with routine, local SAR operations but they can become significant concerns when assisting other States or coordinating with local authorities during disasters. Search planners and SAR facilities need to be aware of these differences, and when feasible, should be using the same charts and maps as well. If it is not possible for all personnel and facilities to use the same coordinate system and maps or charts, the SMC should be prepared to convert position data from one system to another and ensure positions are provided in the appropriate form for use. SAR facilities and personnel using electronic navigation systems (e.g. GNSS) must ensure their navigation devices are set to the appropriate datum and coordinate system."

- Insert new paragraph 5.21.4 and include the following text:

  "For routine SAR operations, Mass Rescue Operations or large scale disasters, SAR agencies must be able to understand how geographic information is communicated among the SMC, OSC, ACO and various SAR facilities. This becomes an even greater challenge when SAR facilities transition between maritime and land-based SAR operations, or in large-scale disaster operations that involve many different SAR facilities that may have different ways to communicate position information. In the development of State and regional SAR plans, States should consider concerns such as:

  How does the SMC effectively use position information from external sources (e.g. general public, other agencies (non-emergency and emergency), etc.) and communicate that position information accurately and efficiently to various aeronautical, marine or land-based SAR facilities in forms they can use?

  Do States have unique, national coordinate systems that may not be familiar to other international SAR facilities requested to assist in a SAR, MRO or disaster response operation?

  What is the "right" reference system that should be used for a specific SAR, MRO or disaster response operation?

  Is there only one reference system that satisfies the requirements of all SAR facilities? If there is more than one reference system, how is the data translated and sent to the various SAR facilities?

  How and when is position information in one reference system converted to another?

  How is position information received in non-standard formats (street addresses, landmark names, etc.) converted to a standard reference format?

  In large scale MRO and disaster operations, how do SAR facilities navigate when landmarks such as street signs and homes are destroyed?

How do multiple SAR facilities safely and efficiently operate in the same area, particularly for mass rescue operations? For aeronautical SAR facilities, avoiding airspace traffic conflicts is a major safety issue to prevent mid-air collisions. The safe operation of multiple aviation SAR facilities in the same area may be highly dependent on all units having a common and accurate sense of their location in relation to other aviation units."

- Insert new paragraph 5.21.5 and include the following text:

"Latitude and longitude are angular measurements in degrees (the symbol, " ° "), minutes (the apostrophe symbol, " ′ "), and seconds (the quotation symbol, " ″ "). However, Latitude and Longitude can be read and written in different formats such as:

- Degrees, Minutes, Decimal Minutes (DD° MM.mm′);
- Degrees, Minutes, Seconds (DDº MM′ SS″); and
- Degrees, Decimal Degrees (DD.DDDDº)."

The SC should standardize how position information is communicated by the SMC, OSC, ACO and SAR facilities to limit confusion in assignments (search areas, survivor locations, etc.) and SAR planning."

9 Chapter 6

- Amend the following text in paragraph 6.8.1:

Delete last sentence in paragraph 6.8.1.

Add text "Survivors might need to be advised to focus on keeping themselves alive rather than trying to assist in their rescue since this could improve their chances of survival." at the end of paragraph.

- Insert new paragraph 6.8.2 and include the following text (and renumber all paragraphs of section 6.8 accordingly):

"When hoisting a person who may be suffering from hypothermia, especially after long-term immersion in water, and especially when lifting them some distance, such as to the deck of a high-sided vessel or into a helicopter, they should be lifted horizontally or near-horizontally. Hoisting such persons in a vertical position may cause loss of consciousness, severe shock or cardiac arrest. A rescue lifting system, rescue basket or stretcher should be used, or two strops or loops with one under the arms and the other under the knees."

- Amend the following text in paragraph 6.13.20:

Delete subparagraph (c).

- Amend the following text in paragraph 6.15.5:

Add text "(MRO communications are discussed in more detail later in this chapter)" at the end of third bullet.

- Insert new section "**Communications planning for MROs**" after paragraph 6.15.35 (add two new paragraphs and renumber all paragraphs following the new 6.15.37).

- Insert new paragraph 6.15.36 and include the following text:

  "Efficient MRO responses depend upon efficient communication – and efficient communication requires planning, understanding of the plan by those who will have to put it into effect and its rapid implementation at the time of the incident. The following are some of the factors MRO communications planners are recommended to consider:

  - Who is likely to be involved in the response to a MRO, including supporting organizations and others with legitimate interest (for example, officials, family members of victims, and the news media)?
  - What are their information needs likely to be?
  - Where do they fit in the overall command, control and coordination (and therefore *communications*) structure?
  - What are the information priorities?
  - What communications facilities do the responders have?
  - Are there enough people to operate the communications systems, potentially over a long period? The planning should include provision for relief personnel.
  - How should these facilities best be used to avoid overload? How should large amount of data (such as search plans or passenger lists) be communicated?
  - Do people know what to say and who to talk to? Do they understand their unit's place in the communications network, other units' roles, and the overall information priorities? Are they aware of the importance of clear procedures and communications discipline?
  - Are there likely to be language difficulties, including potential misunderstanding of technical language?
  - Who will "control and keep order" on the various parts of the communications network, and do they understand this particularly important role ?
  - To what extent are different responders' communications systems and procedures interoperable? Can communications hubs be established or liaison officers exchanged, to help explain priorities, procedures and technical language?
  - How long might the incident last? Distress frequencies may be used for their initial response, but the plan should ensure that these frequencies are cleared as soon as practicable."

- Insert new paragraph 6.15.37 and include the following text:

  "Appendix C outlines a basic MRO communications plan structure."

10 Chapter 7

- Amend the following text in paragraph 7.3.1:

  Add text "VHF" between "and" and "HF" in second sentence.

- Replace text of paragraph 7.4.2 with the following text:

  "In situations such as piracy or armed robbery against ships where the ship or crew is in grave and imminent danger, the master may authorize the broadcasting of a distress message, preceded by the appropriate distress alerts

(MAYDAY, DSC, etc.), using all available radiocommunications systems. Also, ships subject to the SOLAS Convention are required to carry equipment called the Ship Security Alert System (SSAS) for sending covert alerts to shore for vessel security incidents involving acts of violence against ships (that is, piracy, armed robbery against ships or any other security incident directed against a ship). The system is intended to allow a covert activation to be made which alerts the competent authority ashore and denies knowledge of its activation to perpetrators of the acts of violence. Under the SSAS concept, national governments should establish a security forces authority to be in charge of providing the response to such security incidents. The RCC, due to it being available on a 24-hour basis, is often the first point of contact between the ship and coastal authorities concerned. Two common systems for transmitting SSAS alerts are Inmarsat and Cospas-Sarsat. (A sample SSAS alert message is found in appendix B, under RCC-Cospas-Sarsat Message Formats.) National procedures can vary but the role of the RCC, if involved, is usually to receive the SSAS alert and inform the security forces authority that will be in charge of the response. Actions taken by the RCC upon receiving a covert SSAS alert include:

- do not acknowledge receipt of the alert;
- do not attempt to contact the ship originating the alert;
- do not send any communications to other ships in the vicinity of the ship under threat unless directed by the security forces authority;
- if the position of the incident is within its SRR, the RCC should immediately inform its national security forces authority;
- if the position of the incident is outside of its SRR, the RCC should relay the alert to the appropriate RCC using the normal methods of communications; and
- place SAR resources on standby, if appropriate, since it may become a SAR case."

- Amend the following text in paragraph 7.6.1:

  Add text ", or vessels, craft or life-saving appliances left adrift at sea that may cause an unnecessary SAR alert in the future." at the end of fourth sentence.

  Add text "or recovery" between "repairs" and "by" and delete text "more complicated" in fifth sentence.

- Amend the following text in paragraph 7.7.1:

  Add text "As recommended in annex 14, the plan should provide for cooperation and coordination with the rescue coordination centre, as necessary." after first sentence.

  Add text "The plan is to include the ready availability of, and coordination with, appropriate specialist rescue services to be able to respond to emergencies where an aerodrome is located close to water and/or swampy areas or difficult terrain and where a significant portion of approach or departure operations takes place over these areas." at the end of the paragraph.

- Replace text of paragraph 7.7.2 with the following text:

  "Aerodromes should make provisions with local SAR service providers for water rescue and mass casualties near aerodromes as appropriate. The aerodrome emergency plan is required to contain procedures for periodic testing of the adequacy of the plan and for reviewing the results in order to improve its effectiveness. Testing may be by joint exercises conducted so that:"

11 Chapter 8

- Amend the following text in paragraph 8.1.1:

  Replace text of last bullet with the following text:

  "during the distress phase, the SMC or other proper authority determines that further search would be to no avail because additional effort cannot appreciably increase the probability of successfully finding any remaining survivors or because there is no longer any reasonable probability that the distressed persons have survived."

- Amend the following text in paragraph 8.2:

  Add text "and rescue personnel and facilities are returning to normal duties" at the end of first sentence.

12 Appendix list

- Under appendix B "Message Formats", insert new entry at end named "Suggested format for alert information from a commercial locating, tracking and emergency notification service provider to an RCC"

- Under appendix C " Mass Rescue Operations", insert new entry at end named "MRO Communications in a Maritime Incident"

- Under appendix D "Uncertainty Phase Data", amend page D-4 entry to: "Man Overboard (MOB) Checklist"

- Under appendix I "SITREPs and Codes":

  Replace title with "SITREPs and MAREC Code".

  Delete "Code of Standard Phrases for Use Between RCCs and RSCs".

- Under appendix M "Preparing Initial Probability Maps": amend the spelling to "Single" in first and second entries.

- Under appendix N "Tables and Graphs":

  Amend "Chill and Hypothermia Curves (Figures N-13 and N-14)" to: "Wind Chill and Frostbite Curves (Figure N-13)".

  Insert new entry for Figure N-14: "Realistic Upper Limit of survival time Graph (Figure N-14)".

- Insert new last appendix S "Search Planning for 121.5 MHz Distress Beacon Alerts.

13 Appendix A

- Amend the following text in Distress Signals section:

  Add text "Persons in distress may use any means at their disposal to attract attention, make known their position and obtain help (SOLAS chapter IV).

  The use of an international distress signal, except for the purpose of indicating that a person or persons are in distress, and the use of any signal which may be confused with an international distress signal are prohibited. (SOLAS chapter V)." at the end of the section.

14 Appendix B

Insert the following text:

Suggested format for alert information from a commercial locating, tracking and emergency notification service provider to an RCC
(Format based upon Cospas-Sarsat standard format)

Field No.	Field Name	Field Content	Field Format
1	Satellite emergency notification device alert	Satellite emergency notification device distress alert	Header
2	Reporting Centre	Call Centre Identity	Agreed alphabetical abbreviation for Call Centre (e.g. "GEOS")
3	Message Number	Unique Message Number	Call Centre Abbreviation followed by unique message number assigned by call centre (e.g. GEOS/12345)
4	Message Date	Year-Month-Day in the Gregorian calendar	**YYYY-MM-DD** where YYYY is the year, MM is the month of the year between 01 (January) and 12 (December), and DD is the day of the month between 01 and 31
5	Message Transmit Time	Hours:Minutes:Seconds in Coordinated Universal Time (UTC)	**hh:mm:ssZ** where hh is the number of complete hours that have passed since midnight (00-24), mm is the number of complete minutes that have passed since the start of the hour (00-59), ss is the number of complete seconds since the start of the minute (00-60) and Z indicates the use of UTC time.

Field No.	Field Name	Field Content	Field Format
6	Local Time (optional)	Hour:Minutes:Seconds in local time of where device is located	**hh:mm:ss(Local)** where hh is the number of complete hours that have passed since midnight (00-24), mm is the number of complete minutes that have passed since the start of the hour (00-59), ss is the number of complete seconds since the start of the minute (00-60) and Local is replaced with EST, CST, MST, PST or other local time zone abbreviation. Abbreviation shall include Daylight saving time if applicable.
7	Message Type	New Alert or Update (if later include original Message No)	"New" or "Update" as appropriate plus for updates the original message number as per Field #3
8	Destination Responsible SAR Authority	Message Destination	Identity of the SAR Authority that the message is intended for in English
9	Message Source ID	Message Identifier	If alerting device message identifier is different to the message number in Field #3 then insert it here otherwise leave this field blank
10	Device ID	IMEI Number (the 15 digit International Mobile Equipment Identity (IMEI) number of the device)	**AA-BBBBBB-CCCCCC-D** where AA-BBBBBB are the Type Allocation Code (TAC) for the device, CCCCCC is the manufacturer assigned serial number of the device and D is the Luhn check digit
11	Device Manufacturer and Model Number	Identity of the device sending the distress alert	Device Manufacturer and Model Number (e.g. SPOT Satellite GPS Messenger)
12	Satellite System	Identity of the carrier of the distress alert	Identity of satellite system used (e.g. Globalstar, Inmarsat, Iridium)
13	Message	Complete Message	The complete text of the message as transmitted by the device

Field No.	Field Name	Field Content	Field Format
14	Latitude	Latitude in Degrees and Decimal Minutes in WGS84 format	**sDD° MM.mm**' where s indicates if the latitude is North "N" or South "S" of the equator, DD indicates the number of degrees and MM.MMM indicates the number of minutes and decimal parts of minutes of latitude (to an accuracy of approximately 2 m (6 ft))
15	Longitude	Longitude in Degrees and Decimal Minutes in WGS84 format	**sDDD° MM.mm**' where s indicates if the longitude is East "E" or West "W" of the prime meridian, DDD indicates the number of degrees and MM.mm indicates the number of minutes and decimal parts of minutes of longitude (to an accuracy of approximately 2 m (6 ft))
16	Position Source and Accuracy	Location provided by GPS, GLONASS, Doppler, etc. and estimated accuracy of location	Location source (e.g. GPS, GLONASS, Doppler) and estimated location accuracy in Meters (e.g. GPS:10 m)
17	Optional Position Movement and Height	If available speed and course over ground (SOG and COG) and height above sea level	**SSS:CCC:HHHHH** where SSS is the speed over ground (SOG) in Knots (from 1 to 999), CCC is the track made good (Course over Ground (COG)) in degrees (from 1 to 360) relative to True North and HHHHH is the elevation above ground (Height from 1 to 99999) in metres. If any field is not available leave blank
18	Device Database Source	Identity of Where Database Containing User Contact Details Held	Full address and phone numbers (including country, postal/zip code and international telephone dialling codes)

Field No.	Field Name	Field Content	Field Format
19	Registered Name	Name of device Owner	Full name of registered device owner
20	Registered Address	Owner's Address	Full address of device owner including country and postal/ zip code
21	Registered Phone Numbers	Owner's Phone Numbers	Phone numbers including full dialling codes for all phones registered by the Owner including land line and mobile/ cell phone
22	Emergency Contact Details 1	Full Name, Address and Telephone Numbers for first emergency contact	Full name, address and phone numbers (including country, postal/zip code and international telephone dialling codes)
23	Emergency Contact Details 2	Full Name, Address and Telephone Numbers for second emergency contact	Full name, address and phone numbers (including country, postal/zip code and international telephone dialling codes)
24	Supporting Information	Medical, Vehicle, Trip Plan, Numbers in party, etc.	Free text field, in which to provide any additional data that may be of use to SAR
25	Call Centre Contact Details	Full Address and Telephone Numbers for Call Centre	Full address and phone numbers (including country, postal/zip code and international telephone dialling codes)
26	Call Centre Operative	Name of the person handling the alert at the call centre and their direct telephone number	Full name and phone number (including extension if applicable)
27	Remarks	Any additional information that the Call Centre has on the situation	Free text field
28	End Message	End of Message	Message Ends

Sample of alert from a commercial locating, tracking and emergency notification service provider to an RCC

***Alert from a commercial locating, tracking and emergency notification service provider to an RCC ***

Reporting Centre	: GEOS
Message Number	: GEOS/12345
Message Date	: 2011-12-31
Message Transmit Time	: 21:13:39Z
Local Time (optional)	: 15:13:39(EST)
Message Type	: Update to GEOS/12344
SAR Authority	: Jackson County, OR. Sherriff's Department
Message Source ID	:
Device ID	: 49-015420-323751-8
Device Manufacture/Model No.	: SPOT Satellite GPS Messenger
Satellite System	: Globalstar
Message	: "as sent by an emergency notification device"
Latitude	: N42^{o} 06.935'
Longitude	: W122^{o} 42.340'
Position Source and Accuracy	: GPS:10m
Speed:Course:Height (optional)	: 010:034:00500
Device Database Source	: GEOS 1234 Sends Road Springfield, TX. 60092 USA +1 908 145 8389
Registered Name	: John Smith
Registered Address	: 3450 Twin Cedar Drive Ashland, OR 97563 USA
Registered Phone Number	: (541) 772 5899
Emergency Contact Details (1)	: Jane Smith 3450 Twin Cedar Drive Ashland, OR 97563 USA Home (541) 772 5899 Cell (541) 458 9273
Emergency Contact Details (2)	: Jack Smith 8800 Mountain View Drive Phoenix, OR 97543 USA Home (541) 544 5637 Cell (541) 634 9545
Supporting Information	: "Free text field in which to provide any additional data
that may be of use to SAR forces"	
Call Center Contact Details	: GEOS 1234 Sends Road Springfield, TX. 60092 USA +1 908 145 8389
Call Center Operative	: Max Jones +1 908 145 8389 ext 342
Remarks	: "Any additional information on the situation"

********** END MESSAGE **********

15 Appendix C

- Add section C-5 on MRO communications in a maritime incident.

- Amend the following text in the MRO exercises section:

Add text "and operations" at the end of the last bullet of section.

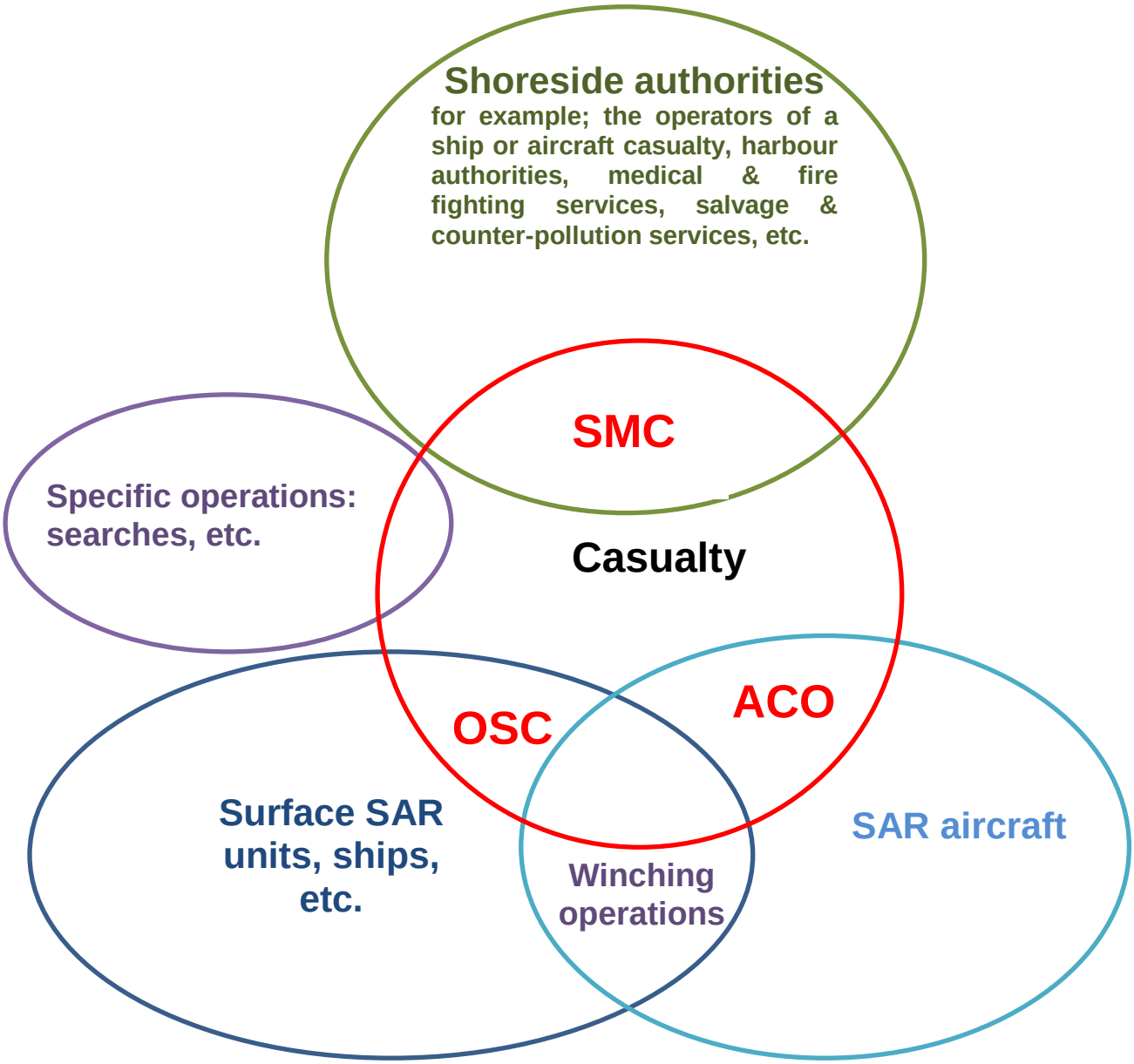
- Amend the following text in the MRO incident management section:

  Replace text "and" with "a" after text "and demands of" in sub-bullet **Incident Command System**.

- Insert section C-5 MRO Communications in a maritime incident and add the following text:

  "**MRO communications in a maritime incident**

  Efficient communications in major maritime response incidents are best arranged by dividing communications between several different frequencies. The number of frequencies used may vary, depending on the circumstances, but is unlikely to exceed five. The diagram below shows a major incident with numerous surface and air units responding and several different activities taking place on scene and, in support, ashore. But the communications plan set up to deal with this incident is relatively simple so that all those responding may readily understand it. And, it needs to be established from the outset which could include relations to the media (see also chapter [Volume III, section 2]).



Concept of a communications plan for a major incident

1 The primary coordinating frequency – initially VHF FM Channel 16 but a common working frequency may be assigned to ensure Channel 16 is available for other distress alerts – is used by the casualty, the OSC, the ACO (if designated) and, if possible, the SMC. If the incident is out of the SMC's VHF range, the SMC will communicate primarily with the OSC by satellite or MF or HF radio communications. Other units on scene should *monitor* the primary coordinating frequency if possible, to be kept up to date by SITREPs, etc., but will not usually transmit on it.

2 Surface SAR units and other surface units such as ships responding to the distress alert will use a second frequency – usually VHF FM channel 6 – controlled by the OSC.

3 Aircraft may also use this second frequency under the OSC's control, if suitably equipped. If responding aircraft are *not* equipped with marine VHF or in cases where it would be more efficient to control them separately (such as multiple aircraft on scene) an ACO should be designated. The aircraft will then use a third frequency – usually VHF AM 123.1MHz – controlled by the ACO.

4 If other activities are taking place on scene, additional frequencies may be used for the necessary communications. If a helicopter, for example, needs to winch to or from a ship, these two units should switch to a mutually compatible frequency not already in use, returning to the main working frequencies after the winching operation is complete. Another example would be a search being conducted as part of the overall SAR operation. In this case the units assigned to the search will switch to a mutually compatible frequency controlled by a search coordinator. This coordinating unit reports to OSC or RCC as appropriate.

5 In a major incident, such as an MRO, there will need to be significant exchange of information with authorities ashore – the operators of a ship or aircraft casualty, harbour and other receiving authorities, shoreside emergency services providing support, authorities and agencies concerned with counter-pollution and salvage operations, and so on. These many organizations should communicate via the RCC, not directly with units on scene. This enables the SMC to maintain a clear overall picture of the response. Efficient procedures for this aspect of the communications plan can and should be pre-planned. The exchange of liaison officers is recommended."

16 Appendix D

- Page D-i, amend "Person Overboard Checklist" to: "Man Overboard (MOB) Checklist.

- Amend "Uncertainty Phase Checklist", page D-1, delete text "(appendix C)" at end of paragraph 10.

- Amend "Person Overboard Checklist" title, page D-4, to: "Man Overboard (MOB) Checklist".

17 Appendix I

- Replace title text with "SITREPs and MAREC Codes" and delete sections on Code of Standard Phrases.

- Amend the following text in the Situation Report Formats and Examples section:

  Add text "or as a briefing tool where a RCC is requesting assistance or action(s) from another RCC or organization." at the end of second sentence.

  Delete text "the" before "casualty" in second paragraph.

  Add text "attach photography if available" at the end of sub-bullet (G).

  Add text "AIS and/or LRIT data available on ships in the vicinity" at the end of sub-bullet (L).

  Add text "As appropriate, pictures, maps or links to websites where further information is available" at the beginning of sub-bullet (N).

Replace text "is" with "should" in Note (6).

Replace text "96" with "13" in both example SITREPs (in three instances).

Replace text "TLX/RTG" with "TLX" everywhere in the MAREC section.

18 Appendix N

- On page N-i, replace "Chill and Hypothermia Curves (Figures N-13 and N-14) with two new entries:

  "Wind Chill and Frostbite Curves (Figure N-13)"

  "Realistic Upper Limit of Search Duration Graph (Figure N-14)". N-20

  Replace "search duration" with "survival time"

- Amend the following text in the Tables and Graphs section:

  Replace text "chill and hypothermia" with "Environmental".

- Amend the following text in the probable Errors of position section:

  Replace text "GPS" with "GNSS" in second row of table.

- Delete section title "Chill and Hypothermia Curves" on page N-20.

  Replace text "hypothermia" with "frostbite" for Figure N-13.

  Replace Figure and text of "Figure N-14 – Water chill and hypothermia" with new figure and text "Realistic upper limit of survival time for people in the water wearing normal clothing, from time of entry into the water (see Volume II, chapter 3 for details)." shown below:

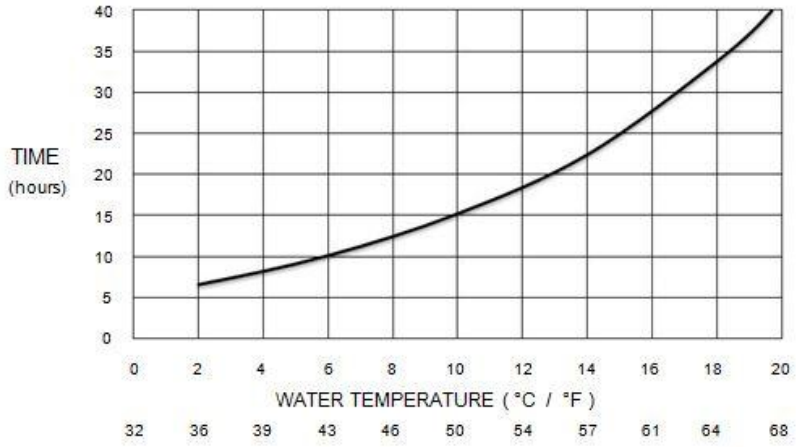


Figure N-14[2] – *Realistic upper limit of survival time for people in the water* wearing normal clothing, from time of entry into the water (See Volume II, chapter 3 for details)

[2] Based on expert medical opinion and latest scientific data.

PROPOSED AMENDMENTS TO IAMSAR MANUAL – VOLUME III

1 Foreword

- Replace original text with the following text:

"The primary purpose of this volume, the "Mobile Facilities (volume III)" is to assist vessels and aircraft in the performance of a search, rescue, or on-scene coordinator function and with aspects of SAR that pertain to their own emergencies. It is intended to be carried aboard rescue units, aircraft and vessels.

A new edition is published every three years. The 2013 edition includes the 2010 amendments (adopted by ICAO and approved by IMO's Maritime Safety Committee at its eighty-seventh session in May 2010 that became applicable on 1 June 2011) and the 2011 and 2012 amendments (adopted by ICAO and approved by IMO's Maritime Safety Committee at its ninetieth session in May 2012 that became applicable on 1 June 2013). The amendments were prepared by the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue at its sixteenth session, in September 2009, seventeenth session, in September 2010, and eighteenth session, in October 2011, respectively, and were endorsed by the IMO Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) at its fourteenth session, in March 2010, fifteenth session, in March 2011, and sixteenth session, in March 2012, respectively.

The Manual is published jointly by the International Civil Aviation Organization and the International Maritime Organization.

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Each IAMSAR Manual volume is written with specific SAR system duties in mind, and can be used as a stand-alone document, or, in conjunction with the other two volumes, as a means to attain a full view of the SAR system. Depending on the duties assigned, it may be necessary to hold only one, or two or all three volumes.

- The *Organization and Management* volume (volume I) discusses the global SAR system concept, establishment and improvement of national and regional SAR systems, and cooperation with neighbouring States to provide effective and economical SAR services;

- The *Mission Coordination* volume (volume II) assists personnel who plan and coordinate SAR operations and exercises;

The primary purpose of the three volumes of the *International Aeronautical and Maritime Search and Rescue Manual* is to assist States in meeting their own search and rescue (SAR) needs and the obligations they accepted under the Convention on International Civil Aviation, the International Convention on Maritime Search and Rescue, and the International Convention for the Safety of Life at Sea (SOLAS). These volumes provide guidelines for a common aviation and maritime approach to organizing and providing SAR services.

States are encouraged to develop and improve their SAR services, to cooperate with neighbouring States and to consider their SAR services to be part of a global SAR system."

2 Abbreviation and acronyms

- Add the following text:

AFTN	aeronautical fixed telecommunication network
AIP	aeronautical Information publication
AIS	automatic identification system (radio navigation)
AIS	aeronautical Information services
AIS-SART	automatic identification system – search and rescue transmitter
ARCC	aeronautical rescue coordination centre
CS	coast station
GNSS	Global Navigation Satellite System
IBRD	International 406 MHz Beacon Registration Database
LRIT	Long-range Identification and Tracking
MMSI	maritime mobile service identity
MOB	man overboard
MRCC	maritime rescue coordination centre
POC	probability of containment
POD	probability of detection
POS	probability of success
SMCP	(IMO) Standard Marine Communication Phrases
SPOC	search and rescue point of contact
SURPIC	surface picture

- Delete the following text:

CIRM	Centra Internazionale Radio Medico
RSC	rescue sub-centre
RTG	radio telegraphy

3 Glossary

- Update the glossary with the following text:

Cospas-Sarsat System	A satellite system designed to detect and locate activated distress beacons transmitting in the frequency band of 406.0-406.1 MHz.
Direction finding (DF)	Radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object.
Homing	The procedure of using the direction-finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously towards the other station.
MAYDAY	The international radio telephony distress signal.

METAREA	A geographical sea area[3] 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 shall not prejudice the delimitation of any boundaries between States.
NAVAREA	A geographical sea area[3] 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 shall not prejudice the delimitation of any boundaries between States.
On-scene endurance	The amount of time a facility is capable of spending at the scene, engaged in search and rescue activities.
PAN-PAN	The international radio telephony urgency signal.
Personal Locator Beacon (PLB)	A portable device, manually activated, which transmits a distress signal on 406 MHz, and may have an additional homing signal on a separate frequency.

- Add the following text:

Area Control Centre (ACC)	An air traffic control facility primarily responsible for providing ATC services to IFR aircraft in controlled areas under its jurisdiction.
Automatic Identification System (AIS)	A system used by ships and vessel traffic services (VTS), principally for identifying and locating vessels.
Automatic identification System –SAR transmitter (AIS-SART)	A survival craft transmitter that sends out an AIS position report based on a built-in GNSS receiver.
Aeronautical Information Services (AIS)	A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation.
Coast Station (CS)	A land station in the maritime mobile service.
Distress alert	The reporting of a distress incident to a unit which can provide or coordinate assistance.

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

Emergency Locator Transmitter (ELT)	A generic term (related to aircraft) describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated.
Emergency position-indicating radio beacon (EPIRB)	A device, usually carried aboard maritime craft, that transmits a distress signal that alerts search and rescue authorities and enables rescue units to locate the scene of the distress.
Flight information centre (FIC)	A unit established to provide information and alerting services.
Geographic information system (GIS)	A system which captures, stores, analyses, manages and presents data that is linked to a location.
Heave	The vertical rise and fall due to the entire ship being lifted by the force of the sea.
Long-range Identification and Tracking (LRIT)	A system which requires certain vessels to automatically transmit their identity, position and date/time at six-hour intervals in accordance with SOLAS regulation V/19-1.
Maritime Domain Awareness (MDA)	The effective understanding of any activity associated with the maritime environment that could impact upon the security, safety, economy or environment.
Personal Locator Beacon (PLB)	A portable device, manually activated, which transmits a distress signal on 406 MHz, and may have an additional homing signal on a separate frequency.
Place of safety	A location where rescue operations are considered to terminate; where the survivors' safety of life is no longer threatened and where their basic human needs (such as food, shelter and medical needs) can be met; and, a place from which transportation arrangements can be made for the survivors' next or final destination. A place of safety may be on land, or it may be aboard a rescue unit or other suitable vessel or facility at sea that can serve as a place of safety until the survivors are disembarked to their next destination.
Ship reporting system (SRS)	Reporting system which contributes to safety of life at sea, safety and efficiency of navigation and/or protection of the marine environment. They are established under SOLAS regulation V/11 or for SAR purposes under chapter 5 of the International Convention on Maritime Search and Rescue, 1979.

Vessel	A maritime craft.
Vessel Monitoring System (VMS)	A tracking system which provides for safety and environmental regulatory organizations to monitor the position, time at a position, course and speed of vessels.
Vessel tracking	A generic term applied to all forms of vessel track data derived from multiple sources such as ship reporting systems, AIS, LRIT, SAR aircraft, VMS and VTS.
Vessel Traffic Services (VTS)	A marine traffic monitoring system established by harbour port authorities to keep track of vessel movements and provide navigational safety in a limited geographical area.

- Delete the following text:

Locating	The finding of ships, aircraft, units or persons in distress.
SarNet	A broadcast system between RCCs within the footprint of an individual satellite.

4 Section 1

- Replace the **Contents** segment text with the following text:

"Purpose……..1-1
Responsibilities and Obligations to Assist……1-1
SAR Coordination
    On-Scene Coordinator……
    SAR Mission Coordinator…….…….
    SAR Coordinators……..
National and Regional SAR System Organization……
Ship Reporting Systems and vessel tracking
    Amver…….
Aircraft Reporting System…….
Underwater search and rescue"…….

- Move segment on **National and Regional SAR System Organization** to before segment on **Ship Reporting System and Vessel Tracking**.

- Replace the **SAR Coordination** segment text with the following text:

"The SAR system has three general levels of coordination:

- On-scene coordinators (OSCs).
- SAR mission coordinators (SMCs) (Rescue coordination centre)
- SAR coordinators (SCs) (National level)

- **On-Scene Coordinator**

  - When two or more SAR facilities are working together on the same mission, one person on-scene may be needed to coordinate the activities of all participating facilities.

  - The SMC designates an OSC, who may be the person in charge of a:

    - search and rescue unit (SRU), ship, or aircraft participating in a search, or

    - nearby facility in a position to handle OSC duties.

  - The person in charge of the first facility to arrive at the scene will normally assume the OSC function until the SMC arranges for that person to be relieved.

- **SAR Mission Coordinator**

  - Each SAR operation is carried out under the guidance of an SMC. This function exists only for the duration of a specific SAR incident and is normally performed by the RCC chief or a designee. The SMC may have assisting staff.

  - The SMC guides a SAR operation until a rescue has been achieved or it becomes apparent that further efforts would be of no avail.

  - The SMC should be well trained in all SAR processes, be thoroughly familiar with the applicable SAR plans, and:

    □ gather information about distress situations
    □ develop accurate and workable SAR action plans
    □ dispatch and coordinate the resources to carry out SAR missions.

  - SMC duties include:

    □ obtain and evaluate all data on the emergency
    □ ascertain the type of emergency equipment carried by the missing or distressed craft
    □ remain informed of prevailing environmental conditions
    □ if necessary, ascertain movements and locations of vessels and alert shipping in likely search areas for rescue, lookout and/or radio watch
    □ plot the areas to search and decide on methods and facilities to be used
    □ develop the search action plan and rescue action plan as appropriate
    □ coordinate the operation with adjacent RCCs when appropriate
    □ arrange briefing and debriefing of SAR personnel
    □ evaluate all reports and modify search action plan as necessary
    □ arrange for refuelling of aircraft and, for prolonged search, make arrangements for the accommodation of SAR personnel
    □ arrange for delivery of supplies to sustain survivors
    □ maintain in chronological order an accurate and up-to-date record
    □ issue progress reports

- □ determine when to suspend or terminate the search
- □ release SAR facilities when assistance is no longer required
- □ notify accident investigation authorities
- □ if applicable, notify the State of registry of the aircraft
- □ prepare a final report.

▪ **SAR Coordinators**

- SCs are the top level SAR managers; each State normally will have one or more persons or agencies for whom this designation may be appropriate.

- SCs have the overall responsibility for:

  - □ establishing, staffing, equipping and managing the SAR system
  - □ establishing RCCs and rescue sub-centres (RSCs)
  - □ providing or arranging for SAR facilities
  - □ coordinating SAR training
  - □ developing SAR policies.

- Add text "and Vessel Tracking" to the **Ship Reporting Systems** segment.

- Amend the following text in the **Ship Reporting Systems and Vessel Tracking** segment on page 1-4:

  Insert new last bullet before segment on **Amver** and include the following text:

  "Automatic Identification System (AIS) and Long-range Identification and Tracking (LRIT) transmissions are also important for providing shore authorities with real or near real time vessel tracking data to support search and rescue."

5 Section 2

- Amend the following text in **Contents** segment:

  Replace text "rescue litter" with "rescue stretcher".

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Vessels Assisting**, sub-segment on ***Methods of Distress Notification***, page 2-1:

  Replace text of first three bullets with the following text:

  - A distress call or other emergency information from another vessel at sea, either directly or by relay.

  - A distress call or message from aircraft. This will normally occur by relay from an aircraft, RCC or CRS.

  - Alert from a vessel.

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Vessels Assisting**, sub-segment on ***Immediate Action***, page 2-1:

Add text "(for DSC acknowledgement see flow charts)" at the end of first sub-bullet under bullet starting with "The following immediate …".

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Vessels Assisting**, sub-segment on ***Immediate Action***, page 2-2:

  Delete text "500 kHz (radiotelegraphy)" under sub-bullet starting with "maintain a continuous …".

  Add text "or beacon distress signals" at the end of text "121.5 MHz AM (radiotelephony) for aircraft distress" under sub-bullet starting with "maintain a continuous …".

  Delete text "after 1 February 1999 at beginning of sub-bullet.

  Add text "AIS-search and rescue transmitters (AIS-SARTs)" at the end of text of sub-bullet starting with "SOLAS communications equipment …".

  Replace text "Global Positioning System (GPS)" with "Automatic Identification System (AIS) and Global Navigation Satellite System (GNSS)" in sub-bullet starting with "Use all available …".

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Vessels Assisting**, sub-segment on ***Proceeding to the Area of Distress***, page 2-5:

  Insert text "if possible AIS data and" between "Maintain" and "active" in second bullet.

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Vessels Assisting**, sub-segment on ***On-Board Preparation***, page 2-5:

  Insert two new bullets at the beginning of sub-segment and include the following text:

  - A vessel *en route* to assist a distressed craft should prepare for possible SAR action on scene, including the possible need to recover people from survival craft or from the water. See "Recovery of survivors by assisting vessels" later in this section.

  - Masters of vessels proceeding to assist should assess the risks they may encounter on scene, including the risks such as those associated with leaking cargo, etc. Information should be sought as necessary from the distressed craft and/or from the RCC.

  Replace text "litter" with "stretcher" in ***Life-saving and rescue equipment*** list.

  Replace text "SMC" with "RCC" in ***Life-saving and rescue equipment*** list.

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Aircraft Assisting**, sub-segment on ***Distress Call and Message Received***, page 2-7:

  Replace text "an alarm signal or a distress call" with "a distress call or other emergency information" in first sentence of second bullet.

Replace text "EPIRB or ELT" with "EPIRB, ELT or PLB" in second sentence of third bullet.

- Amend the following text in sub-section **Initial Action by Assisting Craft,** segment on **Aircraft Assisting**, sub-segment on ***Proceeding to Area of Distress***, page 2-8:

  Replace text under ***Navigation Equipment*** header with the following text:

  □ aircraft designated for SAR operations should be equipped to receive and home in on:

  - radio transmissions
  - 406/121,5 MHz distress beacons (ELTs, EPIRBs and PLBs)
  - SARTs
  - AIS transmitters

  □ precise navigation equipment such as GNSS can be helpful in covering a search area carefully or locating a datum.

  Replace text under ***Communications Equipment*** header with the following text:

  □ all aircraft should be equipped to maintain good communications with the RCC and involved aeronautical SAR facilities.
  □ designated SAR aircraft engaged in SAR operations at sea should be equipped to communicate with vessels and survival craft.
  □ designated SAR aircraft should be able to communicate with survivors on VHF-FM on Channel 16 (156.8 MHz) and VHF-AM on 121.5 MHz as a minimum.
  □ carriage of droppable radios operating on 123.1 MHz and/or ch.16 can be used for communications with survivors.
  □ carriage of portable radios may be appropriate for aircraft SAR units to communicate with maritime or land SAR facilities and OSCs.

- Amend the following text in sub-section **Search Function,** sub-segment on ***search Action Plan and Message***, page 2-9:

  Insert text "(if designated)" between "OSC" and "and" in second bullet.

  Add text "and efforts achieved in previous searches" at the end of bullet starting with "The OSC may …".

- Delete text "Developing" from sub-segment ***Developing Own Search Planning*** in sub-section **Search Function,** page 2-10:

- Amend the following text in sub-section **Search Function,** sub-segment on ***Own Search Planning***, page 2-10:

  Insert bullet at beginning of sub-segment, and include the following text:

  - Normally the SMC will determine the search area by use of search planning tools at the RCC and in cooperation with the OSC.

- Amend the following text in sub-section **Search Function,** sub-segment on ***on-Scene Radiocommunications***, page 2-11:

  Replace text "shift" with "change" in second sub-bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Rescue Action Plan and Message**, page 2-16:

  Add text "(if designated)" between "OSC" and "and" in the first bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Assistance by SAR Aircraft**, sub-segment on ***Assistance by Helicopters***, page 2-19:

  Replace text "litter" with "stretcher" in the sixth bullet.

  Move last bullet of sub-segment to ***Rescue Sling***.

  Add text "if possible together with a helicopter crew member" at the end of first bullet of ***Rescue Sling***.

  Replace text "Some" with "Most" at the beginning of first bullet of ***Double Lift Method***.

  Replace text "litter" with "stretcher" in second bullet of ***Double Lift Method***.

  Replace text "litter" with "stretcher" in title ***Recue Litter*** and in following bullets and diagram.

- Amend the following text in sub-section **Rescue Function,** segment on **Helicopter Operations**, sub-segment on ***General***, page 2-23:

  Insert new bullet after first bullet and include the following text:

  "Follow the instructions of the rescue facility and inform when unable to do so. In principle only act after instructions of the rescue facility."

  Add text "The distressed vessel's captain is responsible for the safety of his vessel and personnel and may decide against the winching." at the end second-to-last bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Helicopter Operations**, sub-segment on ***Communications between Ship and Helicopter for Winching Operations***, page 2-24:

Insert text "heave" between "roll" and "sea" in seventh bullet of ***Helicopter to Ship***.

- Amend the following text in sub-section **Rescue Function,** segment on **Helicopter Operations**, sub-segment on ***Sample Briefing to Vessel Prior to Winching***, page 2-26:

- Insert text "and instruct you about the winching procedures" at the end of sentence starting with "the helicopter will…".

- Add text "If a helicopter crewman is lowered down, follow his instructions. If this is not the case, act as follows:" at the end of paragraph and move text from paragraph into the following bullets:

  - "***Do not attach the loose hook or the trail line to your vessel!***
  - ***If you have to move the rescue device from the pick-up area to load the patient, unhook the cable and trail line from the rescue device and lay the loose hook on the deck so it can be retrieved by the helicopter.***
  - ***The helicopter may move to the side while the patient is being loaded.***
  - ***Have the patient wear a lifejacket, and attach any important records, along with a record of medications that have been administered.***
  - ***When the patient is securely loaded, signal the helicopter to move into position and lower the hook.***
  - ***After allowing the hook to ground on the vessel, re-attach the hook and the trail line to the rescue device.***
  - ***Signal the winch operator with a "thumbs up" when you are ready for the winching to begin.***
  - ***As the rescue device is being retrieved, tend the trail line to prevent the device from swinging.***
  - ***When you reach the end of the trail line, gently toss it over the side.***"

- Amend the following text in sub-section **Rescue Function,** segment on **Helicopter Operations**, sub-segment on ***Positioning of Landing or Pick-up Areas***, page 2-29:

  Add text "radar antenna" at the end last sub-bullet.

  Replace text of second-to-last bullet with the following text:

  "Loose objects should be cleared away or secured due to downwash from the helicopter."

  Replace text "air-current" with "downwash" at the end of last bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Helicopter Operations**, sub-segment on ***Safety Precautions***, page 2-30:

Add text "or the trail line" between "device" and "on" and replace text "rigging of fixtures" with "rigging or fixtures" in sixth bullet.
Insert new bullet after sixth bullet and include the following text:

"Never fix a trail line to a person".

Add text "relative" before "Wind direction" in diagram on page 2-31.

Add text "or stop operations" at the end of first sentence of **FINISHING OPERATIONS** diagram.

- Amend the following text in sub-section **Rescue Function,** segment on **Rescue by Maritime Facilities**, sub-segment on ***General Maritime Considerations***, page 2-33:

  Delete text "For survivors in the water" from first bullet

  Replace text "rig scramble nets" with "use recovery equipment" in first sub-bullet of first bullet.

  Replace text "lifeboats" with "rescue boats" in second sub-bullet of first bullet.

  Add text "or other survival aid" at the end of third sub-bullet of first bullet.

  Delete text "to enter the water" from fourth sub-bullet of first bullet.

  Delete text "be prepared to" from fifth sub-bullet of first bullet.

  Replace text "the use of oil for reducing the effect of the sea should be considered" with "an area of sea may significantly calmed by a large vessel circling at reduced speed" in third bullet.

  Delete text "Experience has shown that" and replace text "are most suitable" with "may also be useful" in first sub-bullet of third bullet.

  Delete second sub-bullet of third bullet.

  Delete text "in heavy weather" in last sub-bullet of third bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Rescue by Maritime Facilities**, sub-segment on ***Recovery of Survivors by Assisting Vessels***, page 2-37:

  Add text "or loops" after "strops" and add text "However, especially for short lifts, do not delay if the survivor's airway (mouth/nose) is threatened by, for example, backwash from the rescuing vessel, but lift by the quickest method. If a rescue craft has been deployed to recover the survivor, he should, if possible, remain in the craft during its recovery on board the ship." at the end of third bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Rescue by Land Facilities**, page 2-38:

  Insert two new sub-bullets immediately under first bullet and add the following text:

  □ Movement in the vicinity of crash sites can be extremely hazardous for ground parties on account of toxic fumes, dangerous substances (including radioactive substances) and explosives. Extreme care should be taken when approaching such a crash site and advice sought from RCC or expert authorities wherever possible before approaching crash site.

  □ Personnel should wear Personal Protective Equipment and all work should be carried out upwind of the wreckage wherever possible.

  Add text "ordnance, leaking fuel tanks, pyrotechnics" between "material" and "or" in third sub-bullet (previously first sub-bullet).

  Add text "expert advice should be sought before approaching the crash site wherever possible" at the end of third sub bullet (previously first sub-bullet).

  Insert new sub-bullet after third sub-bullet and include the following text:

  □ Some civil light aircraft are fitted with ballistic recovery parachute systems which eject a powerful rocket which pulls a parachute from a container attached to or in the airframe. Activation handles are normally coloured red and should not be touched or moved. The ejection hatch of the parachute rocket should be identified and personnel warned to keep clear.

  Replace text "except to assist in" with "except to the minimum necessary to assist in the" in the second-to-last sub-bullet.

  Delete text "from the SMC" in the last sub-bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Handling of Deceased Persons**, page 2-40:

  Delete text "from the SMC" in the second bullet.

- Amend the following text in sub-section **Rescue Function,** segment on **Contact with the media** , page 2-42:

  Replace text "land or marine search" with "search at sea or on land" in eight sub-bullet of fourth bullet.

- Amend the following text in sub-section **Other Assistance,** page 2-43:

  Add text "or to prevent future, unnecessary reports or reactions" at the end of fourth sub-bullet of first bullet.

- Amend the following text in sub-section **Other Assistance,** segment on **Aircraft Ditching**, sub-segment on ***Communication***, page 2-52:

  Delete third bullet of topic ***Radio***.

Replace text "advise" with "seek advice" in bullet starting with "If not able …" in fourth bullet (previously fifth bullet).

Replace text "and ask them to establish a voice watch on 4125 kHz to assist in ditching and rescue" with "The appropriate RCC can assist the ATS unit." in fourth bullet (previously fifth bullet).

Delete text "500 kHz" in fifth bullet (previously sixth bullet).

- Amend the following text in sub-section **other Assistance,** segment on **Aircraft Ditching**, sub-segment on ***Communications,*** page 2-53:

  Delete all text under topic ***Prefix call sign***.

- Amend the following text in sub-section **Training,** segment on **Maritime Search and Rescue Facilities**, sub-segment on ***First Aid,*** page 2-60:

  Add text "Regular" at the beginning of the first bullet.

  Replace second bullet, and associated sub-bullets, with the following text:

  - Appropriate training aids should be used and copies of a first aid manual should be issued. The syllabus should include, as appropriate, depending on equipment available:

    □ Use of rescue lifting systems and other devices for removing survivors from water
    □ fundamental first aid, with emphasis on revival of the partially drowned and treatment for shock, prolonged immersion, hypothermia, and burns
    □ cardiopulmonary resuscitation (CPR)
    □ use of automated external defibrillators (AEDs)
    □ administration of oxygen.

    Attention is also drawn to the guidance on first aid given in the IMO *Pocket Guide to Cold Water Survival.*

- Amend the following text in sub-section **Training,** segment on **Land Search and Rescue Facilities**, page 2-61:

  Insert new sub-bullet after seventh sub-bullet of third bullet and include the following text:

  □ knowledge of safety requirements for working around and within aircraft wreck sites.

  Delete last sub-bullet of fourth bullet.

6 Section 3

- Amend the following text in **Contents** segment:

  Delete text "RSC".

  Move text "Joining Entry Report" after "On-Scene Communications".

Delete text "Maritime Radio Telex".

Replace text "Radio Communication Frequencies for Distress Purposes" with "Radio Frequencies Available for Maritime Safety and SAR Communications".

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***Requirements for Coordination***, page 3-1:

  Delete text "or RSC" everywhere it is mentioned in sub-segment.

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***Coordination by Land-Based Authorities***, page 3-2:

  Add text "Rescue Sub Centres" before "RSC" in second bullet.

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***On-Scene Coordination***, page 3-2:

  Delete text "in the response" and add text "may" between "incident" and "effect" in first bullet.

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***Designation of On-Scene Coordinator (OSC)***, page 3-2:

  Replace text "should" with "may" in first two bullets.

  Add text "if necessary" between "should" and "be" in the third bullet.

  Replace text "within the search area" with "of facilities on scene" at the end of the third bullet.

  Add text "endurance," between "the" and "communications" in the fifth bullet.

  Add text "on scene with the RCC" after "communications" in sub-bullet of fifth bullet.

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***OSC Duties***, page 3-3:

  Replace text "Receive the" with "Carry out the received" at the beginning of the second bullet.

  Insert new bullet after the fourth bullet and add the following text:

  □ Provide relevant information to the other SAR facilities.

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***Designation of Aircraft Coordinator (ACO)***, page 3-4:

  Add text "Duties of" at the beginning of the sixth bullet.

Add text "carried out from" between "be" and "a" in the sixth bullet.

Add text "such as ATS unit or RCC" at the end of the sixth bullet.

- Amend the following text in sub-section **Coordination of Search and Rescue Operations**, sub-segment on ***ACO Duties***, page 3-4:

  Replace text "maintain" with "Assist in maintaining" in first bullet and first sub-bullet.

  Move the sub-segment on ***Joining Entry Report***, page 3-5 after sub-segment on ***On-Scene Communications***.

- Amend the following text in sub-section **Communications**, sub-segment on ***On-Scene Communications***, page 3-7:

  Insert bullets after the first bullet and add the following text:

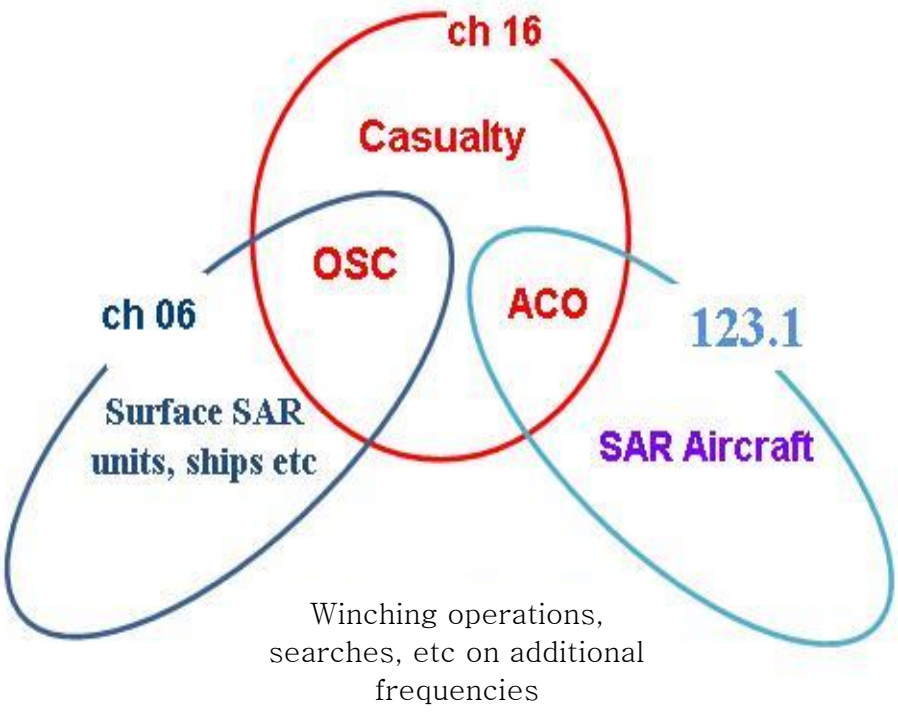
  - If there are several aircraft involved in the SAR operation and the OSC does not have specific aircraft coordination capability, an Aircraft Coordinator (ACO) should be appointed to assist in maintaining flight safety.

  - If there are relatively few units responding communications may be kept on one coordinating frequency.

  - In more complex cases communications should be divided for the sake of efficiency and avoidance of frequency congestion.

    □ A ship casualty, the OSC and the ACO should work VHF Channel 16.
    □ Other units on scene should use working frequencies for their own part of the operation. Surface units usually use VHF Channel 6, coordinated by the OSC. Aircraft coordinated by an ACO should use 123.1MHz.
    □ These units should also *monitor* the main coordination frequency if possible so as to maintain an overall understanding of the situation. SITREPs may be used by the OSC to keep all units fully informed.
    □ Other frequencies may be used, as directed by the OSC, for specific operations – for example a winching operation between helicopter and ship, or a surface search being conducted by some units as part of a wider operation.

A basic communications plan structure is shown below.



Add text "and/or ACO" after "OSC" in last bullet.

Replace text "shift" with "change" in first sub-bullet of last bullet.

- Amend the following text in sub-section **Communications**, sub-segment on ***OSC Communications with RCC or RSC,*** page 3-7:

  Delete text "or RSC" in the sub-segment title.

  Delete text "and RSCs" in first sub-bullet of first bullet.

  Replace text "one or two word" with "short" in fourth sub-bullet under *Identification* of fourth bullet.

- Amend the following text in sub-section **Communications**, sub-segment on ***RCC and RSC Communications,*** page 3-9:

  Delete text "and RSC" in the sub-segment title.

  Delete header and related text under ***Maritime Radio Telex***.

Insert new bullet at the beginning of the sub-segment and include the following text:

- RCC are normally contacted by:

  - □ dedicated phone number;
  - □ e-mail;
  - □ fax;
  - □ coastal radio station;
  - □ satellite Land Earth Station;
  - □ direct satellite communication; or
  - □ HF, MF or VHF radio.

For information on contact details for RCCs, refer to the Admiralty List of Radio Signals (ALRS) Volume V or the appropriate Aeronautical Information Publication.

Add text "initial distress and urgency alerts and" after "promulgate" in first bullet under header ***Maritime Safety Information***.

Delete text "and may be used by SAR personnel for SAR-related broadcasts" at the end of the first bullet under header ***Maritime Safety Information****.*

Replace text "with" with "through" in first sub-bullet of second bullet under header ***Maritime Safety Information****.*

Replace text "personnel" with "authority" in second sub-bullet of second bullet under header ***Maritime Safety Information****.*

Delete last bullet under header ***Maritime Safety Information***.

Delete text "For" at the beginning of second bullet under header ***Phonetic Alphabet and Figure Code***.

Replace text "obtain a copy of" with "is found in" in the second bullet under header ***Phonetic Alphabet and Figure Code***.

Add text "(INTERCO)" at the end of second bullet under header ***Phonetic Alphabet and Figure Code***.

- Amend the following text in sub-section **Communications**, sub-segment on ***Radio Communication Frequencies for Distress Purposes,*** page 3-10:

Replace sub-segment title with "Radio Frequencies available for distress, maritime safety and SAR Communications.

Replace table on pages 3-11 and 3-12 with the following:

Function	**System**	**Frequency**
Alerting	406 MHz Distress beacon	406–406.1 MHz (earth-to-space)
	Inmarsat SES	1544–1545 MHz (space-to-earth) 1626.5–1646.5 MHz (earth-to-space) 1645.6–1645.8 MHz (earth-to-space)
	VHF DSC (Channel 70)	156.525 MHz[1]
	MF/HF DSC[2]	2187.5 kHz[3] 4207.5 kHz 6312 kHz 8414.5 kHz 12577 kHz 16804.5 kHz
	VHF AM	121.5 MHz
	VHFFM (Channel 16)	156.8 MHz
On-scene communication	VHF Channel 16	156.8 MHz
	VHF Channel 06	156.3 MHz
	VHF AM	123.1 MHz
	MF Radiotelephony	2182 kHz
	MF NBDP	2174.5 kHz
Communications involving aircraft	On-scene, including SAR radiotelephony	156.8 MHz[4] 121.5 MHz[5] 123.1 MHz 156.3 MHz 2182 kHz 3023 kHz 4125 kHz 5680 kHz[6]
Homing signals	406 MHz Distress beacons	121.5 MHz and the 406 Mhz signal
	9 GHz radar transponders (SART)	9200–9500 MHz
Maritime safety information (MSI)	NAVTEX Warnings	518 kHz[7]
	NBDP	490 kHz[8] 4209.5 kHz[9] [8] 4210 kHz 6314 kHz 8416.5 kHz 12579 kHz 16806.5 kHz 19680.5 kHz 22376 kHz 26100.5 kHz
	Satellite Safety NET	1530–1545 MHz (space-to-earth)
Safety of navigation	VHF Channel 13	156.650 MHz
Distress and safety traffic	Satellite	1530–1544 MHz (space-to-earth) & 1626.5–1646.5 MHz (earth-to-space)
	Radiotelephony	2182 kHz 4125 kHz 6215 kHz 8291 kHz 12290 kHz 16420 kHz 156.8 MHz
	NBDP	2174.5 kHz 4177.5 kHz 6268 kHz 8376.5 kHz 12520 kHz 16695 kHz
Survival craft	VHF Radiotelephony	156.8 MHz & one other frequency in the 156-174 MHz band
	9 GHz radar transponders (SART)	9200-9500 MHz
	AIS-SART	161.975 MHz/162.025 MHz

Delete note 8 under table page 3-12 and re-number note 9.

Delete text "Cospas-Sarsat satellite location & aircraft" in table **Frequencies for use in the GMDSS**.

Replace text "406.025" with "406.0-406.1" at the end of table **Frequencies for use in the GMDSS**.

Delete text "*For use after full implementation of GMDSS (1 February 1999)" under **Frequencies for use in the GMDSS**.

Replace text "alarm signals before transmitting the message until contact has been established" with "procedures" in first bullet under header **Maritime**.

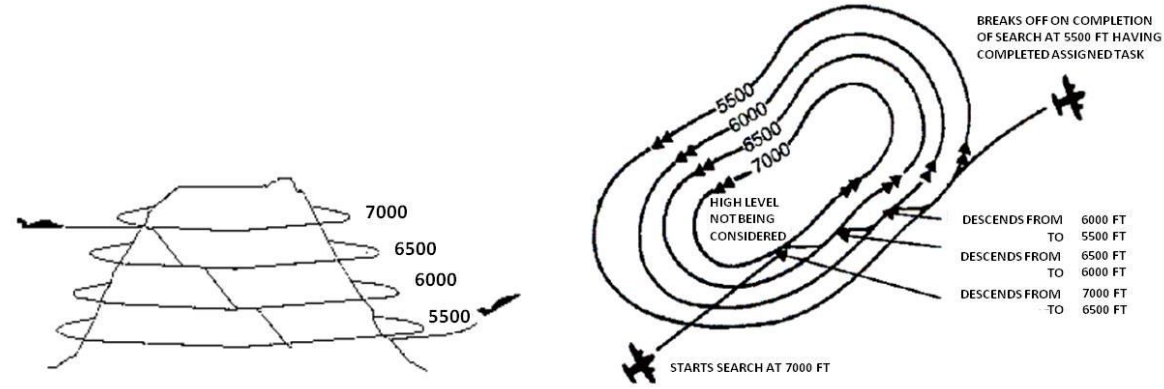
Add text "/RCCs" after "CRSs" in first bullet under **Aeronautical**.

Replace text "are not" with "may not be" in first bullet under "**Aeronautical**".

- Amend the following text in sub-section **Planning and Conducting the Search**, sub-segment on ***Responsibilities of OSC,*** page 3-14:

  Delete text "or RSC" after "RCC" in first bullet.

  Replace "Contour search (OS)" figure with the following one:



- Amend the following text in sub-section **Planning and Conducting the Search**, sub-segment on ***Survival and Emergency Radio Equipment,*** page 3-38:

  Delete text "alerting" in first bullet.

  Delete bullet starting with "L-Band is …".

  Delete text "500 kHz" in bullet starting with "The following frequencies".

Replace text of bullet starting with "Many civil aircraft …" and the corresponding sub-bullets with the following:

- Many civil aircraft worldwide, especially operating on international flights and over ocean areas, carry the 406 MHz distress beacon for alerting and homing. Some national regulations may allow for 121.5 MHz distress beacons on domestic flights.

  □ SAR aircraft should be able to home on the 121.5 MHz homing frequency on the 406 MHz distress beacon, and the capability exists to home on the 406 MHz signal itself.

Insert new bullet after bullet starting with "Many civil aircraft …" and include the following text:

□ EPIRBs and ELTs operate on the 406 MHz frequency and are required to be carried on board certain vessels and aircraft, respectively. The 406 MHz PLB is not required internationally but can be carried on a person.

Replace text "406 MHz ELTs and 406 MHz and Inmarsat-E satellite EPIRBs" with "406 MHz distress beacons (ELTs, EPIRBs and PLBs)" inn bullet starting with "406 MHz ELTs …".

Delete bullet "After January 1999:" and change following sub-bullets to bullets.

Insert bullet after bullet starting with "SOLAS ships should …" and include the following text:

□ AIS-SART (AIS Search and Rescue transmitter) is an alternative to survival craft radar transponders. AIS-SART is a transmitter which sends a signal to the AIS system. It is programmed with a unique ID code and receives its position via an internal GNSS. The AIS-SART is detected on both AIS Class A and B and AIS Receivers. The AIS target will be shown on ECDIS or chart plotters as a RED circle with a cross inside.

Replace text "500" with "300" in bullet starting with "Ships of 500 …".

Replace text "will no longer be" with "are not" in bullet starting with "Ships of 500 …".

Delete text "500 kHz (telegraphy)" in bullet starting with "Ships of 500 …".

Replace text "these frequencies" with "this frequency" in bullet starting with "Ships of 500 …".

Replace text "EPIRB" with "Distress beacon (ELT and EPIRB)" in bullet starting with "EPIRB signals indicate …".

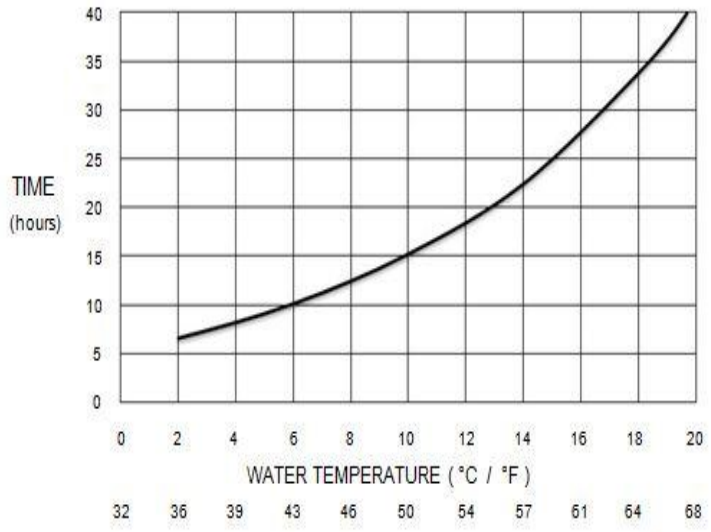
- Amend the following text in sub-section **Conclusion of Search**, sub-segment on ***Search Unsuccessful,*** page 3-40:

Insert two new bullets and a diagram after bullet starting with "The OSC may…" and include the following text:

- The following diagram shows realistic survival times for people believed to be in water at various temperatures. If there is a possibility that survivors may have survival equipment or have been able to get out of the water, search times should be extended.

- Remember that the graph can only be indicative. Predicting survival times in immersion victims is not a precise science; there is no formula to determine exactly how long someone will survive, or how long a search should continue. In water temperatures above 20°C (68°F) search times exceeding 24 hours should be considered.

Graph on Realistic upper limit of survival time for people in the water wearing normal clothing, from time of entry into the water[4]



Delete the bullet starting with text "The following diagrams …" and the corresponding diagrams.

Delete text starting with "Guide to survival …" and associated diagram.

Add text "/RCC" after "authorities in the bullet starting with "The OSC, after …".

7 Section 4

- Amend the following text in **Contents** segment:

  Replace text "Person Overboard" with "Man Overboard".

  Add item "Collision" under "Ship Emergencies at Sea".

- Amend the following text in sub-section **Distress Alert Notification**, sub-segment on ***Distress Signals***, page 4-1:

  Delete text "(pronounced M'AIDER)" in first sub-bullet of first bullet.

  Replace text "person overboard" with "man overboard situation" in first sub-bullet of "Distress signal".

  Delete text "(pronounced PAHN-PAHN)" in second sub-bullet of "Distress signal".

  Replace text "SECURITY" with "SÉCURITÉ" and replace text "SECURITAY" with "SE-CURE-E-TAY" in third sub-bullet of "Distress signal".

- Amend the following text in sub-section **Distress Alert Notification**, sub-segment on ***Methods of alert***, page 4-3:

  Replace first bullet, and associated sub-bullets, of ***Distress Alert from a Vessel*** with the following text:

  - Use any of the Global Maritime Distress and Safety System (GMDSS) equipment to transmit a distress alert:

    □ Inmarsat distress call
    □ VHF channel 16 (156.8 MHz FM)
    □ DSC on (VHF/MF or HF)
    □ EPIRB

    - any distress transmissions on the frequency VHF channel 16, 2182 kHz could be preceded by a digital selective call.

    - in remote oceans areas, the distress call should also be transmitted on a ship-to-shore HF circuit to a CRS, especially when distress calls on 2182 kHz, or channel 16 are not replied to by other stations.

    - [If non-GMDSS satellite communication is available this could be also used …]

  Add text "/243.0" after "121.5" and add text "and no data link communication is available" at the end of second bullet under ***Distress Alert from an Aircraft***.

  Insert sub-bullet after sub-bullet starting with "set transponder to …" and include the following text:

  □ set data link equipment to the appropriate emergency code, if so equipped.

  Replace title "***EPIRBs and ELTs***" with "***EPIRBs, ELTs and Personal Locator Beacons (PLBs) Distress Beacons***".

  Delete the first bullet point under "EPIRBs and ELTs": "EPIRBs and ELTs are another […] of alerting are inadequate."

Add text "**EPIRB:**" at the beginning of the bullet starting with "An EPIRB transmits …".

Add text "It is activated automatically upon exposure to the sea, or manually. 406 MHz EPIRBs use Cospas-Sarsat satellites and are required on board certain vessels." at the end of bullet starting with "An EPIRB transmits …".

Delete all sub-bullets under bullet starting with "An EPIRB transmits …".

Add text "**ELT:**" at the beginning of bullet starting with "Most civil aircraft …".

Replace text of two sub-bullets of bullet starting with "Most civil aircraft …" with the following:

- 406 MHz ELT for use with Cospas-Sarsat satellites, required on aircraft on international flights.

- 121.5 MHz ELT might be allowed/required on domestic flights and is intended to be heard by other aircraft.

Insert new bullet after bullet starting with "Most civil aircraft …" and include the following text:

PLB: The 406MHz PLB is not mandated by any international carriage requirement, but may be carried by a person and has similar characteristics to EPIRBs and ELTs.

Replace text "EPIRBs and ELTs" with "the 406 MHz distress beacons" in bullet starting with "Cospas-Sarsat calculates …".

Add text "fixed" between "all" and "ELTs" in bullet starting with "Most EPIRBS and …".

Delete bullets starting with "Inmarsat-E EPIRBs transmit …", "Position information from…" and "Inmarsat-E EPIRB operates …".

Replace text "EPIRB" with "distress beacon" in bullet starting with "It is recommended …".

Add text "radar" between "The" and "SART" in second sub-bullet of bullet starting with "SOLAS ship requirements …".

Insert sub-bullet and replace two sub-bullets of bullet starting with "SOLAS ship requirements …" with the following text:

□ two-way VHF radio-telephone apparatus and survival craft radar transponders to be placed on each side of the vessel, in a position ready to be taken on board a survival craft, and one of the following:

□ a radar SART, which after being switched on manually, and triggered by radar(s) in its vicinity, automatically sends out a series of pulses which are displayed on a radar screen as a series of elongated pips, similar to a radar responder beacon (racon) pip; or

□ an AIS-Search and Rescue Transmitter (AIS-SART), which after being switched on manually, automatically sends updated position reports using a standard AIS class A/B position report. An AIS-SART has a built in GNSS receiver.

Add text "(total/POB)" at the end of sixth sub-bullet under bullet starting with "Important components of …".

Delete text "(POB)" at the end of seventh sub-bullet under bullet starting with "Important components of …".

- Amend the following text in sub-section **Medical Assistance to Vessel**, sub-segment on ***Satellite Communications***, page 4-8:

  Replace text "two" with "three" in bullet starting with "Inmarsat systems offer …".

  Delete numbering of sub-bullets and add a sub-bullet at the end, under bullet starting with "Inmarsat systems offer …". Add the following text:

  □ SAC 39 Maritime assistance. This code allows the call to be routed to the associated RCC.

- Amend the following text in sub-section **MEDICO**, page 4-8:

  Delete bullet starting with "the messages should …".

  Delete two sub-bullets under bullet starting with "In addition to …".

- Amend the following text in sub-section **Medical Evacuation (MEDEVAC)**, page 4-9:

  Add text "The vessel's master is responsible for the safety of his vessel and personnel and may decide against the evacuation." at the end of bullet starting with "The final decision …".

- Amend the following text in sub-section **Medical Evacuation (MEDEVAC)**, sub-segment on ***Evacuation by Helicopter***, page 4-10:

  Delete text "as close" and "area as the patient's condition permits" and add "if so required" at the end of first item of second bullet under bullet starting with "When arranging for …".

- Amend the following text in sub-section **Medical Evacuation (MEDEVAC)**, sub-segment on ***Vessel Preparation***, page 4-11:

  Insert sub-bullet after sub-bullet starting with "how to identify…" under bullet starting with "The following information …" and add the following text:

  □ Type and any special activity of the ship

- Amend the following text in sub-section **Medical Evacuation (MEDEVAC)**, sub-segment on ***Shipboard Safety Checklist***, page 4-11:

  Delete text "person overboard' in bullet starting with "Is a person …".

Add item "Passenger Vessels: Additional Items" after "Gas Carriers: Additional Items" and include the following bullet:

- Portable radio communication 123,1 MHz /121,5 MHz

- Change title of sub-section "**Person Overboard**" to "**Man Overboard**".

- Amend the following text in sub-section **Person overboard**, sub-segment on ***Initial Action***, page 4-14:

  Insert new first bullet and include the following text:

  - Mark and note position and time from GNSS.

  Replace text "person" with "man" in bullet starting with "Sound three prolonged …".

  Delete text "position" and "time" in bullet starting with "Note position, time …".

- Amend the following text in sub-section **Ship Emergencies at Sea**, page 4-16:

  Add new sub-segment **Collision** and include the following text:

  Collision

  □ Establish communication with the other vessel
  □ Evaluate the situation (including, but not limited to, hull damage, injured persons)
  □ If assistance is required, transmit distress or urgency message
  □ POB control (vessels involved)
  □ Inform RCC
  □ abandon vessel as a last resort

  Replace the sub-bullets of sub-segment "***Abandoning Ship***" with the following text:

  □ abandon ship only as last resort
  □ transmit distress call and message
  □ wear adequate clothing and, if available, immersion suits
  □ wear lifejackets, tightly fastened
  □ take anti-seasickness medication
  □ have crew members stand by lifeboat or liferaft and prepare to launch
  □ make sure sea painter is attached to vessel
  □ take SART, AIS-SART and/or EPIRB with you if possible
  □ load crew and launch
  □ keep lifeboat or liferaft tethered to vessel as long as possible

- Amend the following text in sub-section **Aircraft Emergencies**, sub-segment on ***Vessel-Aircraft Communications***, page 4-21:

  Replace text "the radiotelephone alarm system" with "MF DSC alert" in paragraph starting with "Aircraft may have …" under **2182 kHz**.

Replace text "designated SAR aircraft and most" with "most designated SAR aircraft and some" in item starting with "designated SAR aircraft …" under **3023 and 5680 kHz**.

- Amend the following text in sub-section **Aircraft Emergencies**, page 4-28:

Insert new sub-segment ***121.5 MHz Distress Beacon Alerts*** at the end of sub-section (after "Emergency Equipment" sub-segment) and include the following text:

- ***121.5 MHz Distress Beacon Alerts***

  - 121.5 MHz distress beacons are still in use and send out distress alerts heard on the radio as a WOW WOW sound of two alternating tones.
  - Aircraft in flight are the primary means of detecting these alerts. Pilots-in-command should advise ATS units when this distress alert is heard.
  - When in flight and reporting an alert from a 121.5 MHz distress beacon, the pilot-in-command should expect the ATS unit to request the following information:

    - Your aircraft altitude above sea level, where and when the signal was first heard
    - Your aircraft altitude above sea level, where and when maximum signal was heard
    - Your aircraft altitude above sea level, where and when signal faded or was lost.

8 Appendices

- Insert new appendix F "***Own Emergency***" and appendix G "***Rendering Assistance***" and add the following cards:

IAMSAR Manual, Volume III, appendix F – Examples of Action Cards – Own emergency

Man overboard

MOB – Man overboard

Man overboard (MOB)

Additional info in IAMSAR Vol III, Section 4.

- Light and smoke signal

1. ON BOARD ACTION

- Mark the position (GNSS)
- Drop MOB buoy
- Sound general alarm
- Start Williamson turn (or similar)
- Post lookouts
  - Forward on both sides
  - Bridge wings (with binoculars)
  - If long lasting search, rotate and motivate.

2. ON BOARD PREPARATION

- Lifebuoys, with light and smoke.
- Rescue-boat and equipment for pick up.
- ~~Prepare hospital for receiving injured and or hypothermal persons.~~
- ~~Hospital location and p~~Phone number to be obtained from RCC ~~TMAS~~

3. TRANSMIT DISTRESS, VHF, MF/HF, INMARSAT.

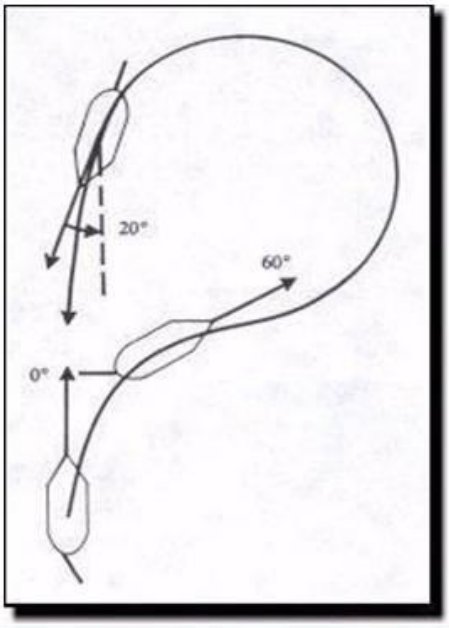
- Switch to voice.
- Transmit distress message
- 3*Mayday, 3* name of ship
- DTG (Date and time group)
- Type of distress, Position
- Assistance required and any additional information

Williamson turn

1 Rudder hard over (in an "immediate action" situation, only to the side of the casualty).

2 After deviation from the original course by 60°, rudder hard over to the opposite side.

3 When heading 20° short of opposite course, rudder to midship position and ship to be turned to opposite course.



IAMSAR **** Edition

IAMSAR Manual, Volume III, appendix F – Example of Action Cards – Own emergency

MEDEVAC by Helicopter

MEDEVAC by Helicopter

MEDEVAC by Helicopter

Additional information in IAMSAR Vol III, section 4-

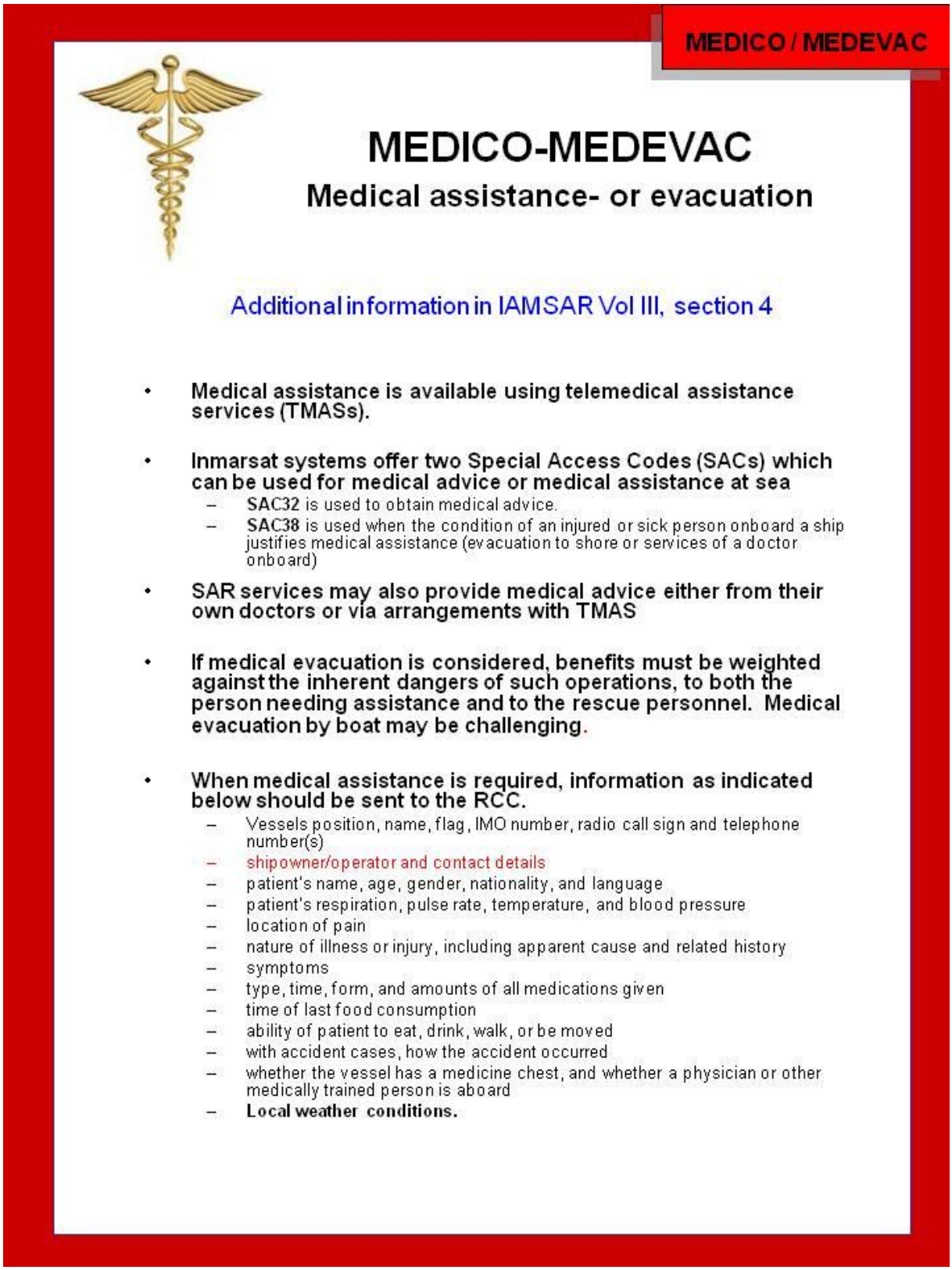
- **REQUESTING HELICOPTER ASSISTANCE**
  - Contact RCC, give vessel details, name, callsign, and contact numbers
  - Vessel position, speed and course.
  - Local weather conditions
  - Give as much medical information as possible, particularly about the patient's mobility.
  - Indicate landing or winching area.

- **PREPARATION OF PATIENT BEFORE THE HELICOPTER ARRIVES**
  - Move the patient, in accordance to medical advice, as close to the helicopter pick-up area as the patient's condition permits.
  - Update the information on medication given
  - Have the patient wear a lifejacket, and attach all medical information and other important records, and passport along with a record of medications that have been administered (No luggage)

- **VESSEL PREPARATION**
  - Update position to RCC and/or helicopter.
  - Course and speed to the rendezvous position.
  - Frequencies for communication with helicopter.
  - Secure or remove all loose objects in pick-up area. If necessary, remove antennas, (whip / wire).
  - Switch radars off during pick up/landing.
  - Take wind 30 deg. on port bow, and keep steering speed, during helicopter operation.
  - Have a portable radio ready for communication from deck to bridge and helicopter.
  - Direct available lighting to illuminate the pick-up area. Do not direct lights towards the helicopter as it will adversely affect the pilot's vision
  - If a helicopter crewman is lowered, follow his instructions.
  - If this is not the case act as follows. If you have to move the rescue device from the pick-up area to load the patient, unhook the cable and trail line from the rescue device and lay the loose hook on the deck so it can be retrieved by the helicopter. *Do not attach the loose hook or the cable trail line to your vessel.*
  - When the patient is securely loaded, signal the helicopter to move into position and lower the hook. After allowing the hook to ground on the vessel, re-attach the hook and the trail line to the rescue device. Signal the winch operator with a "thumbs up" when you are ready for the winching to begin. As the rescue device is being retrieved, tend the trail line to prevent the device from swinging. When you reach the end of the trail line, gently toss it over the side.
  - Prepare for high-line operation

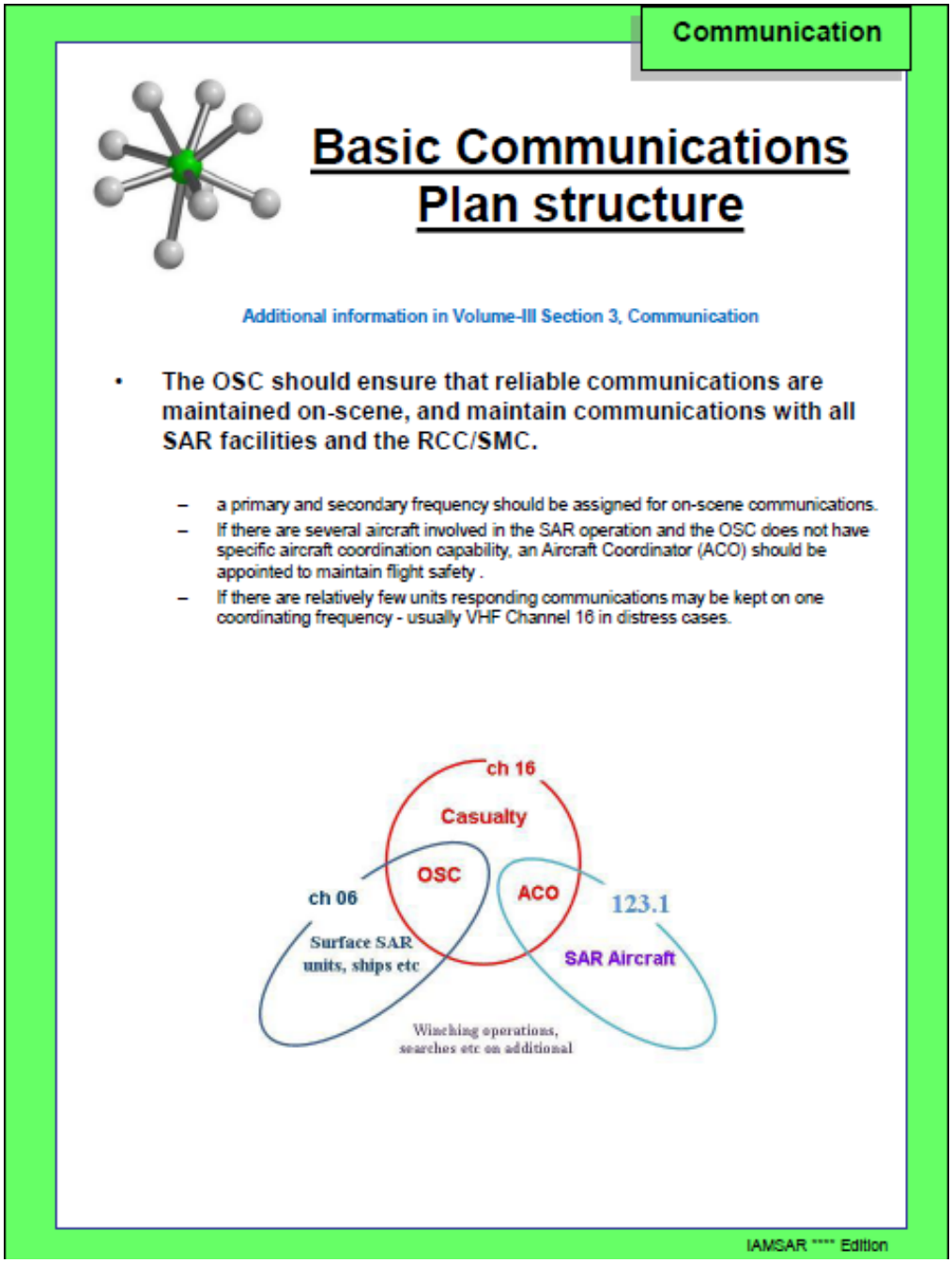
IAMSAR Manual, Volume III, appendix F – Example of Action Cards – Own emergency

MEDICO-MEDEVAC



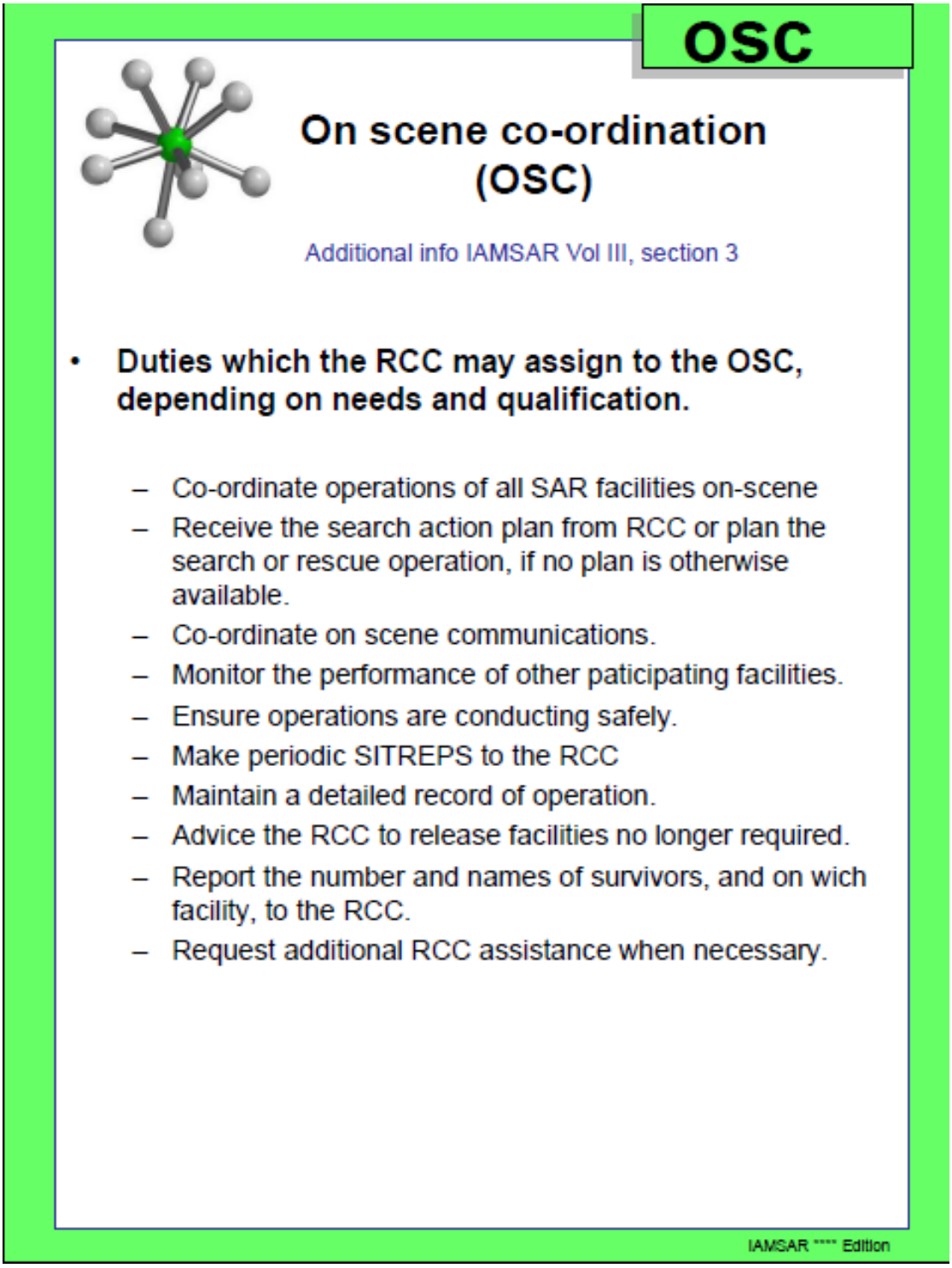
IAMSAR Manual, Volume III, appendix G – Example of Action Cards – Rendering assistance

Basic Communication Plan structure



IAMSAR Manual, Volume III, appendix G – Example of Action Cards – Rendering assistance

On scene coordination (OSC)



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ANNEX 12

DRAFT RESOLUTION MSC.[….(91)]
(adopted on [.. November 2012])

RECOMMENDATION FOR THE PROTECTION OF THE AIS VHF DATA LINK

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.886(21), by which the Assembly resolved that the functions of adopting performance standards and technical specifications for radio and navigational equipment, as well as amendments thereto, shall be performed by the Maritime Safety Committee on behalf of the Organization,

RECALLING FURTHER resolution MSC.74(69), annex 3: Recommendation on Performance Standards for Universal Shipborne Automatic Identification System (AIS),

REALIZING the application of AIS devices to safety of navigation as well as security,

NOTING that the International Telecommunication Union Sector for Radiocommunications (ITU-R) recognizes a Class A category of AIS which meets the requirements of resolution MSC.74(69), as well as a Class B and other categories of AIS which do not meet the requirements of resolution MSC.74(69), annex 3,

NOTING ALSO that Class A devices are intended to meet the requirements for compulsory AIS fitting under 1974 SOLAS Convention, and that Class B devices are intended to meet the needs of vessels which fit AIS on a voluntary basis,

NOTING FURTHER the benefit of Class B and other AIS devices,

RECOGNIZING that the radio channels used by AIS, particularly AIS 1 (161.975 MHz) and AIS 2 (162.025 MHz), are regarded as an AIS network, and that any disruption to those channels by any one AIS device could affect the operation of all AIS devices on that network,

RECOGNIZING FURTHER the compelling need to ensure the integrity of the AIS VHF data link,

RECOMMENDS that:

.1 any device which transmits on the radio channels allocated for AIS, should meet the appropriate requirements of Recommendation ITU-R M.1371;

.2 all such transmitting devices should be approved by the administration;

.3 administrations should take the steps necessary to ensure the integrity of the radio channels used for AIS in their waters; and

REVOKES resolution MSC.140(76).

***

ANNEX 13

STATEMENT BY THE DELEGATION OF VANUATU

"Thank you Mr. Chairman,

We would like first to thank all the submitters under this agenda item. Although this delegation is thankful to IMSO for the work carried out so far in its capacity as the LRIT Coordinator, we have some concerns with the content of its document COMSAR 16/13/3 and we apologize in advance for our lengthy intervention.

In paragraph 3 to 6 of this document, we note with interest that the number of DCs to be audited has gone from 38 in 2010 to 66 in 2012 and yet the audit fee has never stopped increasing – This delegation would have thought that the more we were the less we would pay – we wonder why this is not the case.!! The audit fee for 2012 has increased by 20% again!!!

The fee is so problematic to various Administrations that many of them delay their payments as highlighted in paragraph 14 of this document, causing cash flow problems to IMSO!
Sir, the IMSO LRIT Audit fee represents almost 15% of Vanuatu LRIT cost and for other DCs, this number is certainly much higher!

In paragraph 21 of the same document, we note that the IMSO Advisory Committee has not favored the concept of an extended audit as suggested in paragraph 16.7 and 16.8 of the draft Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres contained in annex 4 of document COMSAR 16/13, but instead agreed that the DC "shall remain liable to complete that audit and pay the relevant fee prevailing at the time the audit should have taken place".

Mr. Chairman, it seems to this delegation that money is the core issue and not the audit! Indeed, under the extended audit concept, a given Administration would be liable to pay for only one extended audit (at least it is our understanding), on the other hand under the IMSO's proposal, this given Administration would have to have its DC audited retroactively as many times as required and pay the relevant fees whatever the reasons why it could not take up the audit within the required 15 months maximum period as clearly stated in paragraph 21 of this document. Therefore, this delegation disapproves the IMSO suggested amendments to paragraphs 16.7 and 8 as contained in paragraph 22 of the IMSO document.

Sir, not only we do not approve such suggested amendments for the reasons mentioned earlier but also because the current suggested IMSO wording goes beyond the mandate of the IMO interfering in the contractual relationship between Member States and IMSO. Besides, the wording used is not appropriate being mandatory by using "Shall" and not recommendatory as it should be for Guidelines.

May we recall that paragraph 9.3.2 of the said draft guidelines states that the auditee will be expected to conclude a contractual agreement with the LRIT Coordinator with respect to the legal, operational and financial commitments of the audit. The IMO is not a party to said contractual agreement and shall therefore not direct any Administration to pay the IMSO audit fee as it is the case in the IMSO suggested wording.

Now, Mr. Chairman, regarding the issue of DCs unwilling to be audited addressed in paragraph 15 to 17 of the IMSO document. IMSO reports that operators of various DCs failed to comply with the audit requirements by not cooperating and making available to IMSO the

information required. I am afraid this delegation must disapprove such assertion since 4 of the 5 DCs listed in paragraph 15 were surely willing to provide the data but unable to pay the fee. The fee is the problem Mr. Chairman!!!!! Not the provision of the data. Sir, as mentioned earlier, the IMSO LRIT Audit fee represents 15% of the Vanuatu LRIT cost which is far too high!!!

Now instead of providing solution to the issue which is the fee and only the fee, IMSO, in paragraph 17, is asking to penalize countries for not paying the audit by recommending that any DC that does not comply fully with the requirements of the Revised performance standards to be temporarily suspended from the production LRIT system until their compliance with such requirements has been satisfactorily audited and (we would add) fully paid!!

Sir, not willing to pay the IMSO Audit fee does mean that a given DC does not comply fully with revised performance standards. With all due respect Mr. Chair, suspending a DC from the LRIT production environment, as suggested by the IMSO, would surely pose greater risks to the international maritime community than maintaining its status in the LRIT production environment with a hypothetical non-compliance with IMO regulations. Isn't the IMSO itself that confirm in paragraph 23.1 that with the exception of 1 NDC, the LRIT Coordinator has not observed during 2011 any serious and systematic deviation from the provisions of the system!!

Mr. Chairman, I am afraid to say that such suspension from the LRIT production environment is not covered within the IMO regulations and there are no references about penalties at all. Besides, SOLAS applies to ships and there is no way to apply any pressure to countries on this aspect.

This delegation therefore wonders what is the legal basis that IMSO is using to support its request to sanction SOLAS State Parties?

Surely Mr. Chair one way to address this audit fee sensitive issue would be to revisit the frequency of the Audit and switch from an annual audit to an audit once every 3 to 5 years for instance.

Mr. Chair, we will provide the Secretariat with our intervention for insertion into the Final report.

Thank you."

***

ANNEX 14

ESTIMATED COST OF THE LRIT AUDIT UNIT FOR 2012 TO 2016 AND SCALE OF CHARGES TO BE LEVIED DURING 2012 BY THE LRIT COORDINATOR (as advised by IMSO)

Estimated cost of the LRIT audit unit for 2012 to 2016 (extracted from document MSC/Ad Hoc LRIT 10/5/1 (IMSO))

"8 IMSO informs the LRIT Ad Hoc Group that:

.1 the illustrative LRIT Budgets for 2012 to 2016 are currently estimated to be between £600,000 to £700,000; and

.2 assuming no changes to the fee setting formula, nor to apportionment, nor to IMSO staff levels, and based on the currently estimated number of LRIT DCs and units (60.5), the LRIT unit fees for audit and review of LRIT DCs in 2012 to 2016 could range between £10,000 and 11,000."

Scale of charges to be levied by the LRIT Coordinator during 2012 (extracted from document COMSAR 16/INF.3 (IMSO)

"**SCALE OF CHARGES**[1] **– 2012**[2]

		Resolution MSC.263(84), paragraph	**Fee**[3] **(GB Pounds) for 2012**	**Remarks**
1	*Evaluation of proposals for the establishment of the International LRIT Data Centre and/or the International LRIT Data Exchange*	14.2.3	10,000	Payable in two tranches: 6,000 on submission of Proposal to IMSO; 4,000 on completion of Report, before submission to IMO.
2	*Participating in the testing and integration of the International LRIT Data Centre and/or the International LRIT Data Exchange into the LRIT system*	14.2.4	-	Fee to be published if IMO decides to establish an International LRIT Data Centre and/or a permanent International LRIT Data Exchange.
3	*Investigation of operational or technical disputes or invoicing difficulties*	14.3.1	2,300 per day	Plus actual expenses.
4	*Participating in the testing and integration of LRIT Data Centre(s) into the LRIT system*	14.3.2	2,300 per day	Plus actual expenses. For any work *in addition* to that included in item 9 below.

1 Refers to the report of the thirtieth session of the IMSO Advisory Committee (Tangier, Morocco, 9-11 November 2011).

2 Charges valid from 1 January 2012 to 31 December 2012.

3 Fees net of exchange and other bank charges.

		Resolution MSC.263(84), paragraph	Fee[3] (GB Pounds) for 2012	Remarks
5	*Participating in the testing of new or modified procedures or arrangements for communications between the International LRIT Data Exchange, the LRIT Data Centres and the LRIT Data Distribution Plan server*	14.3.3	2,300 per day	Plus actual expenses.
6	*Reviewing the performance of ASPs (or CSPs when they act as ASPs) providing services to the International LRIT Data Centre*	14.4.1	-	Fee to be published if IMO decides to establish an International LRIT Data Centre.
7	*Auditing the performance of LRIT Data Centres*	14.4.2	9,500 per unit	Total fee payable is calculated in accordance with the formula agreed by IMSO Assembly.
8	*Auditing the performance of the International LRIT Data Exchange*	14.4.3	9,500 per unit	
9	*Other specific LRIT-related services not covered by the above*	14.7.4	2,300 per day	Plus actual expenses.
10	*Interim authorization of LRIT Data Centres*	MSC.1/Circ. 1294, annex 1, section 3.3.3	8,500	

"

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ANNEX 15

DRAFT RESOLUTION MSC.[...(90)]
(adopted on [...])

AMENDMENTS TO THE REVISED PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS FOR THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS (RESOLUTION MSC.263(84))

THE MARITIME SAFETY COMMITTEE,

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

RECALLING ALSO resolution A.886(21) on Procedure for the adoption of, and amendments to, performance standards and technical specifications, by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto shall be performed by the Maritime Safety Committee,

BEARING IN MIND the provisions of the regulation V/19-1 of the International Convention for the Safety of Life at Sea, 1974 (the Convention), relating to the long-range identification and tracking of ships, and the Revised performance standards and functional requirements for the long-range identification and tracking of ships (Revised performance standards) adopted by resolution MSC.263(84),

NOTING that, at its eighty-eighth session, it had concurred with the establishment of a cost model for the provision of LRIT information, as from 3 December 2010 (the "US$0.25 1:2:6" cost model - i.e. single LRIT position report: US$0.25, polled LRIT position report: US$0.50, and changes of the rate of transmission: US$3.00 (US$1.50 x 2)),

NOTING ALSO that, at its eighty-ninth session, it had agreed that, due to the establishment of the above-mentioned cost model, the master list maintained by the International LRIT Data Exchange related to charges levied by LRIT Data Centres when providing LRIT information was no longer necessary,

HAVING CONSIDERED, at its [ninetieth session], the need to adopt certain amendments to the Revised performance standards,

1. ADOPTS amendments to the Revised performance standards and functional requirements for the long-range identification and tracking of ships (resolution MSC.263(84)), the text of which is set out in the annex to the present resolution;

2. INVITES Contracting Governments to the Convention to bring the above amendments to the attention of all parties concerned.

ANNEX

AMENDMENTS TO THE REVISED PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS FOR THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS (RESOLUTION MSC.263(84))

1 The existing subparagraph 7.4.3 is deleted.

2 The existing text of subparagraph 10.3.15 is deleted and replaced by the following text:

"10.3.15 receive pricing information from LRIT Data Centres."

***

ANNEX 16

(English only)

Section 1

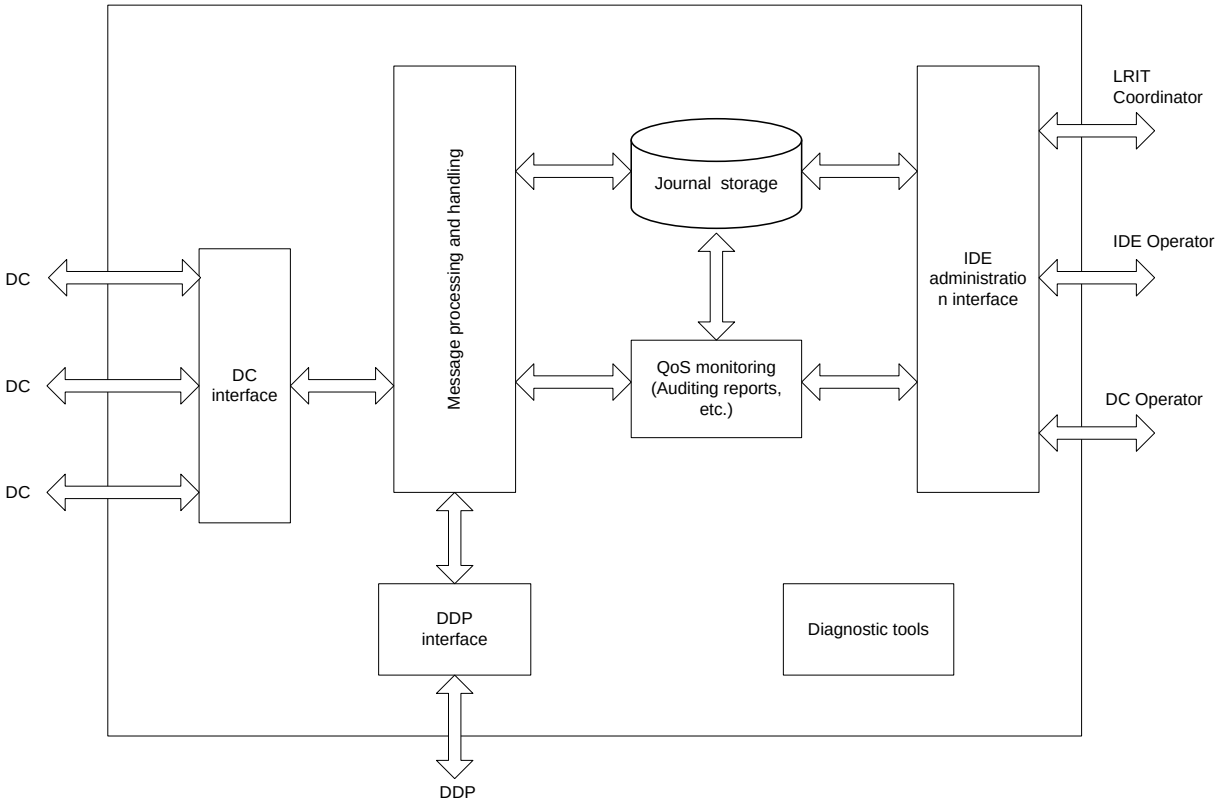
DRAFT AMENDMENTS TO MSC.1/CIRC.1259/REV.4 AND MSC.1/CIRC.1294/REV.2

Technical specifications for the International LRIT Data Exchange (MSC.1/Circ.1259/Rev.4, annex, annex 1)

1 Figure 1 is amended as follows:

Figure 1

Top level block diagram of IDE data flow



2 In Table 1 (Summary of LRIT messages), the last three rows are amended as follows:

13	Pricing notification	Notification that a new pricing list for inter-DC charges is in place	Not used	Not used	No
14	Pricing request	Request for updated pricing list	Not used	Not used	No
15	Pricing update	Updated pricing list file	Not used	Not used	No

3 Paragraph 3.3.3.2.4 is amended as follows:

".4 when connectivity issues occur, attempt redelivery of a message 3 times in 12 min to a DC."

4 In the table following paragraph 3.3.3.3 (table without title), the last three rows are amended as follows:

Message Type 13 – Pricing Notification	Sent	The recipient component should not process or take any action in response to the message. Pricing Notification messages will remain in the XML schema for backward compatibility. However, messages of this type have been deprecated.
Message Type 14 – Pricing Request	Received	The IDE should not process the message, but should journal it. No Pricing Update will be sent to the originating Data Centre as a result. Pricing Request messages will remain in the XML schema for backward compatibility. However, messages of this type have been deprecated.
Message Type 15 – Pricing Update	Received	The IDE should journal the pricing update messages, however an update notification should not be broadcast. Pricing Update messages will remain in the XML schema for backward compatibility. However, messages of this type have been deprecated.
	Sent	The recipient component should not process or take any action in response to the message. Pricing Update messages will remain in the XML schema for backward compatibility. However, messages of this type have been deprecated.

5 Paragraphs 3.3.8.1 to 3.3.8.5 are deleted and the following new paragraph is added:

"3.3.8.1 The IDE should journal pricing messages; however the IDE should not take any action on pricing messages."

6 The existing subparagraph 1 listed under paragraph 3.6.1.4 is amended as follows:

".1 the DDP operator should have limited access so as to be able to query its share of the Journal for troubleshooting or system management functions. DCs points of contact defined in the DDP may create sub-accounts with the same level of front end access. For this the DDP operator should use a web interface;"

7 *The following new subparagraph is added under paragraph 3.6.1.4 after subparagraph .1:*

".2 the DDP operator should have limited access so as to be able to perform any necessary queries for troubleshooting or system management functions. For this the DDP operator should use a web interface;"

8 *Under paragraph 3.6.1.4, the existing subparagraphs .2 and .3 are renumbered as subparagraph .3 and .4, respectively.*

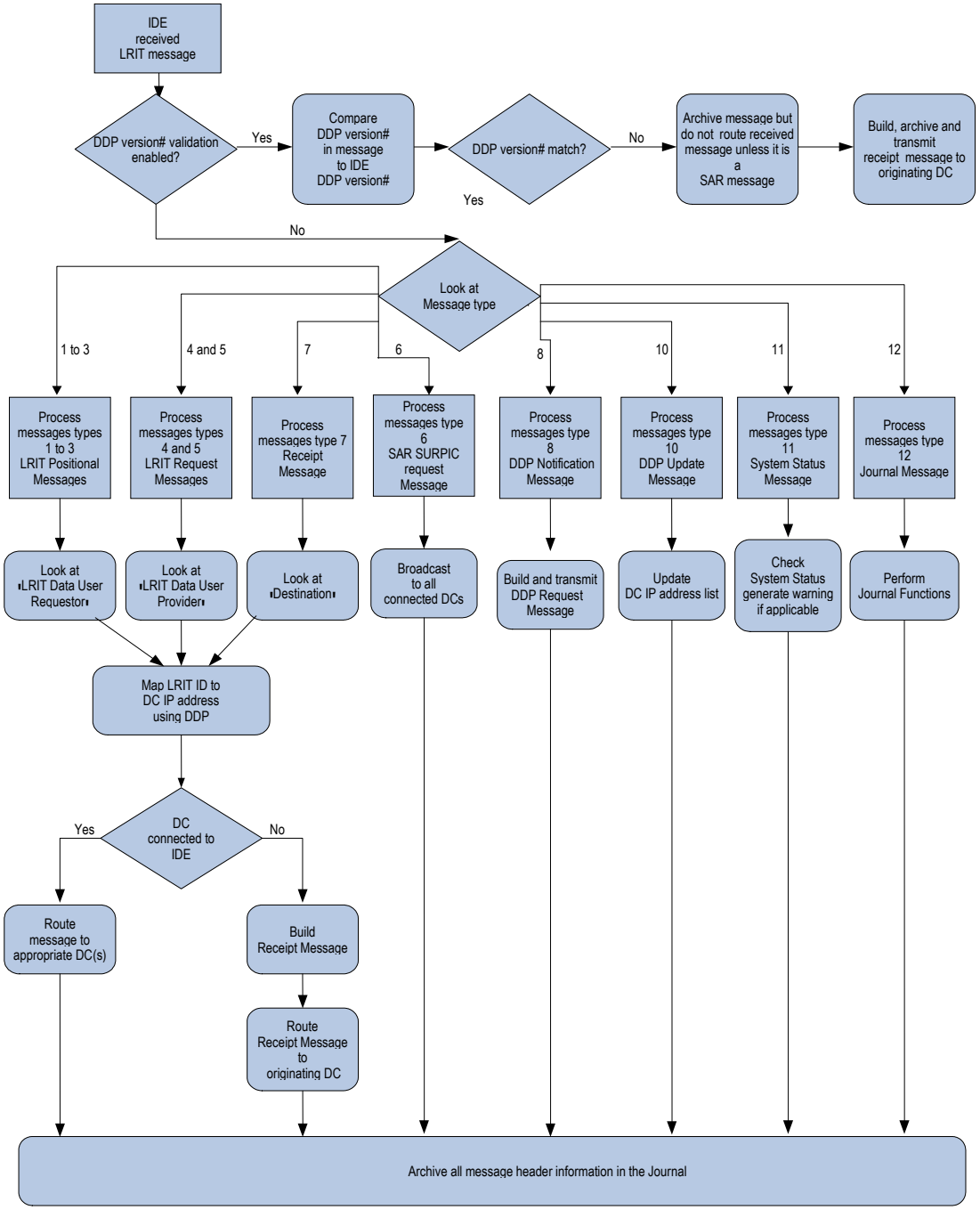
9 *Paragraph 3.6.2.1.12, including subparagraphs .1 and .2, is deleted.*

10 *Paragraphs 3.6.2.1.13 to 3.6.2.1.16 are renumbered as paragraphs 3.6.2.1.12 to 3.6.2.1.15, respectively*.

11 *Section 3.9 is deleted.*

12 Figure 2 is amended as follows:

IDE message handling and processing for received LRIT messages



13 Section 8 is deleted.

Technical specifications for communications within the LRIT system (MSC.1/Circ.1259/Rev.4, annex, annex 3)

14 In Table 1 (Summary of LRIT messages), the last three rows are amended as follows:

13	Pricing notification	Not used
14	Pricing request	Not used
15	Update pricing file	Not used

15 Paragraph 2.2.1.6 is amended as follows:

"2.2.1.6 XML data formats will use UTF-8 to encode Unicode characters in the English language. Acceptable characters for use in LRIT messages are listed in Table 15."

16 Paragraph 2.2.2.19 is amended as follows:

"2.2.2.19 The ShipName parameter is the name of the ship in the English language using UTF-8 encoding. Acceptable characters for inclusion in ship names are listed in Table 16. A DC may reject a message containing any other character with a SOAP Fault or with a Receipt containing ReceiptCode 7 (System fault)."

17 In the table following paragraph 2.2.5.7 (table without title), the last three rows are amended as follows:

13	Pricing Notification	Not used
14	Pricing Request	Not used
15	Pricing Update	Not used

18 Paragraph 2.2.11.1 is amended as follows:

"2.2.11.1 Pricing notification messages (Message 13) will remain in the XML schema for backward compatibility; however, messages of this type have been deprecated."

19 Paragraphs 2.2.11.2 to 2.2.11.9 and Table 11 are deleted.

20 Paragraph 2.2.12.1 is amended as follows:

"2.2.12.1 Pricing request messages (Message 14) will remain in the XML schema for backward compatibility. However, messages of this type have been deprecated."

21 Paragraphs 2.2.12.2 to 2.2.12.10 and Table 12 are deleted.

22 Paragraph 2.2.13.1 is amended as follows:

"2.2.13.1 Update pricing file messages (Message 15) will remain in the XML schema for backward compatibility. However, messages of this type have been deprecated."

23 Paragraphs 2.2.13.2 to 2.2.13.11 and Table 13 are deleted.

24 In Table 15 (Operational scenarios that terminate, suspend or modify a request message) the fifth event listed under the Existing request message for "coastal State request with periodic reporting" is amended as follows:

Event	Action by processing DC	Receipt message	Receitp code
Requesting Contracting Government sends a new request message (Message Type 4, Access Type 1, Request Type 2, 3, 4, 5, 6, 10, or 11) for the same ship associated with the existing request message	• Existing request message terminates immediately upon receipt of the new request message. • Return to coastal state standing order reports until start time associated with new request message becomes current time. • New request message starts with desired reporting rate (A single Contracting Government can only have one active coastal State request on each ship at a time)	No	N/A

25 In Table 15 (Operational scenarios that terminate, suspend or modify a request message) the third event listed under the Existing request message for "port State request with distance trigger with periodic reporting" is amended as follows:

Event	Action by processing DC	Receipt message	Receitp code
Requesting Contracting Government sends a new request message (Message Type 4, Access Type 3 or 5, the same port, port facility, or place and Request Type 2, 3, 4, 5, 6, 10 or 11) for the same ship associated with the existing request message	• Existing request message terminates immediately upon receipt of new request message. • New request message starts with desired reporting rate (A single Contracting Government can only have one active port State request per port, port facility or place on each ship at a time)	No	N/A

26 In Table 15 (Operational scenarios that terminate, suspend or modify a request message) the third event listed under the Existing request message for "port State request with time trigger with periodic reporting" is amended as follows:

Event	Action by processing DC	Receipt message	Receitp code
Requesting Contracting Government sends a new request message (Message Type 4, Access Type 3 or 5, the same port, port facility, or place and Request Type 2, 3, 4, 5, 6, 10 or 11) for the same ship associated with the existing request message	• Existing request message terminates immediately upon receipt of new request message. • New request message starts with desired reporting rate (A single Contracting Government can only have one active port State request per port, port facility or place on each ship at a time)	No	N/A

27 Tables 14 to 17 are renumbered as Tables 11 to 14, respectively.

28 Section 2.3.11 is deleted.

29 The following table is added to Figure 8:

Table 18

Characters acceptable for inclusion in LRIT messages

Unicode code point	Character	UTF-8 (hex.)	Name
U+0020		20	SPACE
U+0021	!	21	EXCLAMATION MARK
U+0022	"	22	QUOTATION MARK
U+0023	#	23	NUMBER SIGN
U+0024	$	24	DOLLAR SIGN
U+0025	%	25	PERCENT SIGN
U+0026	&	26	AMPERSAND
U+0027	'	27	APOSTROPHE
U+0028	(	28	LEFT PARENTHESIS
U+0029	)	29	RIGHT PARENTHESIS
U+002A	*	2a	ASTERISK
U+002B	+	2b	PLUS SIGN
U+002C	,	2c	COMMA
U+002D	-	2d	HYPHEN-MINUS
U+002E	.	2e	FULL STOP
U+002F	/	2f	SOLIDUS
U+0030	0	30	DIGIT ZERO
U+0031	1	31	DIGIT ONE
U+0032	2	32	DIGIT TWO
U+0033	3	33	DIGIT THREE
U+0034	4	34	DIGIT FOUR

Unicode code point	Character	UTF-8 (hex.)	Name
U+0035	5	35	DIGIT FIVE
U+0036	6	36	DIGIT SIX
U+0037	7	37	DIGIT SEVEN
U+0038	8	38	DIGIT EIGHT
U+0039	9	39	DIGIT NINE
U+003A	:	3a	COLON
U+003B	;	3b	SEMICOLON
U+003C	<	3c	LESS-THAN SIGN
U+003D	=	3d	EQUALS SIGN
U+003E	>	3e	GREATER-THAN SIGN
U+003F	?	3f	QUESTION MARK
U+0040	@	40	COMMERCIAL AT
U+0041	A	41	LATIN CAPITAL LETTER A
U+0042	B	42	LATIN CAPITAL LETTER B
U+0043	C	43	LATIN CAPITAL LETTER C
U+0044	D	44	LATIN CAPITAL LETTER D
U+0045	E	45	LATIN CAPITAL LETTER E
U+0046	F	46	LATIN CAPITAL LETTER F
U+0047	G	47	LATIN CAPITAL LETTER G
U+0048	H	48	LATIN CAPITAL LETTER H
U+0049	I	49	LATIN CAPITAL LETTER I
U+004A	J	4a	LATIN CAPITAL LETTER J
U+004B	K	4b	LATIN CAPITAL LETTER K
U+004C	L	4c	LATIN CAPITAL LETTER L
U+004D	M	4d	LATIN CAPITAL LETTER M
U+004E	N	4e	LATIN CAPITAL LETTER N
U+004F	O	4f	LATIN CAPITAL LETTER O
U+0050	P	50	LATIN CAPITAL LETTER P
U+0051	Q	51	LATIN CAPITAL LETTER Q
U+0052	R	52	LATIN CAPITAL LETTER R
U+0053	S	53	LATIN CAPITAL LETTER S
U+0054	T	54	LATIN CAPITAL LETTER T
U+0055	U	55	LATIN CAPITAL LETTER U
U+0056	V	56	LATIN CAPITAL LETTER V
U+0057	W	57	LATIN CAPITAL LETTER W
U+0058	X	58	LATIN CAPITAL LETTER X
U+0059	Y	59	LATIN CAPITAL LETTER Y
U+005A	Z	5a	LATIN CAPITAL LETTER Z
U+005B	[	5b	LEFT SQUARE BRACKET
U+005C	\	5c	REVERSE SOLIDUS
U+005D	]	5d	RIGHT SQUARE BRACKET
U+005E	^	5e	CIRCUMFLEX ACCENT
U+005F	_	5f	LOW LINE
U+0060	`	60	GRAVE ACCENT
U+0061	a	61	LATIN SMALL LETTER A
U+0062	b	62	LATIN SMALL LETTER B
U+0063	c	63	LATIN SMALL LETTER C
U+0064	d	64	LATIN SMALL LETTER D
U+0065	e	65	LATIN SMALL LETTER E
U+0066	f	66	LATIN SMALL LETTER F
U+0067	g	67	LATIN SMALL LETTER G
U+0068	h	68	LATIN SMALL LETTER H

Unicode code point	Character	UTF-8 (hex.)	Name
U+0069	i	69	LATIN SMALL LETTER I
U+006A	j	6a	LATIN SMALL LETTER J
U+006B	k	6b	LATIN SMALL LETTER K
U+006C	l	6c	LATIN SMALL LETTER L
U+006D	m	6d	LATIN SMALL LETTER M
U+006E	n	6e	LATIN SMALL LETTER N
U+006F	o	6f	LATIN SMALL LETTER O
U+0070	p	70	LATIN SMALL LETTER P
U+0071	q	71	LATIN SMALL LETTER Q
U+0072	r	72	LATIN SMALL LETTER R
U+0073	s	73	LATIN SMALL LETTER S
U+0074	t	74	LATIN SMALL LETTER T
U+0075	u	75	LATIN SMALL LETTER U
U+0076	v	76	LATIN SMALL LETTER V
U+0077	w	77	LATIN SMALL LETTER W
U+0078	x	78	LATIN SMALL LETTER X
U+0079	y	79	LATIN SMALL LETTER Y
U+007A	z	7a	LATIN SMALL LETTER Z
U+007B	{	7b	LEFT CURLY BRACKET
U+007C	|	7c	VERTICAL LINE
U+007D	}	7d	RIGHT CURLY BRACKET
U+007E	~	7e	TILDE
U+00A0		c2 a0	NO-BREAK SPACE
U+00A1	¡	c2 a1	INVERTED EXCLAMATION MARK
U+00A2	¢	c2 a2	CENT SIGN
U+00A3	£	c2 a3	POUND SIGN
U+00A4	¤	c2 a4	CURRENCY SIGN
U+00A5	¥	c2 a5	YEN SIGN
U+00A6	¦	c2 a6	BROKEN BAR
U+00A7	§	c2 a7	SECTION SIGN
U+00A8	¨	c2 a8	DIAERESIS
U+00A9	©	c2 a9	COPYRIGHT SIGN
U+00AA	ª	c2 aa	FEMININE ORDINAL INDICATOR
U+00AB	«	c2 ab	LEFT-POINTING DOUBLE ANGLE QUOTATION MARK
U+00AC	¬	c2 ac	NOT SIGN
U+00AD		c2 ad	SOFT HYPHEN
U+00AE	®	c2 ae	REGISTERED SIGN
U+00AF	¯	c2 af	MACRON
U+00B0	°	c2 b0	DEGREE SIGN
U+00B1	±	c2 b1	PLUS-MINUS SIGN
U+00B2	²	c2 b2	SUPERSCRIPT TWO
U+00B3	³	c2 b3	SUPERSCRIPT THREE
U+00B4	´	c2 b4	ACUTE ACCENT
U+00B5	µ	c2 b5	MICRO SIGN
U+00B6	¶	c2 b6	PILCROW SIGN
U+00B7	·	c2 b7	MIDDLE DOT
U+00B8	¸	c2 b8	CEDILLA
U+00B9	¹	c2 b9	SUPERSCRIPT ONE
U+00BA	º	c2 ba	MASCULINE ORDINAL INDICATOR
U+00BB	»	c2 bb	RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK

Unicode code point	Character	UTF-8 (hex.)	Name
U+00BC	¼	c2 bc	VULGAR FRACTION ONE QUARTER
U+00BD	½	c2 bd	VULGAR FRACTION ONE HALF
U+00BE	¾	c2 be	VULGAR FRACTION THREE QUARTERS
U+00BF	¿	c2 bf	INVERTED QUESTION MARK
U+00C0	À	c3 80	LATIN CAPITAL LETTER A WITH GRAVE
U+00C1	Á	c3 81	LATIN CAPITAL LETTER A WITH ACUTE
U+00C2	Â	c3 82	LATIN CAPITAL LETTER A WITH CIRCUMFLEX
U+00C3	Ã	c3 83	LATIN CAPITAL LETTER A WITH TILDE
U+00C4	Ä	c3 84	LATIN CAPITAL LETTER A WITH DIAERESIS
U+00C5	Å	c3 85	LATIN CAPITAL LETTER A WITH RING ABOVE
U+00C6	Æ	c3 86	LATIN CAPITAL LETTER AE
U+00C7	Ç	c3 87	LATIN CAPITAL LETTER C WITH CEDILLA
U+00C8	È	c3 88	LATIN CAPITAL LETTER E WITH GRAVE
U+00C9	É	c3 89	LATIN CAPITAL LETTER E WITH ACUTE
U+00CA	Ê	c3 8a	LATIN CAPITAL LETTER E WITH CIRCUMFLEX
U+00CB	Ë	c3 8b	LATIN CAPITAL LETTER E WITH DIAERESIS
U+00CC	Ì	c3 8c	LATIN CAPITAL LETTER I WITH GRAVE
U+00CD	Í	c3 8d	LATIN CAPITAL LETTER I WITH ACUTE
U+00CE	Î	c3 8e	LATIN CAPITAL LETTER I WITH CIRCUMFLEX
U+00CF	Ï	c3 8f	LATIN CAPITAL LETTER I WITH DIAERESIS
U+00D0	Ð	c3 90	LATIN CAPITAL LETTER ETH
U+00D1	Ñ	c3 91	LATIN CAPITAL LETTER N WITH TILDE
U+00D2	Ò	c3 92	LATIN CAPITAL LETTER O WITH GRAVE
U+00D3	Ó	c3 93	LATIN CAPITAL LETTER O WITH ACUTE
U+00D4	Ô	c3 94	LATIN CAPITAL LETTER O WITH CIRCUMFLEX
U+00D5	Õ	c3 95	LATIN CAPITAL LETTER O WITH TILDE
U+00D6	Ö	c3 96	LATIN CAPITAL LETTER O WITH DIAERESIS
U+00D7	×	c3 97	MULTIPLICATION SIGN
U+00D8	Ø	c3 98	LATIN CAPITAL LETTER O WITH STROKE
U+00D9	Ù	c3 99	LATIN CAPITAL LETTER U WITH GRAVE
U+00DA	Ú	c3 9a	LATIN CAPITAL LETTER U WITH ACUTE
U+00DB	Û	c3 9b	LATIN CAPITAL LETTER U WITH CIRCUMFLEX
U+00DC	Ü	c3 9c	LATIN CAPITAL LETTER U WITH DIAERESIS
U+00DD	Ý	c3 9d	LATIN CAPITAL LETTER Y WITH ACUTE
U+00DE	Þ	c3 9e	LATIN CAPITAL LETTER THORN
U+00DF	ß	c3 9f	LATIN SMALL LETTER SHARP S
U+00E0	à	c3 a0	LATIN SMALL LETTER A WITH GRAVE
U+00E1	á	c3 a1	LATIN SMALL LETTER A WITH ACUTE
U+00E2	â	c3 a2	LATIN SMALL LETTER A WITH CIRCUMFLEX
U+00E3	ã	c3 a3	LATIN SMALL LETTER A WITH TILDE
U+00E4	ä	c3 a4	LATIN SMALL LETTER A WITH DIAERESIS
U+00E5	å	c3 a5	LATIN SMALL LETTER A WITH RING ABOVE
U+00E6	æ	c3 a6	LATIN SMALL LETTER AE
U+00E7	ç	c3 a7	LATIN SMALL LETTER C WITH CEDILLA
U+00E8	è	c3 a8	LATIN SMALL LETTER E WITH GRAVE
U+00E9	é	c3 a9	LATIN SMALL LETTER E WITH ACUTE
U+00EA	ê	c3 aa	LATIN SMALL LETTER E WITH CIRCUMFLEX
U+00EB	ë	c3 ab	LATIN SMALL LETTER E WITH DIAERESIS
U+00EC	ì	c3 ac	LATIN SMALL LETTER I WITH GRAVE
U+00ED	í	c3 ad	LATIN SMALL LETTER I WITH ACUTE
U+00EE	î	c3 ae	LATIN SMALL LETTER I WITH CIRCUMFLEX
U+00EF	ï	c3 af	LATIN SMALL LETTER I WITH DIAERESIS

Unicode code point	Character	UTF-8 (hex.)	Name
U+00F0	ð	c3 b0	LATIN SMALL LETTER ETH
U+00F1	ñ	c3 b1	LATIN SMALL LETTER N WITH TILDE
U+00F2	ò	c3 b2	LATIN SMALL LETTER O WITH GRAVE
U+00F3	ó	c3 b3	LATIN SMALL LETTER O WITH ACUTE
U+00F4	ô	c3 b4	LATIN SMALL LETTER O WITH CIRCUMFLEX
U+00F5	õ	c3 b5	LATIN SMALL LETTER O WITH TILDE
U+00F6	ö	c3 b6	LATIN SMALL LETTER O WITH DIAERESIS
U+00F7	÷	c3 b7	DIVISION SIGN
U+00F8	ø	c3 b8	LATIN SMALL LETTER O WITH STROKE
U+00F9	ù	c3 b9	LATIN SMALL LETTER U WITH GRAVE
U+00FA	ú	c3 ba	LATIN SMALL LETTER U WITH ACUTE
U+00FB	û	c3 bb	LATIN SMALL LETTER U WITH CIRCUMFLEX
U+00FC	ü	c3 bc	LATIN SMALL LETTER U WITH DIAERESIS
U+00FD	ý	c3 bd	LATIN SMALL LETTER Y WITH ACUTE
U+00FE	þ	c3 be	LATIN SMALL LETTER THORN
U+00FF	ÿ	c3 bf	LATIN SMALL LETTER Y WITH DIAERESIS

Technical specifications for the LRIT Data Distribution Plan (MSC.1/Circ.1259/Rev.4, annex, annex 4)

30 In part I, the following new text is added before paragraph 3.5.6:

"3.5.5 Datatypes relating to Exclusions specified by Contracting Governments:

.1 An <Exclusion> specified by Contracting Government within <Exclusions> applies to the Contracting Government specified by <ExcludedContractingGovernmentID>. This exclusion is in effect for the same duration as the DDP version containing it is implemented, unless modified by the optional <From> and <Until> elements.

.1 If a <From> element is specified within the <Exclusion>, the Exclusion should be considered to be in effect from the time stated in the <From> element which should not be earlier than the time of implementation of the first version of the DDP that contains it; otherwise the Exclusion should be considered to be in effect from the time of implementation of the first version of the DDP that contains it.

.2 If an <Until> element is specified within the <Exclusion>, the Exclusion should be considered to be in effect until the time stated in the <Until> element; otherwise it should be considered to be in effect until the time of implementation of the first version of the DDP that does not contain it.

.3 Text within the optional <Reason> element is for information only and requires no processing."

Criteria for the location of the International LRIT Data Centre and the International LRIT Data Exchange (MSC.1/Circ.1259/Rev.4, annex, annex 5)

31 The following text is added after paragraph 19:

"Availability should be measured by using the information of LRIT System status messages contained in the IDE Journal."

Protocols and arrangements for the prototype, developmental and integration, and modification testing phases of the LRIT system (Version 3) (MSC.1/Circ.1294/Rev.2, annex, annex 1)

32 The following new paragraph is added after paragraph 1.1.1.2:

"1.1.1.3 This document does not intend to establish procedures in order to verify the communication path between ASP/DC, or the ASP compliance with paragraph 5.3 or 5.4 of the Revised performance standards. The responsibility for this verification relies on the administrations and must be performed before communicating to the Organization the recognition of the ASP. However, DCs wishing to change the ASP or add a new ASP recognized by SOLAS Contracting Governments are required to conduct and internally certify a Test case in the testing environment (DC-2.1 (Access Type = 1 and Request Type = 1)) in order to verify that the DC in question can transmit an LRIT position report message containing the identification number assigned to the new recognized ASP, as updated in the DDP."

33 After paragraph 2 of the annex to the protocols (LRIT system tests), the last three rows of Table "Summary of LRIT messages" are amended as follows:

13	Pricing notification	Notification that a new pricing list for inter-DC charges is in place	Not used	Not used	Not applicable
14	Pricing request	Request for updated pricing list	Not used	Not used	Not applicable
15	Updated pricing file	Updated pricing list file	Not used	Not used	Not applicable

34 In appendix 2 to the annex of the Protocols, the following tables are deleted: Tables 2.7 (including Test procedure DC-7.0 and Test case DC-7.1), 2.8 (including Test procedure DC-8.0 and Test case DC-8.1), 2.9 (including Test procedure DC-9.0 and Test cases DC-9.1 and DC-9.2) and 2.10 (including Test procedure DC-10.0 and Test case DC-10.1).

35 The existing Tables 2.11 to 2.16 are renumbered as Tables 2.7 to 2.12, respectively.

36 In appendix 2-A to the annex of the Protocols, the following table is deleted: Table 2-A.2 (including Test procedure DC-8.0 and Test case DC-8.1).

37 In appendix 3 to the annex of the Protocols, the following tables are deleted: Tables 3.9 (including Test procedure IDE-9.0 and Test cases IDE-9.1 to IDE-9.7) and 3.10 (including Test procedure IDE-10.0 and Test cases IDE 10.1 to IDE-10.11).

38 In appendix 3-A to the annex of the Protocols, the following table is deleted: Table 3-A.2 (including Test procedure IDE12.0 and Test case IDE 12.1).

39 In appendix 5 to the annex of the Protocols, Part IV, Test cases DC-7.1, DC-8.1, DC-9.1 and DC 10.1 are removed.

40 In appendix 6 to the annex of the Protocols, Table "Explanatory notes and guidance", Test cases DC 7.1, DC-8.1, DC-9.1, DC-9.2 and DC-10.1 are removed and Test case DC-10.1 is also removed from the Testing Plan.

Procedures for the notification, reporting and recording of temporary suspensions of operations or reduction of the service provided (MSC.1/Circ.1294/Rev.2, annex, annex 2)

41 Paragraph 4.1 is amended as follows:

"4.1 The DC concerned, the IDE and the DDP server, as the case may be, should prepare, no later than 30 days after the end of the scheduled or planned activity or of an unforeseen event which affected its operation for a period of time greater than 15 min, the report set out in appendix 1."

Procedures for the consideration of proposals for the amendment of the technical specifications for the LRIT system, the XML schemas and the test procedures and cases (MSC.1/Circ.1294/Rev.2, annex, annex 3)

42 The title of the annex is changed as follows:

"**Forms to be used for the submission of proposals for the amendment of the technical specifications for the LRIT system, the XML schemas and the test procedures and test cases**"

43 The content of the annex, excepting the 3 appendices, is replaced by the following text:

"1 Submission of proposals to IMO bodies for the amendment of the technical specifications for the LRIT system, the XML schemas and the test procedures and test cases Proposals for the consideration and adoption of amendments should be accompanied by appendix 1, 2 or 3, as the case maybe.

2 Copies of appendices 1 to 3, Technical specifications for the LRIT system, including the XML schemas and test procedures and test cases from the Protocols and arrangements for the prototype, development, integration and modification testing phases of the LRIT system may be obtained from the Secretariat in word format upon request."

Section 2

DRAFT AMENDMENTS TO MSC.1/CIRC.1259/REV.4 AND MSC.1/CIRC.1294/REV.2
(amendments to be implemented during a future modification testing phase of the LRIT system)

Technical specifications for communications within the LRIT system (MSC.1/Circ.1259/Rev.4, annex, annex 3)

44 The following text is added at the end of paragraph 2.2.3.13:

"If the stop time is not specified (stop time is infinity), then the providing DC should terminate the stop request message after the providing DC receives the first position report message that is not within the coastal State standing order polygon(s) associated with the requestor. If the ship associated with the stop request message has not reported within 6 months, the providing DC should terminate the stop request message. Furthermore, if a request duration parameter is specified then the stop request (with associated request duration) should be applied irrespective of the ship's location."

45 In Table 15 (Operational scenarios that terminate, suspend or modify a request message), the following new row is added at the end of the Existing request message "coastal State request for "stop/don't start sending positions"":

Event	Action by processing DC	Receipt message	Receitp code
DC processing a "stop request message" with an infinite time duration receives a position report not contained within the requestor's coastal standing order polygon.	• The Existing "Stop Request" message terminates	No	

Protocols and arrangements for the prototype, developmental, integration and modification testing phases of the LRIT system (MSC.1/Circ.1294/Rev.2, annex, annex 1)

46 The following new appendix is added after appendix 2-A:

Appendix 2-B

LRIT DATA CENTRE TEST PROCEDURES AND CASES

Test Procedures for Modification testing

Table 2-B.1

Table 2.15

Test procedure DC-15.0

Test	REF	Test procedure	Pass/Fail
DC-15.0	PS: 7.1.7 TS3:2.2.2 TS3:2.3.4	DC1 sends a ship Position Report (Message Type 1) to DC2 through the IDE in response to standing orders from a Contracting Government associated with DC2. All parameters associated with each message should be valid unless specified otherwise in a given test case.	

Test cases DC-15.4

Test	REF	Case	Expect results	Test type	Environment	Required before entering	Required during	Certification	Pass/Fail
DC-15.2	PS: 7.1.7 TS3:2.2.2 TS3:2.3.4	DC1 receives a position report from their ASP with all valid parameters that is within the coastal State standing order and, at the same time witihin the internal waters of the requesting Contracting Government associated with DC2. The ship position is neither within the internal waters of another Contracting Government nor the territorial sea of the Contracting Government whose flag the ship is flying.	DC1 does send a position report to DC2.	F	Prototype Test Production	No Yes N/A	Yes Yes No	External External N/A	

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ANNEX 17

(English only)

DRAFT AMENDMENTS TO THE CONTINUITY OF SERVICE PLAN FOR THE LRIT SYSTEM (MSC.1/CIRC.1376)

1 Paragraph 4.1.4.1 is amended as follows:

"4.1.4.1 Full operational functionality, except for partial access to the IDE Journal during the DR period;"

2 Paragraph 4.1.11 is amended as follows:

"4.1.11 If the IDE DR site operator notes that three (3) or more System status messages from the IDE have been missed and there has been no scheduled or unscheduled notification or advisory notice posted on the IDE Administrative interface, then the IDE DR site operator should attempt to contact the IDE operator to determine the nature of problem. If, within 30 minutes, the IDE DR site operator is unable to contact the IDE, then the IDE DR site should advise all DCs and the LRIT Coordinator that there is a problem with the IDE and that the process for a failover to the IDE DR site is being activated."

3 In the appendix, the last sentence is amended as follows:

"The LRIT Operational governance body is defined as the chairman of the Ad Hoc LRIT Group, a representative of the IDE, a representative of the IDE DR site and a representative from the Secretariat."

4 In the appendix, paragraph 5 is amended as follows:

"5 The composition of the LRIT Operational governance body could be reviewed in the future. For the effective and efficient operation of this body, its membership needs to be relatively small, organization members are preferable to individual persons, and it must reach decisions by consensus. This body should always contain a representative from the IDE and the IDE DR site, since the IDE is a critical central component of the system, and a representative from the Secretariat. The requirements for other member(s) require further discussion."

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ANNEX 18

DRAFT RESOLUTION MSC.[...(90)]
(adopted on [...])

AMENDMENTS TO RESOLUTION MSC.298(87) ON ESTABLISHMENT OF A DISTRIBUTION FACILITY

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, at its eighty-seventh session, it had approved resolution MSC.298(87) on Establishment of a distribution facility for the provision of LRIT information to security forces operating in waters of the Gulf of Aden and the western Indian Ocean to aid their work in the repression of piracy and armed robbery against ships (the distribution facility),

NOTING that the Secretariat had established a distribution facility at IMO Headquarters and that a number of naval forces engaged in operations against the perpetrators in waters of the Gulf of Aden and the western Indian Ocean (the area) had advised that the use of the distribution facility had proven to be efficient and was providing security forces with a holistic picture of the ships operating in the area, enabling them to more effectively and efficiently deploy the limited available naval and military assets and enhancing the protection they offered to shipping and mariners transiting the area,

NOTING ALSO that, at its eighty-ninth session, it had agreed that the addition of polling functionalities to the distribution facility should be implemented as an "opt-in" arrangement in the LRIT system where each flag State would have the ability to determine which security force, if any, would be entitled to transmit polling request messages to them,

HAVING CONSIDERED, at its [ninetieth session], a technical solution for adding polling functionalities to the distribution facility,

1. AGREES that the addition of polling functionalities to the distribution facility will allow security forces to more accurately identify the current position of ships approaching areas of high risk of piracy attack;

2. AGREES ALSO to the implementation of the above polling functionality as an "opt-in" arrangement where the participation of flag States will be completely voluntary and each flag State will have the ability to determine which security force, if any, will be authorized to poll the position of any of their own ships that might be approaching areas of high risk of piracy attack;

3. ADOPTS amendments to resolution MSC.298(87) on Establishment of a distribution facility, the contents of which are set out in the annex to the present resolution;

4. INSTRUCTS the Secretariat to implement and test the above functionalities in the distribution facility, taking into account the relevant decisions of the Committee, and to amend the Web interface of the LRIT Data Distribution Plan so as to allow SOLAS Contracting Governments to decide which security force(s), if any, would be authorized to transmit polling request messages to any of their own ships;

5. ENCOURAGES SOLAS Contracting Governments to consider, in case they have not done so, providing flag State LRIT information to security forces operating in the area and allowing them to transmit polling request messages to ships flying their flag when approaching areas of high risk of piracy attack;

6. INVITES the Secretary-General to issue a circular letter advising all SOLAS Contracting Governments on the availability of the above functionality within the distribution facility and describing the "opt-in" process.

* * *

ANNEX

AMENDMENTS TO RESOLUTION MSC.298(87) ON ESTABLISHMENT OF A DISTRIBUTION FACILITY

1 The existing text of paragraph 5 is deleted and replaced by the following text:

"5 The distribution facility will not have the capability to present the flag State LRIT information in a graphical manner."

2 The following three new paragraphs are added after existing paragraph 9:

"**Polling the current location of an specific ship**

10 Security forces wishing to poll the current position of a specific ship that may be approaching an area of high risk of attack should indicate the IMO ship identification number and the LRIT ID of the Administration whose flag the ship is flying (the Data User Provider).

11 Polling position request messages will be transmitted by the distribution facility to the LRIT Data Centre associated with the Administration of the ship, through the IDE, only if the SOLAS Contracting Government concerned has authorized the security force in question to poll the current position of their own flag ships.

12 The provision of flag State LRIT information in response to a polling request message received from a security force is completely voluntary. SOLAS Contracting Governments have the right to decide, at any moment, and instruct their LRIT Data Centres whether polling request messages transmitted by security forces should be processed and responded."

3 The existing paragraphs 10 to 16 are renumbered as paragraphs 13 to 19, respectively.

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ANNEX 19

DRAFT COMSAR CIRCULAR

AUDITS OF LRIT DATA CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE CONDUCTED BY THE LRIT COORDINATOR

1 The Maritime Safety Committee, at its eighty-fifth session, appointed the International Mobile Satellite Organization (IMSO) as the LRIT Coordinator and requested the LRIT Coordinator to perform the functions and duties specified in paragraphs 14.1 to 14.5 of the Revised performance standards and functional requirements for the Long-range identification and tracking of ships adopted by resolution MSC.263(84).

2 The Sub-Committee on Radiocommunications and Search and Rescue, at its sixteenth session (12 to 16 March 2012), prepared the attached list of audits conducted by the LRIT Coordinator.

3 The present circular contains the list of audits conducted by the LRIT Coordinator as of 8 December 2011.

* * *

ANNEX

AUDITS OF LRIT DATA CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE CONDUCTED BY THE LRIT COORDINATOR (as on 8 December 2011)

LRIT system component	Type	LRIT ID	Audit period
			2008 / 2009 / 2010 / 2011 / 2012
DDP		0001	Not applicable
IDE		0002	MSC 88 / MSC 89
Algeria	**NDC**	3002	
Antigua and Barbuda	**NDC**	3004	MSC 88 / COMSAR 16
Argentina	**NDC**	3005	
Australia	**NDC**	3006	MSC 88 / COMSAR 16
Azerbaijan	**NDC**	3008	COMSAR 16
Bahamas	**NDC**	3009	MSC 87 / COMSAR 16
Bahrain	**NDC**	3010	MSC 89 / COMSAR 16
Bangladesh	**NDC**	3011	
Barbados	**NDC**	3012	MSC 88 / COMSAR 16
Belize	**NDC**	3015	MSC 88 / COMSAR 16
Bermuda (UK)	**NDC**	3206	MSC 89
Brazil	NDC	3018	MSC 87 / - - - / No longer in production
Brazil	**RDC**	3303	COMSAR 16
Brunei Darussalam	**NDC**	3019	
Cambodia	**NDC**	3021	
Canada	**NDC**	3023	MSC 87 / COMSAR 16
Cayman Islands (UK)	**NDC**	3208	MSC 88 / COMSAR 16
Chile	**NDC**	3025	MSC 88
China	**NDC**	3026	MSC 89 / COMSAR 16
Comoros	**NDC**	3028	
Croatia	NDC	3032	MSC 89 / - - - / No longer in production
Dem. People's Rep. of Korea	**NDC**	3036	COMSAR 16
Dominica	**NDC**	3040	
Ecuador	**NDC**	3042	
Egypt	**NDC**	3043	COMSAR 16
European Union	**CDC**	3302	MSC 88 / COMSAR 16
Faroe Islands (Denmark)	**NDC**	3217	MSC 89
Guyana	**NDC**	3060	
India	**NDC**	3065	MSC 88 / COMSAR 16
Indonesia	**NDC**	3066	MSC 89
Islamic Republic of Iran	**NDC**	3067	
Isle of Man (UK)	**NDC**	3212	MSC 88 / COMSAR 16
Israel	**NDC**	3070	COMSAR 16
Jamaica	**NDC**	3072	MSC 88 / COMSAR 16
Japan	**NDC**	3073	MSC 88 / COMSAR 16
Jordan	**NDC**	3074	MSC 89
Kenya	**NDC**	3076	
Kuwait	**NDC**	3078	COMSAR 16
Liberia	**NDC**	3081	MSC 88 / COMSAR 16
Malaysia	**NDC**	3087	
Marshall Islands	**NDC**	3090	MSC 87 / COMSAR 16
Mauritius	**NDC**	3092	COMSAR 16
Montenegro	**NDC**	3096	COMSAR 16
Morocco	**NDC**	3097	MSC 89
Myanmar	**NDC**	3099	MSC 89 / COMSAR 16

LRIT system component	Type	LRIT ID	Audit period
			2008 / 2009 / 2010 / 2011 / 2012
Nigeria	NDC	3104	COMSAR 16
Pacific	CDC	3304	
Pakistan	NDC	3107	MSC 89
Panama	NDC	3108	MSC 89
Philippines	NDC	3112	COMSAR 16
Plur. State of Bolivia	NDC	3017	COMSAR 16
Qatar	NDC	3115	COMSAR 16
Republic of Korea	NDC	3116	MSC 88 / COMSAR 16
Russian Federation	NDC	3119	MSC 89
Saint Kitts and Nevis	NDC	3120	MSC 89
St Vincent and the Grenadines	NDC	3122	MSC 88
Seychelles	NDC	3128	
Sierra Leone	NDC	3129	MSC 89 / COMSAR 16
Singapore	NDC	3130	MSC 88 / COMSAR 16
South Africa	NDC	3134	MSC 89
Thailand	NDC	3142	COMSAR 16
Turkey	NDC	3147	COMSAR 16
Tuvalu	NDC	3148	- - - No longer in production
Ukraine	NDC	3149	COMSAR 16
United Arab Emirates	NDC	3150	COMSAR 16
United Republic of Tanzania	NDC	3152	COMSAR 16
United States	NDC	3153	MSC 88 / COMSAR 16
Vanuatu	NDC	3155	MSC 88 / COMSAR 16
Venezuela	NDC	3156	

Note:

The following documents contain the Summary audit reports submitted by the LRIT Coordinator:

MSC 87/6/8 (Secretariat)
MSC 88/INF.14 (Secretariat)
MSC 89/INF.14 (Secretariat)
COMSAR 16/13/1 (IMSO)

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ANNEX 20

DRAFT MSC CIRCULAR

PRINCIPLES AND GUIDELINES RELATING TO THE REVIEW AND AUDIT OF THE PERFORMANCE OF LRIT DATA CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE

1 The Maritime Safety Committee, at its eighty-sixth session, approved the Principles and guidelines relating to the review and audit of the performance of LRIT Data Centres and the International LRIT Data Exchange (Principles and guidelines), as set out in document MSC 86/26, annex 6, and amended by MSC 88 (MSC 88/6/1, annex 5 refers).

2 The Maritime Safety Committee (the Committee), at its [ninetieth] session [11 to 20 May 2012], bearing in mind the relevant decision of MSC 89 to task the COMSAR Sub-Committee to deal with LRIT-related issues, reviewed the Principles and guidelines and approved further amendments, as set out in the annex.

3 The Principles and guidelines provides the criteria, procedures and arrangements for the establishment, review and audit of the provision of long-range identification and tracking information to SOLAS Contracting Governments pursuant to the provisions of regulation V/19-1 and the Revised performance standards and functional requirements for the long range identification and tracking of ships, adopted by resolution MSC.263(84), [as amended].

4 The Committee agreed to keep the Principles and guidelines under review and to amend it as and when the circumstances so warrant.

5 SOLAS Contracting Governments are invited to bring the present circular to the attention of those engaged in the operation of LRIT Data Centres and the International LRIT Data Exchange.

6 SOLAS Contracting Governments and the LRIT Coordinator are also invited to bring to the attention of the Committee, at the earliest opportunity, the results of the experience gained from the use of the Principles and guidelines for consideration of any appropriate action to be taken.

* * *

ANNEX

PRINCIPLES AND GUIDELINES RELATING TO THE REVIEW AND AUDIT OF THE PERFORMANCE OF LRIT DATA CENTRES AND OF THE INTERNATIONAL LRIT DATA EXCHANGE[1]

General

1 The Maritime Safety Committee, pursuant to the provisions of SOLAS regulation[2] V/19-1.14 and subject to the relevant provisions of section 14 of the Revised performance standards[3], has determined the following in relation to the review and audit of the performance of LRIT Data Centres and of the International LRIT Data Exchange.

Audit client[4]

2 The audit client is all Contracting Governments to the 1974 SOLAS Convention (Contracting Governments) acting through the Committee.

Auditor

3 The auditor is the LRIT Coordinator.

Auditee(s)

4 The auditees are all LRIT Data Centres (DCs) and the International LRIT Data Exchange (IDE).

Audit programme

5 The audit programme is a third-party audit conducted by the LRIT Coordinator annually.

Audit programme objectives

6 The objectives of the review and audit of the performance of DCs and of the IDE are:

.1 to verify that the LRIT system operates in accordance with the provisions of SOLAS regulation V/19-1 and of the Revised performance standards, taking into account the related provisions of the Technical specification for the LRIT system and any relevant decisions of the Committee;

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1 Terms not otherwise defined in this document should have the same meaning as the meaning attributed to them in chapters I and V of the International Convention for the Safety of Life at Sea, 1974, as amended; Revised performance standards and functional requirements for the Long-range identification and tracking of ships adopted by resolution MSC.263(84).

2 *Regulation* means a regulation of the annex to the International Convention for the Safety of Life at Sea,1974, as amended.

3 *Revised performance standards* means the Revised performance standards and functional requirements for the Long-range identification and tracking of ships adopted by resolution MSC.263(84).

4 All audit related terms used in this document have the same meaning as in ISO 19011:2002 on Guidelines for quality and/or environmental management systems auditing.

.2 to verify that Contracting Governments and Search and rescue services receive only the LRIT information they have requested and are entitled to receive;

.3 to verify that DCs operate in accordance with the provisions of SOLAS regulation V/19-1 and of the Revised performance standards, taking into account the related provisions of the Technical specification for the LRIT system and any relevant decisions of the Committee;

.4 to verify that the IDE operates in accordance with the provisions of SOLAS regulation V/19-1 and of the Revised performance standards, taking into account the related provisions of the Technical specification for the LRIT system and any relevant decisions of the Committee;

.5 to identify any need for initiating corrective and/or preventative actions in the LRIT system; and

.6 to identify opportunities for improving the efficiency, effectiveness and security of the LRIT system.

Audit criteria

7.1 The main criteria are SOLAS regulation V/19-1 and the Revised performance standards.

7.2 The supplementary criteria are the Technical specification for the LRIT system[4]; guidance, guidelines and recommendations approved or adopted by the Committee in relation to the LRIT system; and instructions of the Committee to the LRIT Coordinator in connection with the review and audit of the performance of the auditees.

7.3 The documents setting out the main and supplementary criteria are listed in appendix 1 which provides an index of all documents relating to the long-range identification and tracking of ships as on 31 October 2011.

7.4 After each session of the Committee and when amendments to any of the technical documentation for the LRIT system[5] are agreed, the Secretariat should update the information provided in appendix 1 accordingly and should forward the revised copy of appendix 1 to the LRIT Coordinator and to all auditees by using the contact details provided in the LRIT Data Distribution Plan.

Audit scope

8.1 The scope of the audit is limited to matters relating to the operation of the DCs and of the IDE to the extent such matters can be reasonably and with confidence verified through the audit evidence.

[4] Refer to MSC.1/Circ.1259/Rev.4 on Long-range identification and tracking system Technical documentation (part I).

[5] Refer to MSC.1/Circ.1259/Rev.4 on Long-range identification and tracking system Technical documentation (part I) and annexes 2 and 3 of the annex to MSC.1/Circ.1294/Rev.2 on Long-range identification and tracking system Technical documentation (part II).

8.2 Matters relating to the implementation of the provisions of SOLAS regulation V/19-1 and of the Revised performance standards by Contracting Governments are outside the scope of the audit and fall within the scope of the Framework and Procedures for the Voluntary IMO Member State Audit Scheme adopted by resolution A.974(24).

8.3 Specifically all matters which would require the provision to the LRIT Coordinator of list(s) of ships which at any particular time are required to transmit LRIT information in accordance with the provisions of SOLAS regulation V/19-1.4.1 are outside the scope of the audit. For example, questions such as whether all such ships have in fact been integrated and are transmitting LRIT information or whether or how the provisions of SOLAS regulation V/19-1.7 are implemented.

8.4 Unless the Committee decides otherwise the LRIT Coordinator is not required to audit the fee structure of DCs or of the IDE.

Responsibilities

9.1 The LRIT Coordinator and the auditee should be well aware of the importance of the task they are about to perform and should act with care and professionalism when discharging their responsibilities related to the review and audit.

9.2 In this context, the LRIT Coordinator should:

.1 conduct a fair, consistent, professional, independent and evidence-based audit;

.2 discharge its responsibilities in relation to the audit in a timely manner;

.3 cooperate and provide assistance to the auditee on any matters related to audit;

.4 establish communication with the auditee and provide the auditee with necessary information related to the audit;

.5 make audit findings available to the auditee and seek contributions of the auditee within an established time frame;

.6 prepare a complete, accurate, concise and clear record of the audit and make copies available to the auditee;

.7 submit a comprehensive report of the audit to the Secretary-General of IMO; and

.8 submit a summary report of the audit to the COMSAR Sub-Committee for consideration.

9.3 On its part, the auditee will be expected to:

.1 cooperate with the LRIT Coordinator and to discharge its responsibilities in relation to the audit in a timely manner;

.2 conclude a contractual agreement with the LRIT Coordinator with respect to the legal, operational and financial commitments of the audit;

.3 settle its financial obligations vis-à-vis the LRIT Coordinator in accordance with the arrangements it has made with the LRIT Coordinator;

.4 cooperate and make available to the LRIT Coordinator the information and audit evidence required to enable the satisfactory completion of an audit of its performance;

.5 determine and propose corrective actions to address any significant audit findings; and

.6 keep the LRIT Coordinator informed of the status of their finding note(s).

Audit evidence

10.1 The LRIT Coordinator should establish the details of the audit evidence it requires to be submitted for the review and audit of the performance of DCs and of the IDE.

10.2 The audit evidence should, at least, consist of:

.1 replies to questionnaire(s) developed by the LRIT Coordinator taking into account the audit objectives, criteria and scope;

.2 samples of LRIT information and samples of LRIT messages, including related samples of journals, where such ones are required;

.3 statistics compiled by DCs and the IDE, as appropriate;

.4 records of communications between the LRIT Coordinator and DCs and/or the IDE;

.5 data and information contained in the production environment of the LRIT Data Distribution Plan~~.~~; and

.6 data and information that may be obtained from Search and rescue services.

10.3 The LRIT Coordinator should put in place the necessary arrangements to ensure that all audit evidence is protected from unauthorized access or disclosure as from the time such evidence is received by the LRIT Coordinator.

10.4 The LRIT Coordinator is not normally required to submit for the consideration of the Committee any of the audit evidence.

10.5 The LRIT Coordinator should destroy all audit evidence relating to the review and audit of the performance of a DC or of the IDE immediately after the Committee has reviewed and accepted its related report, or after the resolution of any pending or outstanding issues or after the closing of any outstanding non-conformities, whichever is later. The method for the destruction of the audit evidence remains at the discretion of the LRIT Coordinator.

10.6 All DCs are required to provide to the LRIT Coordinator at least one sample of LRIT information and LRIT messages which covers 30 consecutive calendar days

(the 30-day sample) during the period which is to be covered by the audit. The LRIT Coordinator should determine, in consultation with the DC concerned, the first and last date to be covered by the samples. The DC and the LRIT Coordinator should endeavour to reach a mutual understanding on the dates to be covered by the sample in cases of any difference of opinion. If such consultations do not yield an agreed approach, then the decisions of the LRIT Coordinator shall prevail.

10.7 Taking into account the number of DCs subject to audit and review in a given calendar year, it is recognized that the IDE may be required to provide to the LRIT Coordinator the journal(s) of all transactions for the whole calendar year. The LRIT Coordinator and the IDE should consider and agree practical arrangements for the provision of the IDE Journals to the LRIT Coordinator for the purpose of review and audit of the performance of DC and of the IDE. The LRIT Coordinator should provide relevant information to the Committee as appropriate.

10.8 The LRIT Coordinator may, if it finds it fit and appropriate, require the submission of further audit evidence as the circumstances may warrant.

10.9 The LRIT Coordinator should establish and make known to all DCs and to the IDE the method(s) and format(s) to be used for providing the audit evidence and in particular the samples. The LRIT Coordinator should provide information to this end to the Committee.

10.10 Notwithstanding the related provisions of the Revised performance standards, the LRIT Coordinator should seek the provision of audit evidence from Search and rescue services if it finds it fit and appropriate.

Audit plan and procedures

11 The LRIT Coordinator should develop the audit plans and procedures and should provide details of these to all DCs and the IDE. The LRIT Coordinator should provide information to this end to the Committee.

Audit findings and corrective actions

12.1 The LRIT Coordinator should evaluate the audit evidence against the audit criteria and generate audit findings. Audit findings can indicate either conformity or non-conformity with the audit criteria. Additionally, some audit findings can identify opportunities for improvements.

12.2 The LRIT Coordinator should determine and grade all non-conformities as either major non-conformities or non-conformities. Opportunities for improvements may be indicated as observations by the LRIT Coordinator.

12.3 The DC concerned or the IDE should, in consultation with the LRIT Coordinator, determine and propose the corrective action(s) and the period within which the non-conformities should be dealt with and closed. DCs and the IDE should always keep the LRIT Coordinator informed of the status of their finding note(s). The completion and effectiveness of corrective actions should be verified by the LRIT Coordinator, normally at the next audit.

12.4 The LRIT Coordinator should, if it finds it fit and appropriate, require the submission of further audit evidence or samples with a view to ascertaining that the agreed corrective action(s) have been implemented and the non-conformity has been dealt with and/or that any further non-conformities have not occurred. If the LRIT Coordinator does not see a

compelling need to request submission of further audit evidence, the verification of the corrective actions should be undertaken at the next audit of the DC concerned or of the IDE.

12.5 In case any identified non-conformity affects the continuity of the LRIT system, the LRIT Coordinator should inform, as soon as is practically possible, the members of the Operational governance body, as defined in MSC.1/Circ.1376, and should provide to them relevant details in order to enable them to determine the actions to be taken in accordance to the instructions of the Committee.

Audit date

13.1 Audit date should be considered as the date on which the LRIT Coordinator will begin the audit analysis and by which the LRIT Coordinator must therefore have received the required audit evidence.

13.2 In this context, the LRIT Coordinator should, in consultation with the auditee, determine and confirm the audit date prior to audit. The auditee and the LRIT Coordinator should make every attempt to resolve any diverging opinions concerning the audit date. However, if an agreement cannot be reached, then the decisions of the LRIT Coordinator shall prevail.

Audit language

14 All correspondence, records, communications, audit evidence and audit plans and procedures should be in the English language.

Reporting

15.1 For each of DCs and for the IDE, the LRIT Coordinator should submit:

.1 to the Secretary-General a detailed audit report which should provide a complete, accurate, concise and clear record of the audit and should include or refer to the following: the audit objectives, the audit scope, particularly identification of the unit or processes audited and the time period covered; a list of the auditee representative(s); the dates when the audit activities were conducted; the audit criteria; the audit findings; the audit conclusions; and any statement of a confidential nature; and

.2 to the Committee, through the COMSAR Sub-Committee, a summary audit report which should include or refer to the following: the audit findings, including information on non-conformities and their status; the audit conclusions; any uncertainties and/or obstacles encountered that could decrease the reliability of the audit conclusions; any areas not covered although within the scope of the audit; any unresolved diverging opinions between the LRIT Coordinator and the auditee; recommendations for improvement, if any; and agreed follow-up action plans, if any.

15.2 The LRIT Coordinator should, prior to submitting the detailed audit reports to the Secretary-General and the summary audit reports to the COMSAR Sub-Committee, forward these, no later than one month after the completion of the audit, to the auditee for its perusal and comments, if any.

15.3 Any comments of the auditee should be submitted to the LRIT Coordinator within 15 days after the date of which the report has been sent to the auditee and, unless the

LRIT Coordinator and the auditee agree to include these in the summary audit report, these should be included in the detailed audit report.

15.4 The LRIT Coordinator and the auditee should endeavour to resolve any difference of opinion in relation to the contents of the detailed and the summary audit reports within five days after the date the auditee has submitted its comments. If the matter cannot be resolved, the comments of the auditee should be included in the summary audit report for consideration of the issue by the Committee.

15.5 The LRIT Coordinator should send copies of the detailed and the summary audit reports submitted to the auditee concerned. The detailed and the summary audit reports should be in the English language.

15.6 The LRIT Coordinator should submit the summary audit reports to the COMSAR Sub-Committee in accordance with the Guidelines on the organization and method of work of the MSC and MEPC and their subsidiary bodies (MSC-MEPC.1/Circ.4), taking into account, in particular, the normal deadline for submissions of bulky documents. The COMSAR Sub-Committee will consider the summary audit reports, on behalf of the Committee, and will report on any issues that might require further consideration or approval by the Committee.

15.7 The summary audit reports should not be translated in the three working languages and should be circulated as documents containing information in the English language only.

15.8 The Secretary-General should protect the detailed audit reports from unauthorized access or disclosure and should keep these for a period not exceeding five years as from the date of completion of the audit they referred to and afterwards should destroy these, provided there are no outstanding or pending issues.

15.9 The Secretary-General should make available to the Committee or the COMSAR Sub-Committee the detailed audit reports, if requested. In such cases, the detailed audit reports should not be translated in the three working languages of the Organization and should be made available as documents containing information in the English language only.

Reporting on the review and audit of the performance of DCs and/or of the IDE

16.1 The LRIT Coordinator should report to each session of the COMSAR Sub-Committee on the review and audit of the performance of DCs and/or of the IDE which had been conducted and completed since the previous session of the Sub-Committee.

16.2 The anniversary date of the IDE is 15 October of each year.

16.3 The anniversary date of a DC is the date on which DCs:

.1 which participated in the prototype testing phase, become part of the production environment of the LRIT system; and

.2 which have undergone or are undergoing or are to undergo developmental and integration testing, have completed or are to complete the integration testing phase.

16.4 In addition, the anniversary date of an existing DC may change in the way specified below if the DC concerned undergoes additional testing for any of the following reasons:

.1 if a NDC is to start providing services to Contracting Government(s) other than that which established the centre – Anniversary date remains unchanged;

.2 if a NDC is to become an RDC or a CDC – Anniversary date becomes the date on which the new testing was completed;

.3 if a NDC that is already providing services to other Contracting Government(s), or a RDC or a CDC is to start providing services to Contracting Government(s) which was/were not included in previous testing – Anniversary date remains unchanged; and

.4 if a Contracting Government is to become part of the establishment of an existing RDC or CDC – Anniversary date remains unchanged;

16.5 The review and audit of the performance of DCs and of the IDE should be carried out within three months before or after the anniversary date, provided the period between two consecutive audits does not exceed 15 months. A DC or the IDE may still be liable for review and audit of its performance even after it has ceased its operations provided that it had been operational in the production system at least 6 months since its first integration or anniversary date, whichever applies.

16.6 A DC may request the LRIT Coordinator to review and audit its performance on any date within three months before or after the anniversary date referred to in paragraph 16.3 or 16.4, provided the first audit is not held more than 15 months after the date referred to in paragraph 16.3. If the audit, upon request of the DC and subject to acceptance of the LRIT Coordinator, is carried out more than three months before the anniversary date, the new audit date should be considered thereafter as being the new anniversary date. The LRIT Coordinator should provide to the COMSAR Sub-Committee information to this end as appropriate.

16.7 If the first audit of a DC cannot be carried out within 15 months after the date referred to in paragraph 16.3 or 16.4, or if the period between two consecutive audits exceeds 15 months, the DC concerned should remain liable to complete that audit at the earliest opportunity. This liability should accumulate until all outstanding annual audits have been completed. The LRIT Coordinator should provide to the COMSAR Sub-Committee information to this end, as appropriate. The audit will additionally report on the reason(s) that led the DC to be audited after the maximum 15-month period, and will recommend that the DC concerned takes all necessary measures to avoid the need to conduct further audits in the future which exceed the maximum 15-month period.

Technical issues

17 Appendix 2 provides related information on a number of matters in connection with the review and audit of the performance of DCs and of the IDE of a technical nature.

Audit programme review and monitoring

18 Contracting Governments acting through the Committee should monitor the implementation of the audit programme and, at appropriate intervals, should review it to assess whether its objectives have been met and identify opportunities for improvement or to initiate corrective or preventative actions.

* * *

APPENDIX 1

LIST OF DOCUMENTS RELATING TO THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS

(as of 16 March 2012)

Resolution MSC.202(81)	2006 SOLAS (chapter V) amendments
Resolution MSC.211(81)	Arrangements for the timely establishment of the Long-range identification and tracking system
Resolution MSC.242(83)	Use of long-range identification and tracking information for safety and marine environmental protection purposes
Resolution MSC.263(84)	Revised performance standards and functional requirements for the long-range identification and tracking of ships
Resolution MSC.264(84)	Establishment of the International LRIT Data Exchange on an interim basis
Resolution MSC.275(85)	Appointment of the LRIT Coordinator
Resolution MSC 276(85)	Operation of the international LRIT data exchange on an interim basis
Resolution MSC.297(87)	Establishment of the International LRIT Data Exchange
Resolution MSC.298(87)	Establishment of a distribution facility for the provision of LRIT information to security forces operating in waters of the Gulf of Aden and the western Indian Ocean to aid their work in the repression of piracy and armed robbery against ships (the distribution facility)
Resolution MSC.322(89)	Operation of the International LRIT Data Exchange
MSC.1/Circ.1259/Rev.4	Long-range identification and tracking system Technical documentation (part I) – Interim revised technical specifications for the LRIT system
MSC.1/Circ.1294/Rev.2	Long-range identification and tracking system Technical documentation (part II)
MSC.1/Circ.1295	Guidance in relation to certain types of ships which are required to transmit LRIT information on exemptions and on certain operational matters
MSC.1/Circ.1298	Guidance on the implementation of the LRIT system
MSC.1/Circ.1307	Guidance on the survey and certification of compliance of ships with the requirement to transmit LRIT information
MSC.1/Circ.1338	Guidance to Search and rescue services in relation to requesting and receiving LRIT information
MSC.1/Circ.1376	Continuity of service plan for the LRIT system
MSC.1/Circ.1377/Rev.5	List of application service providers authorized to conduct conformance tests and issue LRIT Conformance test reports on behalf of the administrations

APPENDIX 2

TECHNICAL MATTERS

1 The LRIT Coordinator is not expected to engage in any audit, verification or investigation as to the existence, accuracy or veracity of Notices of Arrival in connection with requests for the provision of LRIT information pursuant to the provisions of regulation V/19-1.8.1.2 and in this respect Notices of Arrival should be considered as being outside the scope of the review and audit.

2 In order to verify compliance with the provisions of paragraph 13.1 of the Revised performance standards, *TimeStamp1* and *TimeStamp4* of the LRIT position report message should be used. The time duration established by the difference between *TimeStamp1* and *TimeStamp4* of the LRIT position report message should be less than 15 min. Furthermore, the latency between the transmitting DC sending the LRIT information to the end user should be considered as being negligible (i.e. of the order of seconds).

3 In order to verify compliance with the provisions of paragraph 13.2 of the Revised performance standards on-demand LRIT information should be considered as a poll request and the *TimeStamp* parameter of the LRIT position request and the *TimeStamp4* of the LRIT position report should be used. The time duration established by the difference between *TimeStamp* parameter of the LRIT position request and *TimeStamp4* of the LRIT position report message should be less than 30 min. Furthermore, the latency between the transmitting DC sending the report to the end user should be considered as being negligible (i.e. of the order of seconds). Additionally, if for any reason it is found necessary to use alternative sources to verify such compliance, the LRIT Coordinator should use the Rx and Tx *TimeStamps* contained in the IDE's journal for the LRIT position request and LRIT position report messages.

4 Each port, port facility or place under the jurisdiction of a Contracting Government should be considered as the centre of a circle and the distance indicated in the LRIT position request as corresponding with the radius of the circle. The difference on the calculation of the distances using different chart projections should be considered as being irrelevant, in terms of the precision required by the LRIT system as in most cases the ships are in motion when transmitting LRIT information.

5 When the entitlement of Contracting Governments to LRIT information is verified, it should be taken into account that different DCs and the LRIT Coordinator may utilize different GIS implementations, which may occasionally yield slightly different interpretations of where a ship is located in relation to DDP-defined polygons. This may result in occasional, legitimate technical differences between the LRIT Coordinator and the audited DC when determining which Contracting Governments are entitled to a particular ship position.

5.1 If DCs and the LRIT Coordinator use industry-standard GIS software applications, or custom-coded solutions that implement well-established computational geometric algorithms, the occurrence should be rare. The LRIT Coordinator may determine, on a case-by-case basis, if the differences between its own entitlement determinations and those of the audited DC are sufficient to warrant detailed analysis.

6 DCs should provide to the LRIT Coordinator all LRIT Messages with the exception of the file attachments associated with Message 10 (DDP Update) and Message 12 (Journal). All LRIT messages are required to have a unique *MessageId* parameter.

7 LRIT position reports that have not been transmitted to any other DCs until the time of the information for the review and audit is provided should be classified as Message type 1 with Response type 2 when provided to the LRIT Coordinator. The parameters *TimeStamp5*, *DataUserRequestor* and the attribute *positionSent* of the LRIT position reports that have not been transmitted to any other DCs should be populated with values as follows:

.1 *TimeStamp5* = dummy value (i.e.1000-01-01T00:00:00Z)

.2 *DataUserRequestor* = 0003 (the LRIT ID of the LRIT Coordinator)

.3 *positionSent* = false

8 The IDE should provide its journal with the exception of the file attachments associated with Message 10 (DDP Update) and Message 12 (Journal). The parameters Latitude, Longitude, *TimeStamp1* and *ShipborneEquipmentId* of the LRIT position reports should be populated with values as follows:

.1 *Latitude* = dummy value

.2 *Longitude* = dummy value

.3 *TimeStamp1* = dummy value (i.e.1000-01-01T00:00:00Z)

.4 S*hipborneEquipmentId* = dummy value

9 All information contained in the audit files should be in XML and in the English language encoded in UTF-8.

9.1 DCs should provide to the LRIT Coordinator, upon request, a file LRITMessageLog_<LRIT ID of the DC>.xml[6].

9.2 The IDE should provide the LRIT Coordinator, upon request, a file LRITMessageLog_<LRIT ID of the IDE>.xml[7].

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[6] The XML schema to be used for the LRITMessageLog file is specified in section 2.3.10 (Processing Journal messages) of the Technical specifications for communications within the LRIT system.

[7] The XML schema file to be used for the LRITMessageLog file is specified in section 2.3.10 (Processing Journal messages) of the Technical specifications for communications within the LRIT system.

ANNEX 21

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

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE (COMSAR)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number**	Description				
1.1.2.10	Cooperation with ICAO: annual meeting of the Joint ICAO/IMO Working Group on the Harmonization of Aeronautical and Maritime Search and Rescue (monitoring of SAR developments, continuous review of the IAMSAR Manual and developing recommendations)	MSC	COMSAR	DE	Continuous
1.1.2.12	**Cooperation with ITU: consideration of matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference**	**MSC**	**COMSAR**	**NAV**	**Continuous**
1.1.2.16	Liaison statements to/from IEC: radiocommunications and safety of navigation	MSC	COMSAR	NAV	Continuous
1.1.2.19	Liaison statements to/from ITU: radiocommunications	MSC	COMSAR	NAV	Continuous
1.1.2.20	Liaison statements to/from UNHCR: persons rescued at sea	MSC/FAL	COMSAR	NAV	Continuous
1.3.5.2	**Development of amendments to the IAMSAR Manual**	**MSC**	**COMSAR**		**Continuous**
2.0.3.1	Technical guidance for the establishment of regional MRCCs and MRSCs in Africa, supported by the ISAR Fund	MSC	SEC	COMSAR	Continuous
2.0.3.2	**Further development of the Global SAR Plan for the provision of maritime SAR services, including procedures for routeing distress information in the GMDSS**	**MSC**	**COMSAR**		**Continuous**

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

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

[* New unplanned output with a target completion year of 2017, subject to approval by MSC 90.]

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE (COMSAR)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		**Parent organ(s)**	**Coordinating organ(s)**	**Involved organ(s)**	**Target completion year**
Number**	**Description**				
2.0.3.4	Reports on the Cospas-Sarsat System monitored and the list of IMO documents and publications which should be held by MRCCs updated	MSC	SEC	COMSAR	Continuous
2.0.3.5	**Development of guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters**	**MSC**	**COMSAR**		~~2012~~ **2013**
5.1.2.2	**Development of measures to protect the safety of persons rescued at sea**	**MSC/FAL**	**COMSAR**	**FSI**	~~2012~~ **2013**
5.2.1.25	Development of guidelines for wing-in-ground craft	MSC	DE	FP/ COMSAR/ NAV/SLF/ STW	2013
~~5.2.4.2~~	~~Revision of the Recommendation for the protection of the AIS VHF Data Link (resolution MSC.140(76))~~	~~MSC~~	~~COMSAR~~		~~2013~~
5.2.4.4	Non-mandatory instruments: implementation of LRIT system	MSC	COMSAR		Continuous
5.2.4.6	**Non-mandatory instruments: consideration of LRIT matters**	**MSC**	**COMSAR**		**Continuous**
5.2.5.1	**Non-mandatory instruments: consideration of operational and technical coordination provisions of maritime safety information (MSI) services, including development and review of related documents**	**MSC**	**COMSAR**		**Continuous**
5.2.5.2	**Development of measures to avoid false distress alerts**	**MSC**	**COMSAR**		**2013**
5.2.5.3	**Further development of the GMDSS master plan on shore-based facilities**	**MSC**	**COMSAR**		**Continuous**
5.2.5.4	**Consideration of developments in Inmarsat and Copsas-Sarsat**	**MSC**	**COMSAR**		**Continuous**
5.2.5.5	**Developments in maritime radiocommunication systems and technology**	**MSC**	**COMSAR**		~~2012~~ **2013**

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE (COMSAR)*					
PLANNED OUTPUTS 2012-2013 (resolution A.1038(27))		Parent organ(s)	Coordinating organ(s)	Involved organ(s)	Target completion year
Number**	Description				
~~5.2.5.6~~	~~Scoping exercise to establish the need for a review of the elements and procedures of the GMDSS~~	~~MSC~~	~~COMSAR~~		~~2012~~
5.2.6.1	**Non-mandatory instruments: development of an e-navigation strategy implementation plan**	**MSC**	**NAV**	**COMSAR/ STW**	**2012**

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

MARITIME SAFETY COMMITTEE (MSC)								
ACCEPTED POST-BIENNIAL OUTPUTS				Parent organ(s)	Coordinating organ(s)	Associated organ(s)	Timescale (sessions)	References
Number	Reference to Strategic Direction	Reference to High-level Actions	Description					
none								

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ANNEX 22

DRAFT PROVISIONAL AGENDA FOR COMSAR 17

Opening of the session

1 Adoption of the agenda

2 Decisions of other IMO bodies

3 Global Maritime Distress and Safety System (GMDSS)

.1 Review and modernization of the Global Maritime Distress and Safety System*

.2 Further development of the GMDSS master plan on shore-based facilities

.3 Consideration of operational and technical coordination provisions of maritime safety information (MSI) services, including the development and review of the related documents

4 ITU maritime radiocommunication matters

.1 Consideration of radiocommunication ITU-R Study Group matters

.2 Consideration of ITU World Radiocommunication Conference matters

5 Consideration of developments in Inmarsat and Cospas-Sarsat

6 Search and Rescue (SAR)

.1 Development of guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters

.2 Further development of the Global SAR Plan for the provision of maritime SAR services, including procedures for routeing distress information in the GMDSS

7 Developments in maritime radiocommunication systems and technology

8 Development of amendments to the IAMSAR Manual

9 Development of measures to avoid false distress alerts

10 Development of measures to protect the safety of persons rescued at sea

11 Development of an e-navigation strategy implementation plan

12 Consideration of LRIT related matters

13 Biennial agenda and provisional agenda for COMSAR 18

* [* New unplanned output with a target completion year of 2017, subject to approval by MSC 90.]

14 Election of Chairman and Vice-Chairman for 2014

15 Any other business

16 Report to the Maritime Safety Committee

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ANNEX 23

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

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE								
Planned output number in the HLAP for 2012-2013	**Description**	**Target completion year**	**Parent organ(s)**	**Coordinating organ(s)**	**Associated organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
1.1.2.10	Cooperation with ICAO: annual meeting of the Joint ICAO/IMO Working Group on the Harmonization of Aeronautical and Maritime Search and Rescue (monitoring of SAR developments, continuous review of the IAMSAR Manual and developing recommendations)	Continuous	MSC	COMSAR	DE	Ongoing	Ongoing	COMSAR 16/17, section 6
1.1.2.12	Cooperation with ITU: consideration of matters related to the Radiocommunication ITU-R Study Group and ITU World Radiocommunication Conference	Continuous	MSC	COMSAR	NAV	Ongoing	Ongoing	COMSAR 16/17, section 4
1.1.2.16	Liaison statements to/from IEC: radiocommunications and safety of navigation	Continuous	MSC	COMSAR	NAV	Ongoing	Ongoing	COMSAR 16/17, sections 4 and 7
1.1.2.19	Liaison statements to/from ITU: radiocommunications	Continuous	MSC	COMSAR	NAV	Ongoing	Ongoing	COMSAR 16/17, section 4

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE								
Planned output number in the HLAP for 2012-2013	**Description**	**Target completion year**	**Parent organ(s)**	**Coordinating organ(s)**	**Associated organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
1.1.2.20	Liaison statements to/from UNHCR: persons rescued at sea	Continuous	MSC/FAL	COMSAR	NAV	Ongoing	Ongoing	COMSAR 16/17, section 10
1.3.5.2	Development of amendments to the IAMSAR Manual	Continuous	MSC	COMSAR		Ongoing	Ongoing	MSC 71/23, paragraph 20.2; COMSAR 16/17, section 8
2.0.3.1	Technical guidance for the establishment of regional MRCCs and MRSCs in Africa, supported by the ISAR Fund	Continuous	MSC	SEC	COMSAR	Ongoing	Ongoing	COMSAR 16/17, section 6
2.0.3.2	Further development of the Global SAR Plan for the provision of maritime SAR services, including procedures for routeing distress information in the GMDSS	Continuous	MSC	COMSAR		Ongoing	Ongoing	COMSAR 16/17, section 6
2.0.3.4	Reports on the Cospas-Sarsat System monitored and the list of IMO documents and publications which should be held by MRCCs updated	Continuous	MSC	SEC	COMSAR	Ongoing	Ongoing	COMSAR 16/17, section 5
2.0.3.5	Development of guidelines on harmonized aeronautical and maritime search and rescue procedures, including SAR training matters	2012	MSC	COMSAR		In progress		COMSAR 16/17, section 6

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE								
Planned output number in the HLAP for 2012-2013	**Description**	**Target completion year**	**Parent organ(s)**	**Coordinating organ(s)**	**Associated organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
5.1.2.2	Development of measures to protect the safety of persons rescued at sea	2012	MSC/FAL	COMSAR	FSI	In progress		MSC 84/24, paragraph 22.36; COMSAR 16/17, section 10
5.2.1.25	Development of guidelines for wing-in-ground craft	2013	MSC	DE	FP/ COMSAR/ NAV/SLF/ STW	Postponed	Postponed	MSC 88/26, paragraph 23.30; DE 56/25, section 18
5.2.4.2	Revision of the Recommendation for the protection of the AIS VHF Data Link (resolution MSC.140(76))	2013	MSC	COMSAR	[NAV]	Completed		MSC 89/25, paragraph 22.16; COMSAR 16/17, section 12
5.2.4.4	Non-mandatory instruments: implementation of LRIT system	Continuous	MSC	COMSAR		Ongoing	Ongoing	MSC 89/25, section 6 and paragraph 22.15; COMSAR 16/17, section 13
5.2.4.6	Non-mandatory instruments: consideration of LRIT matters	Continuous	MSC	COMSAR		Ongoing	Ongoing	MSC 89/25, section 6 and paragraph 22.15; COMSAR 16/17, section 13
5.2.5.1	Non-mandatory instruments: consideration of operational and technical coordination provisions of maritime safety information (MSI) services, including development and review of related documents	Continuous	MSC	COMSAR		Ongoing	Ongoing	COMSAR 16/17, section 3

SUB-COMMITTEE ON RADIOCOMMUNICATIONS AND SEARCH AND RESCUE								
Planned output number in the HLAP for 2012-2013	**Description**	**Target completion year**	**Parent organ(s)**	**Coordinating organ(s)**	**Associated organ(s)**	**Status of output for Year 1**	**Status of output for Year 2**	**References**
5.2.5.2	Development of measures to avoid false distress alerts	2013	MSC	COMSAR		In progress		MSC 87/24, paragraph 22.35; COMSAR 16/17, section 9
5.2.5.3	Further development of the GMDSS master plan on shore-based facilities	Continuous	MSC	COMSAR		Ongoing	Ongoing	COMSAR 16/17, section 3
5.2.5.4	Consideration of developments in Inmarsat and Copsas-Sarsat	Continuous	MSC	COMSAR		Ongoing	Ongoing	COMSAR 16/17, section 5
5.2.5.5	Developments in maritime radiocommunication systems and technology	2012	MSC	COMSAR		In progress		MSC 74/24, paragraph 21.25.1; COMSAR 16/17, section 7
5.2.5.6	Scoping exercise to establish the need for a review of the elements and procedures of the GMDSS	2012	MSC	COMSAR		Completed		MSC 86/26, paragraph 23.20; COMSAR 16/17, section 3
5.2.6.1	Non-mandatory instruments: development of an e-navigation strategy implementation plan	2012	MSC	NAV	COMSAR/ STW	In progress		MSC 85/26, paragraph 23.22; COMSAR 16/17, section 11; NAV 57/15, paragraph 6.41