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RADIOCOMMUNICATIONS AND
SEARCH AND RESCUE
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REPORT TO THE MARITIME SAFETY COMMITTEE

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1 GENERAL

1.1 The Sub-Committee on Radiocommunications and Search and Rescue held its tenth session from 6 to 10 March 2006 at the Headquarters of the Organization under the chairmanship of Mr. U. Hallberg (Sweden). The Vice-Chairman, Mr. A. Olopoenia (Nigeria), was also present.

1.2 The session was attended by delegations from the following countries:

ALGERIA	KENYA
ANGOLA	LATVIA
ARGENTINA	LIBERIA
AUSTRALIA	LITHUANIA
BAHAMAS	MALAYSIA
BELGIUM	MALTA
BOLIVIA	MARSHALL ISLANDS
BRAZIL	MEXICO
BULGARIA	MOROCCO
CANADA	NETHERLANDS
CHILE	NEW ZEALAND
CHINA	NIGERIA
COLOMBIA	NORWAY
CROATIA	PANAMA
CUBA	PERU
CYPRUS	PHILIPPINES
DEMOCRATIC REPUBLIC OF THE CONGO	POLAND
DENMARK	PORTUGAL
DOMINICAN REPUBLIC	REPUBLIC OF KOREA
ECUADOR	ROMANIA
EGYPT	RUSSIAN FEDERATION
ESTONIA	SAUDI ARABIA
FINLAND	SINGAPORE
FRANCE	SOUTH AFRICA
GERMANY	SPAIN
GREECE	SWEDEN
ICELAND	TURKEY
INDONESIA	TUVALU
IRAN, (ISLAMIC REPUBLIC OF)	UKRAINE
IRELAND	UNITED KINGDOM
ITALY	UNITED STATES
JAPAN	URUGUAY
	VENEZUELA

and by the following Associate Member of IMO:

HONG KONG, CHINA

1.3 The following United Nations specialized agencies were also represented:

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

1.4 The session was also attended by observers from intergovernmental and non-governmental organizations:

INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
EUROPEAN COMMISSION (EC)
MARITIME ORGANISATION FOR WEST AND CENTRAL AFRICA (MOWCA)
INTERNATIONAL COSPAS-SARSAT PROGRAMME AGREEMENT
(COSPAS-SARSAT)
INTERNATIONAL MOBILE SATELLITE ORGANIZATION (IMSO)
EUROPEAN CONFERENCE OF POSTAL AND TELECOMMUNICATIONS
ADMINISTRATIONS (CEPT)
INTERNATIONAL CHAMBER OF SHIPPING (ICS)
INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
INTERNATIONAL CONFEDERATION OF FREE TRADE UNIONS (ICFTU)
INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION
AND LIGHTHOUSE AUTHORITIES (IALA)
INTERNATIONAL RADIO-MARITIME COMMITTEE (CIRM)
INTERNATIONAL ASSOCIATION OF CLASSIFICATION SOCIETIES (IACS)
OIL COMPANIES INTERNATIONAL MARINE FORUM (OCIMF)
INTERNATIONAL ASSOCIATION OF INSTITUTES OF NAVIGATION (IAIN)
INTERNATIONAL FEDERATION OF SHIPMASTERS' ASSOCIATIONS (IFSMA)
INTERNATIONAL ASSOCIATION OF INDEPENDENT TANKER OWNERS
(INTERTANKO)
INTERNATIONAL LIFEBOAT FEDERATION (ILF)
INTERNATIONAL COUNCIL OF CRUISE LINES (ICCL)
INTERNATIONAL ASSOCIATION OF DRY CARGO SHIPOWNERS
(INTERCARGO)
INTERNATIONAL MARITIME LECTURERS ASSOCIATION (IMLA)
INTERNATIONAL SAILING FEDERATION (ISAF)
WORLD NUCLEAR TRANSPORT INSTITUTE (WNTI)

Secretary-General's opening address

1.5 In welcoming the participants, the Secretary-General expressed his deep sadness at the recent tragic loss of more than 900 lives in the accident involving the ro-ro ferry **al-Salam Boccaccio 98** in the Red Sea. He stated that it was most regrettable that this accident occurred during what was supposed to be a routine voyage between two ports of neighbouring countries.

The Secretary-General expressed confidence that the casualty investigation – which was promptly launched jointly by the substantially interested Governments of Egypt and Panama and was still going on with technical expertise and advice provided by IMO through the technical co-operation programme – would be able to identify the causes of the disaster and, should it bring to light any areas where remedial action might be required, the IMO system in place would be mobilized for action to be undertaken rapidly and expeditiously.

In an expression of sympathy for those who lost their lives and their grieving families, friends and colleagues, at the Secretary-General's request the Sub-Committee held one minute's silence in memory of the victims of the tragedy.

The Secretary-General drew attention to the Council's decision of last November that the theme for this year's World Maritime Day should be "**Technical Co-operation: IMO's response to the 2005 World Summit**", with special emphasis on the maritime needs of Africa. He pointed

out that this important theme has given the Organization the opportunity to contribute to the fulfilment of the Millennium Development Goals, set by the 2000 Millennium Summit and re-affirmed at the 2005 World Summit, as the world community's response to identified new needs and challenges presented by the fact that hundreds of millions of people are left defenceless against hunger, disease and environmental degradation, even though the means to protect them against these are available. He emphasized that maritime activity had a key role to play in meeting these goals and already provides the mechanism to promote economic development, being an important source of invisible income to many developing countries. He hoped that the Organization could count on the support and contribution of all the components of shipping to achieve the noble goals the world community had set for the current Millennium.

The Secretary-General stated his intention in May, to go to Mombasa to inaugurate a brand-new regional Maritime Rescue Co-ordination Centre established by IMO in co-operation with the Kenyan Government and, from there, to proceed to Dar-es-Salaam where it is planned to establish one of the two sub-centres (the other one will be in the Seychelles) to support the Mombasa regional centre. The establishment of the three centres, in addition to financial support provided by the SAR Fund, would draw funds from the Tsunami Maritime Relief Fund, to enhance the provision of search and rescue services in the Indian Ocean. This would be an important step in the efforts to implement the recommendations of the 2000 Florence Conference concerning the establishment of regional MRCCs along the African coast.

With regard to **passenger ship safety** the Secretary-General was of the view that tasks, such as the recovery of persons from survival craft; contingency planning guidelines; training of SAR personnel; and the development of criteria for "time to rescue", were of the highest importance. Ensuring that passenger ship safety standards were high enough to adequately serve not only today's but, also, future challenges in this vital sector of the shipping industry, was crucial and the Sub-Committee's contribution to the Committee's proactive work in this area was of the utmost importance.

The Secretary-General referred to mandatory requirements for the introduction of **long-range identification and tracking of ships** equipment in the SOLAS Convention which had been under development since February 2002. The MSC had made arrangements to adopt, in May of this year, appropriate SOLAS amendments. Accordingly, the Sub-Committee was expected to complete at the current session and with the highest priority, all the associated technical work necessary for it to proceed as envisaged.

The Secretary-General also referred to **mobile-satellite communication services** which were of the utmost importance in the GMDSS for organizing and conducting effective SAR operations. Having recognized this, and with the objective of **securing the long-term integrity of the GMDSS**, the MSC had authorized the Sub-Committee to keep **resolution A.888(21)** on Criteria for the provision of mobile-satellite communication systems in the GMDSS updated, particularly with respect to potential future providers of GMDSS services and the promulgation of maritime safety information to ships.

The Secretary-General, referring to the implementation of the **Voluntary IMO Member State Audit Scheme** which in accordance with resolution A.974(24), requested Member Governments to offer themselves for audit; nominate auditors to enable him to select audit teams from among them; and nominate qualified auditors to participate in the regional training courses planned by the Organization for the effective implementation of the Scheme. He informed the Sub-Committee that the Governments of Chile, Cyprus, Denmark, Egypt, Liberia, the Netherlands, Spain and the United Kingdom had notified their preparedness to be audited, and looked forward to receiving many more offers of the same type in the near future.

In his concluding remarks the Secretary-General, referring to the planned **refurbishment of the Headquarters Building**, which, for that purpose, would be closed for approximately 12 months between the summers of 2006 and 2007, requested the co-operation and understanding of all concerned so as to pass on to the next generation of IMO delegates and staff a building worthy of the technological, IT and communication facilities of the 21st century, one which would also incorporate state-of-the-art safety, security and health requirements and of which all would be proud.

1.6 In response to the opening address of the Secretary-General, H.E. the Ambassador of Egypt expressed his gratitude to the Secretary-General and to the Sub-Committee for their expressions of sympathy over the tragic large loss of life. He also sincerely thanked the Secretary-General for his prompt assistance to the Government of Egypt in arranging for experts to assist in the investigation. In addition, he was grateful to the United Kingdom for its valuable assistance in the recovery of the ship's voyage data recorder from a depth of more than 900 metres, information from which was now being analysed. He advised that the results of the investigation would be made available to the Organization in due course, so that any lessons learned could be shared with all the Member States.

1.7 Responding similarly, H.E. the Ambassador of Panama also expressed her sadness at the considerable loss of life in the tragedy and offered her condolences to the Government of Egypt. She advised that, Panama, as the flag State of the ill-fated ferry, had been collaborating closely with the Egyptian Authorities since the accident and would continue to co-operate fully with the Government of Egypt in the investigation which was now under way. A statement by the Delegation of Panama is at annex 36.

Chairman's remarks

1.8 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.

Adoption of the agenda and related matters

1.9 The Sub-Committee adopted the agenda (COMSAR 10/1), and agreed, in general, that the work of the Sub-Committee should be guided by the annotations to the provisional agenda and timetable (COMSAR 10/1/1), as amended. The agenda of the session with the list of documents submitted under each agenda item for consideration, is set out in document COMSAR 10/INF.12.

2 DECISIONS OF OTHER IMO BODIES

General

2.1 The Sub-Committee noted the decisions and comments pertaining to its work made by MSC 80, as reported in document COMSAR 10/2 in the form of references to the appropriate parts of the Committee's report (MSC 80/24 and Addenda), and took them into account in its deliberations when dealing with the relevant agenda items.

2.2 The Sub-Committee also noted that relevant decisions of DE 49, FP 50 and STW 37 sessions, which took place less than two months ago, had been reported by the Secretariat under the appropriate agenda items, as well.

Improving the efficiency of meetings

2.3 The Sub-Committee noted that MSC 80 had agreed that working groups could start work on the Monday morning of the session on the basis of the preliminary draft terms of reference presented by the Chairman of the committee or sub-committee pending formal discussion of those terms of reference under the relevant agenda items. However, these measures should be decided by the Chairman of the committee or sub-committee concerned, on a case-by-case basis.

3 GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

MATTERS RELATING TO THE GMDSS MASTER PLAN

3.1 The Sub-Committee noted that, in accordance with its instructions and using information provided by Governments after July 2004, the Secretariat had issued Corr.11 in March 2005 and Corr.12 in October 2005 to amend GMDSS/Circ.8 (Master Plan). Countries providing information for those circulars were: Australia, Cyprus, Egypt, Greece, Italy, Japan, Marshall Islands, Mauritius, New Zealand, Switzerland, the United States and Vanuatu. Hong Kong, China as an Associate Member of IMO, also provided information for the circulars.

3.2 The Secretariat informed the Sub-Committee that since issuing GMDSS/Circ.8/Corr.12, it had received updated information from Indonesia, Iran, Norway, Romania, Spain, Thailand, Turkey and Viet Nam, mostly regarding the installation of Sea Area A1/A2 and NAVTEX facilities. The Secretariat was planning to issue GMDSS/Circ.8/Corr.13 in March/April 2006.

3.3 Noting the above information, the Sub-Committee requested Member States to check their national data in GMDSS/Circ.8 and Corrigenda for accuracy, provide the Secretariat with any necessary amendments, as soon as possible, and to respond to MSC/Circ.684, if they have not already done so.

3.4 Having noted the information provided in COMSAR 10/INF.5 (IMSO), the Sub-Committee instructed the Secretariat to obtain updated information on the matter and issue COMSAR/Circ.38 on List of Land Earth Station (LAS) operation co-ordinators in the Inmarsat system, superseding COMSAR/Circ.11 and Corrigenda. The Committee was invited to endorse the action taken.

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

3.5 The Sub-Committee recalled that COMSAR 9, in responding to the Indian Ocean Tsunami disaster, had considered matters concerning the promulgation of tsunami warnings and:

- .1 had developed and issued COMSAR/Circ.36 on Broadcast of warnings for tsunami and other natural disasters; and
- .2 had established the correspondence group on Tsunami, under the co-ordination of Japan, and had instructed it to consider the issue of:
 - .1 the promulgation of tsunami and other natural disaster warnings for vessels which are not subject to the provisions of the 1974 SOLAS Convention (i.e. passenger and cargo ships engaged on domestic voyages, cargo ships engaged on international voyages whose gross tonnage is less than 300,

fishing vessels, ships of primitive build and pleasure yachts not engaged in trade); and

- .2 the development of guidelines for disaster emergency preparedness and response for ships at sea and in coastal areas, as proposed by the delegation of Japan.

3.6 The Sub-Committee noted that MSC 80 had:

- .1 endorsed the COMSAR 9 action in issuing COMSAR/Circ.36 on Broadcast of warnings for tsunami and other natural disasters; and
- .2 adopted resolution MSC.199(80) on Adoption of amendments to Provision of radio services for the Global Maritime Distress and Safety System (GMDSS) (resolution A.801(19)).

3.7 The Sub-Committee noted with appreciation information provided by the Chairman, International NAVTEX Co-ordinating Panel, on the outcome of a meeting dealing with defining NAVTEX service areas in the Western and Central Mediterranean.

In particular, it was noted that the NAVAREA III NAVTEX National Co-ordinators meeting was held at the IHB, Monaco, from 18 to 19 January 2006. The meeting was organized by the NAVAREA III Co-ordinator (Spain) and hosted by the IHB. Representatives from nine States (Algeria, Croatia, Cyprus, Greece, Italy, Malta, Spain, Tunisia and Turkey), the Chairman of the International NAVTEX Co-ordinating Panel and a representative of the IMO Secretariat also attended the meeting.

The main objective of the meeting was to clearly identify the limits of service areas with a view to optimizing the number and locations of 518 kHz NAVTEX stations to be installed or re-allocated in the region. The meeting successfully discussed the issue and prepared a map indicating the boundaries of service areas and an action list for further implementation of the decisions made.

3.8 In considering document COMSAR 10/3/1 (IHO), the Sub-Committee noted the outcome of the seventh session of the IHO Commission on the Promulgation of Radio Navigational Warnings (CPRNW), which was held in the offices of the IHO, Monaco, from 13 to 15 September 2005.

3.9 Having considered document COMSAR 10/3/2 (Chairman of the International NAVTEX Co-ordinating Panel), the Sub-Committee noted with appreciation the report of the Chairman, International NAVTEX Co-ordinating Panel, summarizing the current issues being addressed by the Panel and its activities since COMSAR 9.

3.10 The delegation of Turkey made a statement concerning certain activity of the Panel, as set out in annex 37.

3.11 The delegation of the Republic of Cyprus made a statement concerning the same issue, as set out in annex 38.

3.12 The Sub-Committee noted that MSC 80 had considered document MSC 80/13/2 (Russian Federation), containing a proposal on the establishment of two new NAVAREAs (XVII and XVIII) in the Arctic Seas and, taking into account comments made on the issue, had

instructed COMSAR 10 to consider this document under the appropriate agenda item with a view to designating new NAVAREAs in the Arctic as a whole and advise MSC 81 accordingly.

3.13 The Sub-Committee also noted that, at MSC 80, the delegation of Norway had appreciated the important initiative taken by the Russian Federation on the establishment of two new NAVAREAs in the Arctic Seas, off the northern coast of Russia. With large parts of Norway and Svalbard situated in the Arctic, Norway shared the interest of the Russian Federation to improve the safety of navigation in this vulnerable area.

However, for various reasons the Russian proposal, as presented in document MSC 80/13/2, was problematic to Norway. Firstly, Norway was of the opinion that such a proposal should have been developed as a result of a co-ordinated effort between affected States, including issues like the geographical extent of the new NAVAREAs. Moreover, Norway considered it unfortunate that the proposal by the Russian Federation only dealt with a limited part of the Arctic Seas and left open questions relating to large remaining areas of the Arctic. It was of particular importance to Norway to have in place well-functioning NAVAREAs in the North-East Atlantic. For these reasons, Norway was not be able to support the Russian proposal as it stood. Nevertheless, Norway could agree that the COMSAR Sub-Committee was tasked to consider this issue in a broader sense by considering the designation of new NAVAREAs in the Arctic as a whole.

3.14 The Sub-Committee considered the report of the correspondence group on tsunami, which noted that the Indian Ocean Tsunami Warning and Mitigation System (IOTWS) formally came into existence at the 23rd Assembly of the Intergovernmental Oceanographic Commission of the UN Educational, Scientific and Cultural Organization (IOC/UNESCO) in Paris with the establishment of an Intergovernmental Co-ordination Group (ICG) to govern it. The architecture of the Indian Ocean Tsunami Warning and Mitigation System (IOTWS) was based on the establishment of national tsunami centres capable of issuing warnings in each of the participating countries through radio and TV broadcasts and, possibly, mobile phone services. It was expected that Tsunami Warnings in the Indian Ocean would be available once an information centre of IOTWS was established. The date of the establishment was scheduled for July 2006. Therefore, IMO needed to consider how to promulgate such Tsunami Warnings to ships under the SOLAS Convention and non-SOLAS ships including fishing vessels and pleasure craft.

3.15 The Secretariat provided a summary update on the latest status of the Indian Ocean Tsunami Early Warning System as given by the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

After the December 2004 tsunami, UNESCO through its Intergovernmental Oceanographic Commission (IOC) took the lead in co-ordinating activities and immediate action to establish a Tsunami Warning System (TWS) in the Indian Ocean. Since April 2005, this had included an interim tsunami advisory information system that is in place under IOC's International Tsunami Information Centre (ITIC), in co-operation with the Pacific Tsunami Warning Center (PTWC) in Hawaii and the Japan Meteorological Agency (JMA).

The IOC General Assembly in June 2005, adopted resolutions to create three additional regional Intergovernmental Co-ordination Groups (ICG) as subsidiary bodies of IOC. Together with the existing International Co-ordination Group for Tsunami Warning in the Pacific and other relevant UN bodies, they were intended to form a global Working group on tsunami and other ocean-hazard-related early warning systems.

Between May and September 2005, national assessments of 16 countries in the vicinity of the Indian Ocean were conducted to identify capacity building needs and support requirements for the establishment of an Indian Ocean Tsunami Warning System (IOTWS). Amongst others this assessment indicated that most countries have made progress in developing policies, assessing technological needs and establishing co-ordination mechanisms at a national level for tsunami warning and mitigation and that the core technical elements of a regional tsunami early warning system were in place. While significant progress in awareness raising and capacity building had been achieved, much work remained to build the long-term capacities of countries for effective early warning and risk management.

By July 2006 it was intended that an initial system will be operating utilizing 28 additional tide gauges and 25 seismic stations will be in place, together with the first three out of 60 planned open ocean buoys and updated communication facilities for data and warning exchange. Nevertheless, implementing the complete system including all the intended instrumentation updates, the installation of all national warning centres as well as ensuring the effective communication of all warnings to the possibly affected population along the coasts would not be in place before the turn of the decade.

3.16 Having briefly considered documents MSC 80/13/2 and COMSAR 10/3 by the Russian Federation, suggesting to establish two new NAVAREAs in the Arctic Seas and document COMSAR 10/3/3 (Japan), providing the report of the correspondence group on Tsunami, the Sub-Committee referred them to a GMDSS Working Group, to be established, for detailed consideration.

Report of the Working Group

3.17 In considering the relevant parts of the GMDSS Working Group report (COMSAR 10/WP.4, paragraphs 5.1 to 5.13), the Sub-Committee took actions as summarized hereunder.

Establishment of new NAVAREAs in Arctic Waters

3.18 The Sub-Committee noted the reservations expressed by Norway at MSC 80, which were re-iterated in the Working Group. These reservations were supported by Iceland.

3.19 The Sub-Committee was of the opinion that all Arctic Waters should be included and not simply the areas proposed by the Russian Federation. The map given at annex 1 provides an illustrated solution for consideration, but no attempt was made to agree to this diagram.

3.20 The concept of five new NAVAREAs/METAREAs was supported by the Sub-Committee. However, the limits of these new areas were not agreed, and need to be the subject of detailed international discussions. These discussions also need to address the following additional issues:

- .1 Should there be a northern limit to any new areas?
- .2 Can a seasonal service only be provided?
- .3 Who will act as NAVAREA co-ordinator and METAREA issuing service (do not have to be the same country)?

- .4 Would some of the proposed new NAVAREAs be better established as sub-areas of existing NAVAREAs?
- .5 How will warnings be transmitted, and can they be monitored as required? Do systems other than Inmarsat (such as HF NBDP, NAVTEX or other satellite service providers) need to be considered?
- .6 Who will undertake provision of SAR information?
- .7 How will the Inmarsat system definition manual and existing SafetyNet terminals be updated to allow receipt of the new NAVAREAs? Ideally this update needs to be co-ordinated with plans to include new areas in other parts of the world.
- .8 Will assistance be required from IHO/CPRNW to support new NAVAREA co-ordinators or from JCOMM/ETMSS for METAREA issuing services?
- .9 How will WNWWS guidance and other relevant documents be updated?

3.21 The Sub-Committee further noted that, as directed by the Joint IMO/IHO/WMO Manual on Maritime Safety Information and resolution A.706(17), as amended, all recommendations for change to the WNWWS were reviewed by IHO CPRNW, which is the representative body for the IHO on matters concerning the WNWWS; its membership includes IMO, WMO and IMSO. Both documents state that the agreement of the IHO, IMSO, WMO and the active participation of other bodies should be sought, according to the nature of the proposed amendments.

3.22 The Sub-Committee agreed with the recommendation of the Working Group that discussions to address these issues should be taken forward by a joint IMO/IHO/WMO correspondence group on MSI services, which should include representatives of all affected countries and other interested entities (including IMSO, Inmarsat and any other approved safety-service providers) and should develop a work-plan, including milestones, connecting to planned meetings of other organizations, where possible.

3.23 The Sub-Committee approved the establishment including the terms of reference of the joint IMO/IHO/WMO correspondence group* on MSI services, given at annex 2.

Tsunami Warnings Systems

3.24 The Sub-Committee noted that IOC/UNESCO was the co-ordinator on developing end-to-end regional tsunami warning systems for parts of the world that may be affected by this phenomenon. These end-to-end systems include all activities from seismic monitoring, wave detection through seabed sensors, risk and possible impact assessment, advisory messages to relevant national authorities by those national and regional centres that can detect possible tsunami activity, and the issuing of warnings within areas of national responsibility. Discussions

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at IOC/UNESCO have made it clear that there are issues of sovereignty associated with issuing possible disaster warnings within areas of national responsibility and hence this may affect decisions on which communication systems are used through, for example, public radio, TV broadcast and cellphone group call systems.

3.25 The Sub-Committee also noted that at COMSAR 9, IMO had offered the use of its maritime GMDSS communication facilities, particularly the International SafetyNET system, to distribute warnings from regional centres to both national authorities and vessels at sea (COMSAR/Circ.36). Tsunami warning centres and others wishing to use the International SafetyNET system were invited to register with the IMO International SafetyNET Co-ordinating Panel to become authorized data providers. To date none have registered, but some of the regional organizations are still at a very early stage of development.

3.26 The Sub-Committee recognized that in respect of the threat to shipping:

- .1 a tsunami poses a significant risk only to those ships in shallow waters and in port areas;
- .2 ships in port are not required to maintain watch on GMDSS communications equipment, consequently a separate system for promulgating warning messages needs to be established within each port; and
- .3 tsunami warnings need to be sent to those ships most at risk in a rapid manner.

3.27 Hence, the Sub-Committee was of the opinion that the most important communication links were those, namely:

- .1 between regional and national centres; new links being established appear to be predominantly by e-mail or through the WMO Global Telecommunications System, however the use of the International SafetyNET system remains an option for IOC/UNESCO and relevant authorities if required;
- .2 within nations to coastal regions and ports; it was agreed that while this is a national issue, IMO, IHO and WMO can guide and support national authorities through national or regional capacity building programmes; and
- .3 to both SOLAS ships and non-SOLAS ships/fishing vessels in shallow coastal waters; NAVTEX can be used for these warnings, but there may be no stations currently covering the affected areas and non-SOLAS ships/fishing vessels may not carry suitable receiving equipment, therefore other means such as local news broadcasts and warnings on maritime VHF channels should be considered.

3.28 The Sub-Committee also recognized that further discussion/correspondence on this subject was not necessary within IMO, but that options to use the IMO GMDSS communications facilities through either the relevant WWNWS NAVAREA Co-ordinators or the METAREA Issuing Services, should remain available to national or regional centres if required by IOC/UNESCO. This offer should be made again by letter to IOC/UNESCO following this session of the Sub-Committee. Further, IMO, WMO and IHO should continue to participate in ongoing discussions, particularly at the IOC/UNESCO Executive Council in June 2006, to ensure that maritime interests are not overlooked. The Committee was invited to endorse the action taken.

3.29 The Sub-Committee noted the opinion of the Working Group that IMO might wish to consider the provision of technical assistance to those nations under threat of tsunami and involved in the preparation and operation of Tsunami warning systems for vessels and ports.

Demonstration of transmission of safety information by DRM

3.30 The United Kingdom provided a demonstration of the transmission of a NAVTEX message in the data channel. The demonstration had been organized by the BBC using a transmitter at Kvitsoy Norway on a frequency of 9470 kHz.

Digital Radio Mondiale (DRM) was a new sound radio broadcasting standard developed by the ITU for the MF and HF bands. It used the standard 9/10 kHz broadcasting channels and produced a sound quality that was almost as good as VHF. There were currently some 20 broadcasters around the world transmitting programmes using DRM. Receivers were currently expensive but low cost domestic receivers were expected to be soon available on the market.

The DRM standard also included a low speed data channel which was intended for providing information about the radio station, the programme content, upcoming programmes etc. The information was displayed on the receivers as a scrolling "ticker tape".

When DRM receivers were widely available, this might be a useful mechanism for broadcasting urgent information such as tsunami warnings.

REPORT OF THE 15TH SESSION OF THE BALTIC/BARENTS SEA REGIONAL CO-OPERATION ON MATTERS RELATING TO THE COMSAR SUB-COMMITTEE (BBRC/COMSR-15)

3.31 The Sub-Committee noted information provided by Estonia, (COMSAR 10/INF.4) containing the report of the 15th session of the Baltic/Barents Sea Regional Co-operation on matters relating to the COMSAR Sub-Committee (BBRC/COMSR-15).

4 ITU MARITIME RADIOCOMMUNICATION MATTERS

RADIOCOMMUNICATION ITU-R STUDY GROUP 8 MATTERS

General

4.1 The Sub-Committee noted that MSC 80 had endorsed the COMSAR 9 action in instructing the Secretariat to convey:

- .1 the liaison statement on Developments in maritime radiocommunication systems and technology to the ITU-R WP.8B;
- .2 the liaison statement concerning the technical characteristics of NAVTEX services and reliability predictions for MF radiocommunications in sea area A2 to the ITU-R WP.8B; and
- .3 the liaison statement addressing the issue of DSC complexity to the ITU-R WP.8B and the IEC TC80,

for consideration.

MSC 80 had been informed by the Secretariat that the liaison statements had already been conveyed to the ITU and IEC for consideration by the appropriate bodies and that the outcome would be submitted to COMSAR 10.

4.2 The Sub-Committee briefly considered documents COMSAR 10/4/1, COMSAR 10/4/2 and COMSAR 10/4/3 by the Secretariat containing three liaison statements from WP.8B on:

- .1 the issue addressing DSC complexity in line with a preliminary draft revision of Recommendation ITU-R M.493-11;
- .2 a draft revision of Recommendation ITU-R M.585-3 on Assignment and use of maritime mobile service identities; and
- .3 the issue concerning satellite detection of AIS messages,

and referred them to a GMDSS Working Group, to be established, for detailed consideration.

ITU WORLD RADIOCOMMUNICATION CONFERENCE MATTERS

General

4.3 The Sub-Committee noted that, in order to continue the development of the draft IMO position on maritime related matters to the World Radiocommunication Conference to be held in 2007 (WRC-07), COMSAR 9 had proposed and MSC 80 had approved the re-establishment of a Joint IMO/ITU experts group with the terms of reference given in annex 6 to COMSAR 9/19, to meet at IMO Headquarters, London, United Kingdom, in June 2005, to commence the work and then to continue its activity by correspondence via e-mail. Subsequently, the meeting had been endorsed by the ninety-fourth session of the Council.

4.4 The Sub-Committee also noted that the second meeting of the Joint IMO/ITU Experts Group was held from 13 to 15 June 2005, at IMO Headquarters, under the chairmanship of Mr. K. Fisher (United Kingdom) and its report was issued as document COMSAR 10/4.

4.5 The Sub-Committee briefly considered documents COMSAR 10/4 (Secretariat), COMSAR 10/4/4, COMSAR 10/4/5, COMSAR 10/4/6 and COMSAR 10/INF.10 by the United Kingdom and document COMSAR 10/4/7 (United States) and decided to refer them to the GMDSS Working Group for detailed consideration.

4.6 The observer from ICS expressed concern on the sudden emergence of a request for IMO to endorse a third frequency to use for AIS for satellite-based long range identification and tracking. This appeared to be contrary to previous discussions at IMO. The MSC had previously separated AIS from the LRIT debate and indeed the draft amendments to SOLAS chapter XII-2 were structured around the use of SOLAS chapter IV equipment (satellite communications equipment) and made no mention of AIS. AIS was of course a carriage requirement in SOLAS chapter V.

ICS took the view that discussion, under this agenda item, of AIS and satellite-based surveillance called into question all of the work undertaken by IMO to develop a satellite communication based LRIT system with international oversight. The case had not been made for two independent systems and no decision in this respect had been made by the MSC.

Document COMSAR 10/4/7 (United States) correctly reported that current AIS equipment was unlikely to be suitable for conversion to utilize a third transmission frequency and should this system be adopted then a new carriage requirement was inevitable.

Finally ICS reminded the Sub-Committee that MSC 78 had decided not to pursue an impact assessment on the introduction of LRIT. However, if the architecture departed from the understanding at the time or if the purpose of LRIT was to be expanded then the impact assessment should be revisited.

ICS urged the Sub-Committee not to pursue a second parallel LRIT architecture to that being discussed in the LRIT Working Group.

Establishment of a working group

4.7 In order to consider the documents submitted under this agenda item in detail, the Sub-Committee established the GMDSS Working Group and instructed it to consider documents COMSAR 10/4, COMSAR 10/4/1, COMSAR 10/4/2, COMSAR 10/4/3, COMSAR 10/4/4, COMSAR 10/4/5, COMSAR 10/4/6, COMSAR 10/4/7 and COMSAR 10/INF.10 and, taking into account the decisions made by Plenary, to:

- .1 further develop, as a matter of priority, and finalize the draft position on maritime issues to WRC-07 and, if recommended that the matter should be further considered at a IMO/ITU experts group meeting, appropriate justification and ToRs should be prepared;
- .2 prepare liaison statements to WP.8B on matters of the Organization's interest and, in particular, concerning:
 - the simplification of DSC operational procedures in line with the preliminary draft revision of Recommendation ITU-R M.493-11;
 - a draft revision of Recommendation ITU-R M.585-3 on Assignment and use of maritime mobile service identities; and
 - if so deemed appropriate, satellite detection of AIS messages; and
- .3 provide appropriate comments and/or recommendations,

for consideration by Plenary.

Report of the Working Group

4.8 Having received and considered the report of the GMDSS Working Group (COMSAR 10/WP.4, paragraphs 3.2 to 3.10), the Sub-Committee approved it, in general, and took action as indicated hereunder.

Radiocommunication ITU-R Study Group 8 matters

4.9 The Sub-Committee approved the liaison statement to ITU-R WP.8B and IEC TC80, given at annex 3, concerning the complexity of DSC operational procedures and instructed the Secretariat to convey it in time for the WP.8B meeting commencing on 22 March 2006 for consideration and including IEC. The Committee was invited to endorse the action taken.

4.10 The Sub-Committee concurred with the recommendations of WP.8B and also approved the liaison statement concerning the assignment and use of MMSI in line with the draft revised Recommendation ITU-R M.585-3, given at annex 4, and instructed the Secretariat to convey it in time for the WP.8B meeting commencing on 22 March 2006 for consideration. The Committee was invited to endorse the action taken.

4.11 The Sub-Committee further approved the liaison statement to ITU-R WP.8B, given at annex 5, concerning the satellite detection of AIS messages and the spectrum resource implications for AIS channels, and instructed the Secretariat to forward it in time for the WP.8B meeting commencing on 22 March 2006. The Committee was invited to endorse the action taken.

4.12 The Sub-Committee further noted that the deadline for submission of the liaison statements to ITU was 1600 UTC 15 March 2006.

ITU World Radiocommunication Conference matters

4.13 The Sub-Committee reviewed the outcome of the meeting of a Joint IMO/ITU experts group (COMSAR 10/4 (Secretariat)) on preparation of an IMO position to WRC-07 and found that, with a few changes to reflect the documents considered under this item, a stable set of positions had been achieved.

4.14 The Sub-Committee noted, in particular, the complex spectrum issues involved in the treatment of the HF bands under WRC-07 agenda item 1.13 as described in document COMSAR 10/INF.10. The Sub-Committee further noted that, following on from its discussions at COMSAR 9, the impetus to replace analogue data and voice communications by modern digital data exchange systems would have implications on future HF spectrum requirements for the maritime mobile service, which should be addressed at WRC-07.

4.15 Hence, the Sub-Committee also approved the liaison statement to ITU-R WP.8B, given at annex 6, addressing HF spectrum requirements for the maritime mobile service and advising WP.8B of the need to take this factor into account during its consideration of WRC-07 agenda item 1.13. The Secretariat was instructed to convey it to the WP.8B meeting on 22 March 2006 for consideration. The Committee was invited to endorse the action taken.

4.16 In respect of WRC-07 agenda item 1.14, the Sub-Committee noted the continuing discussions on how best to maintain the pre-GMDSS VHF channel 16 radiotelephony distress and safety procedures currently contained in Appendix 13 to the Radio Regulations. The texts detailed in documents COMSAR 10/4/5 and COMSAR 10/4/6 were noted and it was agreed that the issues would again be addressed at the proposed further meeting of this group planned to take place in July 2006.

4.17 In recognition of the above and the further debate that had taken place in ITU-R and regional telecommunications organizations, the Sub-Committee was of the opinion that, although the draft IMO position itself, as amended, set out in annex 7, was stable, further consideration of the detailed changes needed to the Radio Regulations at WRC-07 to meet these objectives was still required.

4.18 The Committee was invited to approve the draft IMO position to WRC-07 and authorize the Secretariat to convey it to appropriate ITU bodies for consideration.

4.19 In addition, it was necessary to develop a strategy to ensure that issues of importance to the maritime community that required changes to the regulatory or operational procedures contained in the Radio Regulations would progress rapidly through the WRC process. The Sub-Committee agreed that this work was best carried forward by the Joint IMO/ITU Experts Group. Accordingly, the Sub-Committee agreed the revised Terms of Reference for a further meeting of the Joint IMO/ITU Experts Group, given at annex 8, and invited the Committee to approve the re-establishment of the Joint IMO/ITU Experts Group and its meeting from 5 to 7 July 2006 at IMO Headquarters.

4.20 The Terms of Reference and working methods for the Joint IMO/ITU Experts Group are based on a list of issues relevant to the WRC process that the Sub-Committee considered would need further detailed consideration, namely:

- .1 to assess the studies in ITU-R Working Party 8B concerning the introduction of new maritime technologies in the HF bands;
- .2 to consider the future requirements for HF spectrum and the regulatory changes necessary to make the analogue voice channels contained within Appendix 17 to the Radio Regulations available for use by digital data exchange systems with a view to making the most effective use of the spectrum resources governed by Appendix 17;
- .3 to assess the regulatory and operational effects of discontinuing the 121.5 MHz alerting function through the COSPAS-SARSAT satellite system and discontinuing the Inmarsat-E service;
- .4 to consider possible future requirements for VHF communications, including improved detection and protection of AIS transmissions; and
- .5 to consider changes to the Radio Regulations to ensure the security of ships and ports.

5 SATELLITE SERVICES (Inmarsat and COSPAS-SARSAT)

CLOSURE OF INMARSAT-E SERVICES

5.1 The Sub-Committee noted that MSC 80, having recalled that MSC 79 had agreed that Inmarsat-E services should be closed on 1 December 2006, had approved:

- .1 MSC/Circ.1171 on Closure of Inmarsat-E services by Inmarsat Ltd., prepared by COMSAR 10; and
- .2 the proposed draft consequential amendments to SOLAS chapter IV and had requested the Secretary-General to circulate the draft amendments in accordance with SOLAS article VIII, for consideration with a view to adoption at MSC 81. These were subsequently circulated by Circular letter No.2630 of 14 July 2005.

INMARSAT SERVICES

5.2 The Sub-Committee considered with appreciation document COMSAR 10/5/1 (IMSO) providing an analysis and assessment of the performance by Inmarsat Global Ltd. of the company's public service obligations for the provision of maritime services within the GMDSS, as overseen by IMSO.

5.3 The delegation of Japan expressed concern regarding the absence of information on plans for positioning a new I-4 satellite in the Pacific Region.

5.4 The observer from IMSO responded that so far there were no plans on the issue and said that when such plans would be available the Sub-Committee would be informed accordingly.

5.5 The Sub-Committee considered document COMSAR 10/5/4 (United States) commenting on the IMSO report and suggesting that information on the percentage of false alarms and whether false alarms were increasing or declining, if included in similar reports in future, would be useful for the Sub-Committee. Further information regarding the numbers of real distress incidents, if available, would be useful as well, and would help discussions on how often the provisions of resolution A.707(17) on Charges for distress and safety messages through the Inmarsat system are invoked. Statistics available from the United States Coast Guard operations in the Atlantic for the comparable period covered by the IMSO report showed that more than 95% of alerts received via the Inmarsat system were false.

5.6 Having briefly discussed the above proposal, the Sub-Committee, having agreed that such information would be useful, pointed out that RCCs should collect and analyse false alert statistics in line with COMSAR/Circ.29 on Guidance for the voluntary use of the standardized questionnaires and formats for reporting false alerts in collecting data on false alerts.

COSPAS-SARSAT SERVICES

5.7 The Sub-Committee noted with appreciation document COMSAR 10/5/2 (COSPAS-SARSAT), providing a brief status report on the COSPAS-SARSAT Programme, including system operations, space and ground segments' status, beacon population, false alert statistics, interference in the 406.0 – 406.1 MHz frequency band, MEOSAR systems and the establishment by the COSPAS-SARSAT Secretariat of the International 406 MHz Beacon Registration database (IBRD).

5.8 The delegation of Cyprus made statements concerning the establishment of TRMCC as indicated in document COMSAR 10/5/2, set out in annex 39.

5.9 The delegation of Greece made a statement on the same issue, set out in annex 40.

5.10 The delegation of Turkey made a statement on the same issue, set out in annex 41.

5.11 After explanation/comments provided by the observer from the COSPAS-SARSAT Secretariat, the Chairman, in summing up the discussion, stated that the issue of new MCCs service areas, if required, should be discussed in the proper international organization, in this case COSPAS-SARSAT.

5.12 The delegation of Greece reserved its right to come to IMO to discuss the matter further.

5.13 Recognizing the importance of the establishment and proper use of the IBRD for the international maritime/SAR community, the Sub-Committee, in order to promote the use of the database, prepared a draft MSC circular containing Guidance on the COSPAS-SARSAT International 406 MHz Beacon Registration Database, set out in annex 9, for submission to MSC 81 for approval.

COMBINED SIMPLIFIED VOYAGE DATA RECORDER (S-VDR) / 406 MHZ EPIRB

5.14 The Sub-Committee recalled that COMSAR 8 had discussed the topic of the use of float-free capsules with the simplified voyage data recorder together with the possibility of using the EPIRB required by SOLAS chapter IV for the S-VDR capsule. Subsequently, MSC 78 had adopted a resolution providing performance standards for such devices (MSC.163(78)).

5.15 In considering document COMSAR 10/5/3 (COSPAS-SARSAT), the Sub-Committee noted the information on the COSPAS-SARSAT support for combined S-VDR/406 MHz EPIRB devices, including the development of the minimum performance requirements and type approval testing requirements which were detailed in the appropriate COSPAS-SARSAT documents (C/S T.001 and C/S T.007), available free of charge from the COSPAS-SARSAT Secretariat website.

5.16 In this context the Sub-Committee considered it important to note that COSPAS-SARSAT type approval testing:

- .1 did not evaluate the device's VDR capabilities, although the possible impact of the VDR on 406 MHz performance was considered; and
- .2 was limited to confirming performance requirements defined by COSPAS-SARSAT for 406 MHz beacons, and did not assess the performance or the availability of a 121.5 MHz homer or consider the 406 MHz transmitter performance beyond the specified operational lifetime of either 24 or 48 hours.

5.17 In view of the above, Administrations should augment the COSPAS-SARSAT type approval requirements as appropriate to ensure that combined EPIRB / S-VDR beacons meet IMO requirements for the voyage data recording function and for location transmissions exceeding COSPAS-SARSAT requirements detailed in document C/S T.001 (see also paragraph 15.1).

REVISION OF RESOLUTION A.888(21)

5.18 The Sub-Committee recalled that:

- .1 MSC 77:
 - .1.1 in accordance with operative paragraph 3(c) of resolution A.888(21) on Criteria for the provision of mobile-satellite communication systems in the GMDSS, had authorized the Sub-Committee to review the resolution, under its work programme item "Satellite services (Inmarsat and COSPAS-SARSAT)", with a view to keeping it updated to secure the long-term integrity of the GMDSS; and
 - .1.2 had approved MSC/Circ.1077 on Procedure for evaluation and possible recognition of mobile-satellite systems notified for use in the GMDSS;
- .2 COMSAR 8 had started its consideration of the issue based on the document by the United States (COMSAR 8/5/1) and had invited Member States to provide their comments and proposals to COMSAR 9 for further consideration;

- .3 MSC 79 had confirmed that IMSO was the appropriate organization to carry out the required oversight of future providers of mobile-satellite communication system services for the GMDSS (MSC 79/23, paragraph 22.34); and
- .4 COMSAR 9 had established a correspondence group under the co-ordination of IMSO to review resolution A.888(21) with terms of reference, set out in annex 9 to COMSAR 9/19.

5.19 The Sub-Committee considered documents COMSAR 10/5 and COMSAR 10/INF.6 by IMSO providing the report of the correspondence group, including the proposed draft revised resolution A.888(21) and a draft reference Public Service Agreement, respectively.

5.20 In particular, the Sub-Committee noted in document COMSAR 10/5 that:

“6 In order to establish the new procedure for the evaluation, recognition and oversight of new satellite providers, it was necessary for the Correspondence Group to consider first what functions would be needed in carrying out such a procedure and how IMO and IMSO should allocate those functions between them. The Correspondence Group sought and received informal advice from a range of sources, which can be summarized as follows:

- .1 so far as is possible, it was essential to isolate IMO from any liability arising from decisions that might be taken by the Organization in relation to the participation by commercial satcom providers in the GMDSS, and in relation to the future LRIT system;
- .2 it was equally important to retain a proper role for the MSC in GMDSS regulation and the approval processes that flowed from it;
- .3 the preferred regime was one that would involve the MSC in a general way at the very beginning of an application to participate in the GMDSS, but made a clear and clean break between the organizations immediately after that point in the process. This might result in the following general procedure:
 - (a) IMO to establish the regulatory regime, via the revision of resolution A.888(21), stating that IMSO was to evaluate and approve satcom companies to participate in the GMDSS, undertake the oversight on a continuing basis and keep IMO (MSC) informed;
 - (b) the Company would apply – through its Government – to IMO. The application would be reviewed by the MSC – which would have a general discussion of principles and policy issues only – and would forward the application to IMSO; and
 - (c) IMSO would verify the information provided and evaluate the application (the process would be open and transparent with IMO and the sponsoring Government involved as Observers), decide on the acceptability of the applicant (based on criteria established by IMO in the revised resolution A.888(21)) and, if appropriate, recognize the applicant’s services and conduct ongoing oversight. IMSO would also be responsible for ensuring compliance – including any resulting enforcement procedures; and

.4 this procedure would offer a clean and defensible break between IMO and IMSO at the point between 6.3(b) and 6.3(c) above, while providing the MSC with an ongoing role at the policy level. This would extend into the future generic regime the current practice in relation to the oversight of Inmarsat.

7 The Correspondence Group had achieved a very broad agreement in support of this approach, and some Governments had already expressed their official support in IMSO for the proposed division of responsibility between IMO and IMSO. However, two countries had not been able to fully agree this approach within the discussions of the Correspondence Group.”

5.21 The observer from the IHO, on behalf of the Navigational Warning and Meteorological Message Co-ordinators represented in the IHO CPRNW, expressed concern about the possible multiplication in their operational effort and broadcast costs if they would be required to input messages into multiple MSI systems.

5.22 The Sub-Committee considered document COMSAR 10/5/5 (United States) providing comments on the IMSO submissions and identifying fundamental concerns.

5.23 The Sub-Committee took into account that the SAR Working Group had discussed in depth the proposal to amend resolution A.888(21) to revise the routing of alerts to responsible rather than associated RCCs, as proposed in document COMSAR 10/6/6 (United States), and noted that:

- .1 the Working Group was in favour of improvements to the SAR system, however it was cautious that the improvements were actually improvements and not simply modifications to existing systems that may not offer the same speed of the alerts routing and reliability that we have today; and
- .2 the Working Group had noted that the existing systems including the COSPAS-SARSAT and Inmarsat have a significant number of false alerts among the alerts sent to RCCs. Therefore, the Working Group recommended to the Sub-Committee not to adopt the proposal in document COMSAR 10/6/6 at this time but rather, invite Member Governments to gather information from their RCCs on the number of false alerts received, on their views of the efficiency of current alerting systems, and the requirements for alert transmission in their particular SRR and neighbouring regions; and, to submit this information to COMSAR 11 with a view to reconsider the proposal in document COMSAR 10/6/6.

5.24 With respect to the proposed draft amendments to resolution A.888(21), the delegation of the Russian Federation, while supporting in general the oversight function to be performed by IMSO, expressed concern that the evaluation and recognition of new systems for the GMDSS had been removed from IMO and placed to IMSO. This effectively excluded IMO from the approval process and placed approval and oversight functions to one entity. It might potentially cause a serious conflict of interests particularly because approval and oversight procedures are to be changed.

5.25 The delegation of South Africa expressed concern on the potential conflict between the envisaged evaluation and assessment function *vis-à-vis* the approval function. In his view, the latter should remain with IMO.

5.26 The delegation of the United States expressed support for most of the technical provisions of the proposed revision to resolution A.888(21) as they pertained to functions to be preformed by satellite systems.

The delegation of the United States expressed appreciation for the broad support, and agreed with the goal of establishing an orderly and expeditious procedure to incorporate additional mobile-satellite systems into the GMDSS. However, the United States stated that it did not believe that such a procedure had yet been established and was concerned that the path being followed would be counterproductive to the shared goal. Specifically:

- .1 it established a process for oversight and approval that would discourage new systems from offering to provide GMDSS by imposing restrictive conditions on entry;
- .2 it excluded IMO from the approval decision making process, and instead put IMSO in the role of approval of new providers, as well as providing oversight. This had the potential to confuse the approval role with the oversight role in a way that, in their view, inappropriately removed IMO from the process. As stipulated in resolution A.888(21) currently in force, the United States believed the IMO, through its MSC, should decide whether a system approved by a Contracting Government might participate in the GMDSS;
- .3 it incorporated an IMSO draft Public Service Agreement (PSA) into an IMO document. This draft had not been approved formally by the IMSO. Further it contained provisions that potential service providers informed as barriers to participation;
- .4 it failed to have established processes for addressing GMDSS provider entry, and it relied on IMSO party actions that had not been taken and would require additional time, perhaps years; and
- .5 the foundation of the suggested IMO-IMSO process for approval and oversight was built on the “clean break” principle suggested by IMSO’s legal analysis. The United States did not agree with this analysis, as indicated in annex 42.

The delegation of the United States stated that it believed the resolution A.888(21) modification proposals and associated documentation were not mature and that the proposals should not be sent to MSC 81 with the approval of the COMSAR Sub-Committee. The United States delegation reserved its position accordingly.

5.27 The observer from IMSO reminded the Sub-Committee of the decisions of MSC 79 which confirmed that IMSO was the appropriate organization to carry out the required oversight of future providers of satellite services for the GMDSS, and also advised the Sub-Committee of the processes being carried out within IMSO in relation to amending the IMSO Convention in respect of possible alternative providers of satellite services.

Given the experience of previous amendments to the IMSO Convention and related processes, which he explained in detail, the observer from IMSO stated that using the rapid implementation process, IMSO could be ready to commence oversight as required some three months after acceptance by the IMSO Assembly, subject to the decisions of the IMSO Members.

5.28 In direct response to the statement by the United States' delegation (paragraph 5.26) the Director of IMSO informed the Sub-Committee that the legal analysis referred to by the United States in paragraph 5.26.5 and annex 42 had been reviewed by the Advisory Committee of IMSO and, after thorough consideration, *“the Committee agreed that this principle should form the basis for the draft Reference Public Services Agreement and the revision of resolution A.888”* (Final Report of the Twelfth Meeting of the IMSO Advisory Committee). In addition, the IMSO Advisory Committee, at its thirteenth session, agreed the text of the draft Reference Public Services Agreement (PSA) based on this principle and recommended its approval by the IMSO Assembly.

5.29 In considering the proposed procedures for evaluation and recognition of new mobile-satellite service providers in the GMDSS, the Sub-Committee agreed, and IMSO accepted, that the Maritime Safety Committee should nominate named individuals as members of the independent Group of Experts, to ensure IMO had a central and visible role in the evaluation and recognition process; and that IMSO would report back to the Maritime Safety Committee on the outcome of that process.

5.30 The delegation of the United States observed that the understanding referred to in paragraph 5.29 above was between the Sub-Committee and the IMSO Director, and that this matter had yet to be considered by the IMSO Contracting Parties. Further the United States delegation observed that in addition to the reference made in paragraph 5.28 to decisions of the IMSO Advisory Committee as described in the report of its thirteenth meeting it was important to note that the views were not unanimous and that in the report the United States formally expressed the view that *“although the Committee made progress by concluding the reference PSA drafting exercise, we, the Committee, had failed in creating a framework to attract new service providers according to them and as evidenced by the disagreement with these providers on a number of key points including but not limited to, cost, apportionment, and appeal process. The United States went on to point out that without the entry of new providers into the GMDSS, particularly in current heady business environment, competition and choice are our only allies in keeping our mariners safe. Because of this, the Party of the United States suggested that we must look into fundamental changes in how to cost effectively provide oversight both in IMSO and the IMO”*. The delegation of the United States accordingly expressed the view that this paragraph should be included so as to present a complete picture of the proceedings of the Sub-Committee and continued to reserve its position. These views were shared by the delegation of the Russian Federation.

5.31 In considering document COMSAR 10/5 and taking into account the views expressed above, the Sub-Committee:

- .1 endorsed the Correspondence Group's decision to adopt the “clean break” principle in relation to the functions to be carried out by IMO and IMSO in the procedure for the evaluation, recognition and oversight of new satellite providers (paragraphs 6 and 7);
- .2 noted the advice received from the Navigational Warning and Meteorological Message Co-ordinators in relation to maritime safety information (MSI) broadcast facilities, and the conclusions of the Correspondence Group in that regard (paragraphs 8 to 12);
- .3 endorsed the recommendation of the Correspondence Group that every system should provide every SOLAS function (paragraph 13);

- .4 noted the concern expressed by the Correspondence Group about the implications, both cost and operational, of a multi-provider regime on distress communication routing, and the opinion of the Group that the Sub-Committee may need to re-visit this issue when the capabilities of other providers become more clear (paragraph 14);
- .5 invited the Committee to consider strengthening the force of the proposed draft revised resolution by incorporating a reference to it in the SOLAS Convention (paragraph 15); and
- .6 decided that the proposed draft resolution incorporated "... a complete, expeditious and effective procedure for the evaluation, recognition and oversight of new satellite providers" (paragraph 2.5).

5.32 After an in-depth discussion, during which there was a clear majority who expressed support for the resolution as revised by the Correspondence Group, the Sub-Committee agreed to the proposed amendments to resolution A.888(21), as amended, given in annex 10, for submission to MSC 81 for consideration and action, as appropriate.

6 MATTERS CONCERNING SEARCH AND RESCUE, INCLUDING THOSE RELATED TO THE 1979 SAR CONFERENCE AND IMPLEMENTATION OF THE GMDSS

HARMONIZATION OF AERONAUTICAL AND MARITIME SEARCH AND RESCUE PROCEDURES, INCLUDING SAR TRAINING MATTERS

6.1 The Sub-Committee noted that, as requested by COMSAR 9, MSC 80 had extended the target completion date for the work programme agenda item "Harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters" to 2006.

6.2 The Sub-Committee also noted that, as approved by MSC 80 and endorsed by C 94, the twelfth meeting of the International Civil Aviation Organization/International Maritime Organization (ICAO/IMO) Joint Working Group (JWG) on the Harmonization of Aeronautical and Maritime Search and Rescue was held in Stockholm, Sweden, from 29 August to 2 September 2005.

6.3 The Sub-Committee further noted that MSC 80 had endorsed the Sub-Committee's action in issuing COMSAR/Circ.37 – Guidance on minimum communication needs of Maritime Rescue Co-ordination Centres (MRCCs), superseding COMSAR/Circ.18 of 11 March 1998.

6.4 The Sub-Committee took note of information provided in document COMSAR 10/INF.3 (Secretariat) that the WMU and the ILF had developed a high-level, overview course on "Search and Rescue Management" and presented the course for the first time from 20 June to 1 July 2005 at the WMU. The Sub-Committee expressed its appreciation to the WMU and the ILF for this initiative.

6.5 The Sub-Committee noted information provided in document COMSAR 10/INF.8 that the United States was developing a new maritime search planning software in co-operation with the United Kingdom and Canada. The Sub-Committee was informed that the United States was planning to demonstrate the newly developed software to JWG 13 and at COMSAR 11.

6.6 The Sub-Committee briefly considered documents COMSAR 10/2 (Secretariat) reporting the outcome of MSC 80 and COMSAR 10/6 (Secretariat) reporting the outcome of JWG 12 and decided to refer them to the SAR Working Group, to be established, for detailed consideration.

Establishment of a Working Group

6.7 The Sub-Committee established the Working Group on Search and Rescue and instructed it to consider the above documents in detail and, taking into account the comments made at Plenary, to:

- .1 analyse recommendations made by the Joint Working Group and provide comments, particularly:
 - .1 on establishing, on a voluntary basis, a complementary SAR audit of maritime SAR services on the basis of the SOLAS and SAR Conventions;
 - .2 on the SAR protocol questions presented in appendix F to document COMSAR 10/6 with a view to publishing them;
 - .3 on providing access to Long-Range Identification and Tracking (LRIT) data, as well as AIS data, by both aeronautical and maritime SAR Authorities for the considerable potential benefits to SAR services;
 - .4 on the concerns of the JWG about the lack of a common world-wide approach on the use of mobile telephones in maritime and aeronautical distress alerting with a view, if appropriate, to encouraging ITU to investigate the problem; and
 - .5 concerning the statistics on ELT/EPIRB/PLB manufacturers or models consistently causing malfunctions and publishing details of those models or manufacturers which are found to be causing these malfunctions;
- .2 prepare justification, if there is a need of extension of the target completion date of the work programme item “Harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters” to 2007;
- .3 prepare justification for conducting a next session of the ICAO/IMO JWG, and the draft agenda, reviewing its terms of reference; and
- .4 prepare any recommendations or proposals for harmonization of aeronautical and maritime SAR procedures.

Report of the Working Group

6.8 Having received the report of the Working Group (COMSAR 10/WP.5 and addenda), the Sub-Committee approved the report in general and took action as indicated hereunder.

Joint ICAO/IMO Working Group Report

6.9 In considering recommendation 1 of the JWG 12, the Sub-Committee noted that the Joint Working Group on Member State Audit, at its third session, had agreed that it would not be productive or feasible to consider expanding the list of instruments to include the SAR Convention

at this time. The Sub-Committee concurred with the decision of the JWGMSA 3 not to pursue the issue further.

6.10 In considering recommendation 2 of the JWG 12, the Sub-Committee noted that the SAR protocol questions presented in appendix F to document COMSAR 10/6 were only applicable to the aeronautical SAR services and instructed the JWG 13 to revisit the questions with a view to incorporating these protocol questions in the National Self Assessment Questionnaire set out in Appendix H, Volume I, the IAMSAR Manual.

6.11 Having considered recommendation 11, the Sub-Committee agreed that access to Long-Range Identification and Tracking (LRIT) and AIS data by both aeronautical and maritime SAR Authorities would provide considerable benefits to SAR services. The Committee was invited to endorse this view and take it into account when developing Long-Range Identification and Tracking (LRIT) standards.

6.12 The Sub-Committee agreed with the JWG view that there was a lack of a common worldwide approach on the use of mobile telephones in maritime distress alerting. The Sub-Committee noted that the GMDSS was the preferred alerting system but took into consideration the large number of vessels not required to carry GMDSS equipment. Further it was noted that with the prevalence of use of mobile telephones, guidance on mobile telephones should be provided to SAR services. The above decision of the Sub-Committee was reflected in the prepared appropriate draft amendments to the IAMSAR Manual, set out in annex 16 (see also paragraph 8.6).

6.13 To this effect, the Sub-Committee prepared a liaison statement addressing the issue of a lack of a common world-wide approach on the use of mobile telephones in maritime distress alerting, set out in annex 11 and instructed the Secretariat to convey it to the ITU Study Group 2 for consideration. The Committee was invited to endorse the action taken.

6.14 The Sub-Committee considered the recommendation concerning the statistics on ELT/EPIRB/PLB manufacturers or models consistently causing malfunctions and publishing details of those models or manufacturers which were found to be causing these malfunctions and the COSPAS-SARSAT's statement that it was not practical for the COSPAS-SARSAT Secretariat to gather reliable information on the issue and/or publish it on behalf of Administrations. The Sub-Committee agreed that these statistics should be collected by Member Governments with a view to reducing the number of malfunctions and false alerts within the GMDSS and SAR system and accordingly invited Member Governments to consider publishing details of those ELT/EPIRB/PLB models or manufacturers which were found to be causing malfunctions and false alerts.

6.15 The Sub-Committee agreed on the continuation of the Joint ICAO/IMO Working Group for the next session, planned to be held in Singapore from 28 August to 1 September 2006, and invited the Committee to approve it and extend the target completion date for the agenda item "Harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters" to 2007.

6.16 The Sub-Committee reviewed and agreed the terms of reference and provisional agenda for JWG 13, as given in annex 12.

LOCATING LIGHTS FOR EMERGENCY POSITION-INDICATING RADIO BEACONS (EPIRB)

6.17 The Sub-Committee recalled that the Assembly, at its nineteenth session, had adopted resolution A.810(19) on Performance standards for float-free satellite emergency position-indicating radio beacons (EPIRBs) operating on 406 MHz and had requested the Maritime Safety Committee to keep those Performance Standards under review and to adopt amendments thereto, as necessary.

6.18 Having briefly discussed document COMSAR 10/6/5 in which the United States did not agree with the International Electrotechnical Commission's proposal to amend the certification standards for 406 MHz EPIRBs and document COMSAR 10/6/10 (IEC) which commented on the United States' view, providing background information on the requirements for, and the changing technology of, EPIRB strobe lights, the Sub-Committee referred the matter to the GMDSS Working Group for detailed consideration.

6.19 The observer from the IEC informed the Sub-Committee that this year was the 100th anniversary of the International Electrotechnical Commission. The first President of the IEC had been Lord Kelvin who had developed the temperature scale and the concept of absolute zero, designed the first trans-Atlantic telegraph cable and was also a leisure sailor. His name lived on the British company Kelvin Hughes which was well known to mariners. This year was also the 25th anniversary of Technical Committee 80 which is the IEC technical committee which assisted the Organization in producing technical standards for radio and navigational equipment.

Report of the Working Group

6.20 Having received the report of the GMDSS Working Group (COMSAR 10/WP.4, paragraphs 4.1 to 4.5), the Sub-Committee took action as indicated hereunder.

6.21 The Sub-Committee noted the concern of the United States (COMSAR 10/6/5) that the change in flash duration may cause the EPIRB to be confused with a navigational aid, particularly a north cardinal buoy.

6.22 The Sub-Committee also noted the explanation by IEC (COMSAR 10/6/10) that the flash duration of EPIRB lights was to some extent controlled by the technology used – incandescent bulbs, discharge tube strobe and LEDs – and that various national Administrations were specifying different limits for flash duration. The IEC intent in the proposed changes to IEC 61097-2 was to achieve a better consensus of values from these national requirements. LEDs are now capable of meeting the light intensity requirements of resolution A.810(19) and have the advantage of not requiring high voltages, which leads to an improvement in reliability.

6.23 The delegation of Australia stated that, in any new standard, they would like to see the upper limit of the flashing duration to be 1 second.

6.24 The Sub-Committee agreed that the EPIRB light should be distinguishable from a cardinal buoy light but did not consider that this was a major problem.

6.25 The Sub-Committee further noted the concern of the Working Group regarding any changes to standards which would permit a return to the use of incandescent lights, which were inferior to later technologies.

6.26 The Sub-Committee concluded that the IEC should be advised that any changes to IEC 61097-2 should be such that they only permit lights which are at least as effective as the discharge tube strobe light.

PLAN FOR THE PROVISION OF MARITIME SAR SERVICES, INCLUDING PROCEDURES FOR THE ROUTING DISTRESS INFORMATION IN THE GMDSS

List of documents and publications which should be held by a maritime rescue co-ordination centre (MRCC)

6.27 The Sub-Committee noted that, as instructed by COMSAR 5, the Secretariat, taking into account the outcome of MSC 80 and A 24, had updated SAR.7/Circ.6, List of IMO documents and publications which are considered essential for use by MRCCs, and had issued it as SAR.7/Circ.7. The Sub-Committee approved the issuing of circular SAR.7/Circ.7.

Current availability of SAR services world-wide

6.28 The Sub-Committee recalled that MSC 78 had endorsed the issue, on 24 February 2004, of SAR.8/Circ.1 on Global SAR Plan, containing information on the current availability of SAR services world-wide in loose-leaf format and displayed it on the IMO website.

6.29 The Sub-Committee also recalled that MSC 78 had urged Member Governments to respond to COMSAR/Circ.27 on Data format for a new combined SAR.2 and SAR.3 circular, attaching the questionnaire on the current availability of SAR services worldwide, as soon as possible if they had not already done so.

6.30 The Sub-Committee was informed that, as per its instructions and using the information provided by Governments, the Secretariat had issued SAR.8/Circ.1/Corr.2 and SAR.8/Circ.1/Corr.3 in March and October 2005, respectively. The countries which had provided information for those circulars included: Argentina, Cyprus, Finland, Greece, Japan, Latvia, Malta, the Netherlands, Peru, the Russian Federation, Slovenia, Turkey and Uruguay. Hong Kong, China as an Associate Member of IMO, also provided information for the circulars.

6.31 The Sub-Committee was also informed by the Secretariat that, since issuing SAR.8/Circ.1/Corr.3, the Secretariat had received information and amendments from Brazil, Colombia, Norway, Peru, Romania, the Russian Federation, Thailand, the United Kingdom, the United States, Venezuela and Viet Nam. The Secretariat was planning to issue SAR.8/Circ.1/Corr.4 in March/April 2006, reflecting information and amendments provided by the above-mentioned Member States.

Regional SAR Co-operation

6.32 The Sub-Committee recalled that resolution 8 of the 1979 SAR Conference “had urged States to promote, in consultation with, and with the assistance of the Organization, support for States requesting technical assistance for:

- .1 the training of personnel for search and rescue; and
- .2 the provision of the equipment and facilities, necessary for search and rescue.”

6.33 The Sub-Committee also recalled that MSC 69 had adopted MSC resolution MSC.70(69) on Adoption of amendments to the International Convention on Maritime Search and Rescue, 1979 clarifying the responsibilities of Governments and putting greater emphasis on the regional approach and the closest practical co-ordination between maritime and aeronautical SAR services.

6.34 The Sub-Committee further recalled that MSC 72 had endorsed COMSAR 4's identification of East and West Africa and parts of Asia and the Pacific, Central and South America and the Mediterranean regions as being the areas mainly lacking SAR and GMDSS facilities and had agreed that, in considering any remedial action needed to be taken, priority should be given to the African regions.

6.35 In considering document COMSAR 10/6/1 (Secretariat), the Sub-Committee noted that the South East Asian regional seminar/workshop on Maritime Search and Rescue and the GMDSS was held in Manila, Philippines, from 24 to 28 October 2005. In particular, it was noted that participants from Bangladesh, Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, Papua New Guinea, the Philippines, Thailand and Viet Nam, attended the seminar/workshop, the aim of which to assist countries within the region to enhance their maritime search and rescue capabilities, was achieved. The seminar/workshop made 10 recommendations with a view to improving SAR services in the region, reflecting a need for further technical co-operation and regular consideration/assessment of SAR services within the region.

6.36 The delegation of Nigeria informed the Sub-Committee that Nigeria was in the final stages in the progress of establishing a Regional Maritime Rescue Co-ordination Centre (MRCC), as one of the proposed five regional MRCCs in Africa being agreed at the 2000 Florence Conference. The RMRCC could cover the region comprising Togo, the Republic of Benin, Nigeria, Cameroon, Gabon, Equatorial Guinea, São Tomé and Príncipe and the Democratic Republic of the Congo and would be co-located with the country Aeronautical Rescue Co-ordination Centre (ARCC) at the international airport in Lagos. The relevant equipment for this project would be installed in Nigeria in April this year.

Nigeria would in due course request the IMO Secretariat for assistance in capacity building through a regional workshop on this subject.

6.37 The delegation of Kenya informed the Sub-Committee that Kenya was in the final stages of setting up a Regional Maritime Rescue Co-ordination Centre (RMRCC) in Mombasa as one of the proposed five regional centres in Africa as agreed at the 2000 Florence Conference. The MRCC was to cover the region comprising the Republics of Kenya, the Seychelles, Tanzania and Somalia. The relevant equipment for the project had been received and should be installed during this month of March 2006. Kenya would wish to thank the IMO Secretariat for the initiative taken to establish the regional MRCC, and further request for assistance in training for capacity building on the initial management and system operations.

6.38 In considering document COMSAR 10/6/2 (Venezuela), the Sub-Committee noted that Venezuela was proposing to develop an integrated search and rescue model for the Caribbean in co-operation with the Netherlands (Curacao), France (Martinique), the United Kingdom (Montserrat), Barbados, Trinidad and Tobago and the United States (Puerto Rico).

6.39 The delegation of the Netherlands informed the Sub-Committee that its country had already concluded an MOU in SAR matters with Venezuela, and was in the process of concluding similar MOUs with other Caribbean countries. The delegation also expressed concern about the data security and suggested including it in the first step of the development and evaluation of this proposal. The delegation of France stated that it was in favour of the enhancement of regional Caribbean co-operation in SAR matters and was also of the opinion that the initiative proposed by Venezuela needed a close assessment in reference to what had already been achieved. Similarly, the delegation of Uruguay also commended this proposal and the Venezuelan efforts in regional integration and co-operation, adding a supplementary suggestion for a co-ordinated regional seminar/workshop on this particular subject.

6.40 In considering document COMSAR 10/6/3 (ROPME and MEMAC), the Sub-Committee noted the outcome of the Regional Meeting convened by MEMAC on the Establishment of the Maritime Search and Rescue Services in the ROPME Sea Area, attended by ROPME Member States such as Bahrain, Iran, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The meeting made recommendations urging the ROPME Member States, which have not yet acceded to the SAR Convention, to do so, preferably in the year 2006; proposing that MEMAC should be designated as a Regional Organization dealing with co-ordination and co-operation with respect to implementing search and rescue (SAR) services in ROPME Sea Area and suggesting that ROPME Member States should introduce their Authorities in charge of maritime search and rescue to MEMAC to carry out the above procedures accordingly.

6.41 The Ukraine (COMSAR 10/6/7), informed the Sub-Committee of the outcome of the 2nd Black Sea Conference on Maritime Search and Rescue and the GMDSS, which was held in Odessa, Ukraine, from 23 to 24 November 2005. The objectives of the Conference were to consider enhanced measures for regional co-operation in the field of SAR operations in the Black Sea; further clarify and identify the overall requirements for professional SAR training in all six Black Sea countries (including Odessa, Ukraine), following the Training Needs Analysis carried out by the IMO Consultants in November 2003; and agree on the actions to develop further co-operation under the Ankara Agreement on Maritime Search and Rescue among Black Sea Coastal States, 1998.

MEDICAL ASSISTANCE IN SAR SERVICES

6.42 The Sub-Committee recalled that MSC 72 had approved MSC/Circ.960 on Medical assistance at sea highlighting the important Role of Tele-medical Assistance Services and Medical Assistance at Sea and Maritime Radiocommunications.

6.43 The Sub-Committee also recalled that MSC 77 had approved MSC/Circ.1042 on List of contents of the “emergency medical kit/bag” and medical consideration for its use on Ro-Ro passenger ships not normally carrying a medical doctor.

6.44 The Sub-Committee noted that MSC 80 had approved MSC/Circ.1172 on Identification of passenger ships, other than Ro-Ro passenger ships, which should benefit from being equipped with the emergency medical kit/bag (EMK).

6.45 The Sub-Committee also noted that MSC 80 had extended the target completion date for the work programme item “Medical assistance in SAR services” to 2006.

6.46 The Sub-Committee briefly discussed document COMSAR 10/6/8 (France) which proposed the development of a pre-printed medical order form which would be recognized by the national and international health Authorities and COMSAR 10/6/9 (France) proposing the usage of a common form for the exchange of medical information between TMAS, MRCCs and ships, and instructed the SAR Working Group, taking into account comments made at Plenary, to prepare:

- .1 a liaison statement to address problems encountered in replenishing on-board medical supplies in accordance with MSC/Circ.1042 and MSC/Circ.1105 due to the difference in the health regulations in different countries, with a view to forwarding it to the WHO for their advice;
- .2 a draft MSC circular containing a guidance on exchange of medical information using a common form which would facilitate the transfer of all available and relevant medical information between TMAS, MRCCs and ships; and

- .3 justification, if there is a need for extending the work programme item “Medical assistance in SAR services” to 2007.

Report of the Working Group

6.47 In considering the relevant parts of the SAR Working Group report (COMSAR /WP.5, section 3 and Add.2, section 6), the Sub-Committee agreed to the draft MSC circular on Guidance on exchange of medical information between telemedical assistance services (TMAS) involved in international SAR operations, set out in annex 13, and invited the Committee to approve it.

6.48 The Sub-Committee endorsed the liaison statement to address problems encountered in replenishing on-board medical supplies in accordance with MSC/Circ.1042 and MSC/Circ.1105 due to the difference in the health regulations in different countries, set out in annex 14, and instructed the Secretariat to forward it to WHO and ILO for their advice. The Committee was invited to endorse the action taken.

6.49 The Sub-Committee agreed that there was a need for extension of the work programme item “Medical assistance in SAR services” to 2007, prepared the justification, as given in annex 15, and invited the Committee to approve the proposed extension.

7 DEVELOPMENTS IN MARITIME RADIOCOMMUNICATION SYSTEMS AND TECHNOLOGY

7.1 The Sub-Committee recalled that COMSAR 7 had agreed that this item should be a permanent one in the Sub-Committee’s agendas. Meanwhile, recognizing the importance and broadness of this item, the Sub-Committee agreed that *no submissions concerning performance standards for any radiocommunication equipment should be accepted and/or considered under this work programme item.*

7.2 The Committee extended the target completion date for the high priority item “*Developments in maritime radiocommunication systems and technology*” to 2006.

7.3 The Sub-Committee recalled that COMSAR 9, recognizing the importance of the issue of land based infrastructure and the use of IP networks for data distribution in line with GMDSS functions, had requested Members to submit suitable proposals to COMSAR 10.

7.4 The Sub-Committee considered in general, document COMSAR 10/7 (Japan) proposing that the XML format should be standardized for data exchange among ship reporting systems and instructed the GMDSS Working Group, taking into account comments/decisions made at Plenary, to:

- .1 consider document COMSAR 10/7 with a view to establishing whether the XML data exchange format is suitable and useful for all ship reporting systems and what the action should be taken further for its standardization; and
- .2 provide relevant comments/recommendations on the use of the XML format and on any further action concerning this agenda item, including any need for extension of the target completion date for consideration at Plenary.

7.5 The Sub-Committee noted document COMSAR 10/INF.11 (CIRM) informing on a new development of integrating satellite and terrestrial communication technologies for vessel and personal safety.

Report of the Working Group

7.6 In considering the relevant parts of the GMDSS Working Group report (COMSAR 10/WP.4, paragraphs 6.1 to 6.4) referring to the above matter, the Sub-Committee took action as summarized hereunder.

XML Format for Ship Reporting Systems

7.7 The Sub-Committee agreed, in principle, that an XML format similar to that proposed by Japan in document COMSAR 10/7 should be standardized for data exchange of ship reporting systems recognized by the Organization. It was noted that XML format standards for maritime services were being developed within other fora, notably through projects supported by the European Union, although these standards do not necessarily include ship reporting systems.

7.8 Therefore, the Sub-Committee deemed it necessary to obtain further information and views from the European Union and maritime agencies on document COMSAR 10/7 and the use of the XML format for consideration at its next session, with a view towards developing an MSC resolution regarding this standard.

7.9 The Sub-Committee agreed that the NAV Sub-Committee should also be asked to provide relevant comments and advice on the issue.

7.10 However, recognizing the importance of the issue, the Sub-Committee invited the Committee to extend the target completion date of the work programme item "Developments in Maritime Radiocommunications Systems and Technology" to 2007, so that this work might be brought to a conclusion with the benefit of these additional sources of expertise and requested Members to submit appropriate proposals to COMSAR 11.

8 REVISION OF THE IAMSAR MANUAL

8.1 The Sub-Committee noted that, in accordance with the procedures prescribed in the annex to resolution A.894(21) and, being advised that ICAO had already approved the proposed draft amendments to the IAMSAR Manual, MSC 80 had adopted them for dissemination by means of MSC/Circ.1173, and decided that the adopted amendments should enter into force on 1 June 2006.

8.2 The Sub-Committee recalled that COMSAR 9 had instructed:

- .1 the Secretariat to consider the proposal that potentially frequently changing information such as telephone numbers, addresses and similar, should not be listed in the Manual due to the potential for being out of date, but that the Manual should give advice where such additional information may be obtained, and similarly the IMO's new web-database regarding information related to the International Ship and Port facility Security Code (ISPS Code), which allows each State to update their own information, could be used to facilitate the needs of the SAR community and report to COMSAR 10; and
- .2 JWG 12 to consider COMSAR 9/WP.2 taking into account the decision of the COMSAR 9 that no change was required for points 1, 13, 15, 16 and 17 and annex 2 to COMSAR 9/WP.3.

8.3 The Sub-Committee was informed by the Secretariat that it was technically possible to include potentially frequently changing information such as telephone numbers and addresses as it was done similarly in IMO's Global integrated shipping information system (GISIS), the newly developed web-database.

8.4 Having agreed that there could be great benefits gained for SAR services, the Sub-Committee instructed the Secretariat to display the Global SAR Plan and GMDSS Master Plan as a SAR information module in GISIS and invited the Committee to endorse it. The Sub-Committee agreed that data input by the Member States, such as the co-ordinates of coastal radio stations and SRRs should be subject to the Secretariat's validation and/or agreement by relevant IMO bodies prior to uploading them into GISIS.

8.5 The Sub-Committee briefly discussed the report of JWG 12 (COMSAR 10/6, sections 3, 4 and 5 and appendices D, E and G) and document COMSAR 10/8 submitted by France, the United Kingdom and the United States and instructed the SAR Working Group to consider them in detail and prepare:

- .1 a draft MSC circular on Adoption of amendments to the IAMSAR Manual;
- .2 draft proposed amendments to the IAMSAR Manual recommending the date of their application; and
- .3 relevant comments and proposals, for consideration at Plenary.

Report of the Working Group

8.6 In considering the relevant part of the SAR Working Group's report (COMSAR 10/WP.5, paragraph 4.1), the Sub-Committee endorsed the draft MSC circular on Adoption of amendments to the IAMSAR Manual, set out in annex 16, for submission to ICAO for approval and MSC 81 for adoption with an entry into force date of 1 July 2007.

8.7 The Secretariat was instructed to convey the agreed draft amendments to ICAO for approval.

8.8 The Committee was invited to take account of the response to be received from ICAO when adopting the draft MSC circular and amendments to the IAMSAR Manual.

9 REVIEW OF THE SPS CODE

9.1 The Sub-Committee noted that MSC 78 had considered the need to update the Code of safety for special purpose ships (SPS Code) to reflect recent amendments to SOLAS chapter III and the adoption of the LSA Code. The Committee had recalled that, since the SPS Code was adopted in 1983, many requirements of the SOLAS Convention had been amended and considerable experience had been gained in the Code's application. Therefore, the Committee had considered that this might be a good opportunity for a review of the whole of the SPS Code and agreed to include a high priority item on "Review of the SPS Code", with two sessions needed to complete the item, in the work programmes of the DE (co-ordinator), COMSAR, DSC, FP, NAV and SLF Sub-Committees.

9.2 The Sub-Committee noted that MSC 80 had agreed to the COMSAR 9 proposal to include this agenda item in the provisional agenda for COMSAR 10.

- 9.3 The Sub-Committee considered document COMSAR 10/9 (Secretariat) pointing out that:
- .1 the SPS Code had been adopted by the thirteenth Assembly as resolution A.534(13) (17 November 1983), and had a recommendatory status;
 - .2 the preamble contained general information on the Code development and application; and
 - .3 chapter 9 – Radiocommunications of the Code contained two paragraphs, the second of which was not in line with the GMDSS.
- 9.4 After some discussion, the Sub-Committee agreed to the draft text of chapter 9 of the draft revised SPS Code as follows:

“CHAPTER 9 – RADIOCOMMUNICATIONS

9.1 Notwithstanding the right of the Administration to impose requirements higher than those specified herein, special purpose ships should comply with the provisions for cargo ships of chapter IV of the 1974 SOLAS Convention, as amended.”

9.5 The Secretariat was instructed to convey the Sub-Committee’s deliberations on the issue to DE 50.

9.6 The Committee was invited to delete the item “Review of the SPS Code” from the Sub-Committee’s work programme, as the work on this item had been completed.

10 MEASURES TO ENHANCE MARITIME SECURITY

INTRODUCTION

10.1 At the opening of the session and following the adoption of the agenda, the Sub-Committee recalled that MSC 80 had authorized the convening of an intersessional meeting of COMSAR Working Group on Long-range identification and tracking (the Group) during the week preceding the session, so as to enable the completion, during the present session, of all the technical work relating to LRIT of ships (MSC 80/24, paragraph 5.113.2); and that it had instructed the Sub-Committee to finalize, with the highest priority, all of the work which needs to be completed and be brought before MSC 81 for consideration and adoption of the proposed SOLAS amendments on LRIT of ships (MSC 80/24, paragraph 5.107).

10.2 The Sub-Committee noted that the Group met from 27 February to 3 March 2006, under the Chairmanship of Mr. Robert Markle (United States), who was elected at the opening of the session. The Chairman of the Group provided an oral report on the work done during the preceding week and the Sub-Committee agreed that the Group should continue its work and report to plenary once it had completed its tasks. The Sub-Committee also agreed to consider the submissions under this agenda item once it had before it the report of the Group.

10.3 Having received the report of the Group (COMSAR 10/WP.2) the Sub-Committee took action as indicated in the following paragraphs. Those who submitted documents for consideration under this agenda item agreed to dispense with the introduction of their documents as they were satisfied with the actions taken by the Group.

DISCUSSION OF DOCUMENTS (OTHER THAN COMSAR 10/10)

Documents submitted for consideration by COMSAR 10 under agenda item 10

10.4 CIRM (COMSAR 10/10/1) pointed out that a number of its member companies already provided LRIT services on a commercial basis and they did so within a framework of a fair and open market competition. CIRM expressed concern that its members, as well as other legal entities in the private sector who may be able to provide similar services, might eventually face unfair competition in providing LRIT services from organizations or companies that were either partly- or majority-owned or funded by Governments.

10.5 The Sub-Committee noted the points made by CIRM in their submission (COMSAR 10/10/1) but, as the matters related to issues of competition, agreed with the view of the Group that they fell outside its terms of reference in relation to the development of the LRIT system and, as a result, were matters to be dealt with by each Member State at the national level.

10.6 IALA (COMSAR 10/10/2) reported on the outcome of a Seminar on Global Tracking of Vessels which IALA, in conjunction with the Light Dues Board Peninsular, Malaysia, held from 9 to 11 November 2005 in Kuala Lumpur, Malaysia. The seminar aimed at clarifying the purpose of long-range tracking; defining long-range tracking in the overall concept of e-navigation; defining the roles and responsibilities within long-range tracking; and providing input to the Sub-Committee on requirements of long-range tracking.

10.7 The Sub-Committee appreciated the submission of IALA (COMSAR 10/10/2) and noted that the Group had taken the relevant suggestions into account when considering the individual tasks of the report of the correspondence group (COMSAR 10/10). The Sub-Committee agreed with the view of the Group that some of the suggestions, for example a number of the issues discussed under the heading Policy/Legal Requirements (COMSAR 10/10/2, annex, section 3), appeared to be contrary to existing related decisions of the Committee and thus agreed with the Group that these should not be taken into account as they strayed into areas beyond the instructions of the Committee.

10.8 ICS *et al* (COMSAR 10/10/3) drew attention to the range of reporting requirements already imposed on ships engaged on international voyages either by the provisions of the various international treaties governing their operation or as a result of national requirements in a variety of places. ICS *et al* expressed the view that the discussion on the adoption of an LRIT system offers the opportunity to simplify and standardize ship reporting procedures and to adopt a standard format to suit all purposes. Furthermore, in their opinion the burden of ship reporting on the ship's crew could be reduced through incorporation into the LRIT system concept. As a result, ICS *et al* proposed that the subject of standard ship reporting formats and mechanisms be considered in the context of the discussions on LRIT.

10.9 The Sub-Committee recalled that the Chairman of the Committee, during MSC 80, recalling the decisions of MSC 79 in relation to the eventual purpose and scope of LRIT (MSC 79/23, paragraphs 5.68, 5.71 and 5.72) had suggested (MSC 80/24, paragraph 5.115), and the Committee had agreed, that the two intersessional working groups and COMSAR 10 should concentrate on the development of LRIT for maritime security purposes and when that task had been completed then instructions should be sought from the Committee and the MEPC with regard to the safety and environmental aspects.

10.10 The Sub-Committee agreed with the view of the Group that the proposals of ICS *et al* (COMSAR 10/10/3) were sound in nature and that these should be pursued when the LRIT system would be developed to have safety and environmental applications.

10.11 IMSO (COMSAR 10/INF.7) advised that the question of carrying out oversight of the LRIT system on behalf of IMO had been discussed at the eleventh (24 and 25 May 2005) and twelfth (3 and 4 October 2005) sessions of the IMSO Advisory Committee. It also reported that the IMSO Advisory Committee had decided to recommend to the next session of the IMSO Assembly (25 to 29 September 2006) to respond to IMO that IMSO would be willing to undertake the oversight of the LRIT system within the legal framework established by IMO, but that IMSO was not in a position to state that it was able to undertake oversight of the LRIT system until the operational requirements had been sufficiently developed by IMO. It also indicated that, if IMO was to delegate the LRIT system oversight role to IMSO, such responsibilities would not be covered by the amendments to the IMSO Convention already approved in principle by the last session (18 to 22 October 2004) of the IMSO Assembly. In such a case, it was anticipated that an appropriate amendment would be submitted for consideration and decision by the next session (25 to 29 September 2006) of the IMSO Assembly. It was therefore expected that IMSO would be in a position to respond positively to the request of the Committee, at its eighty-second session, in November 2006.

10.12 The Sub-Committee noted the information provided by IMSO (COMSAR 10/INF.7) and invited IMSO to keep the Committee abreast of developments.

Documents submitted for consideration by COMSAR 10 under agenda item 6

10.13 The Sub-Committee noted that the Group had taken into account the recommendations (COMSAR 10/6 (Secretariat), annex, section 6, Recommendations 12/11 and 12/12) of the twelfth session of the ICAO/IMO Joint Working Group on Harmonization of Aeronautical and Maritime Search and Rescue.

DISCUSSION OF DOCUMENT COMSAR 10/10

General

10.14 The Sub-Committee considered the report of the Group in relation to the proposals of the Correspondence Group, as detailed in document COMSAR 10/10 (Co-ordinator of the Correspondence Group). The Sub-Committee noted that MSC 80 had added another five tasks to the original nine tasks which were included by COMSAR 9 in the terms of reference of the Correspondence Group. In addition, the Sub-Committee also noted that the Correspondence Group, in its work, had taken into account the salient decisions of MSC 80.

Discussion of individual tasks

10.15 The Sub-Committee considered the individual tasks detailed in document COMSAR 10/10 in the order as set out below.

Task 8: System architectures¹

10.16 The Sub-Committee noted that the Group, following extensive discussions and taking into account the related decisions of the Committee and the proposals of the Correspondence Group,

¹ The titles of each task are those used in the report of the Correspondence Group.

had developed and agreed an LRIT system architecture which consisted, broadly speaking, of a number of LRIT Data Centres (National, Regional, Co-operative, or International) which interface and exchange information with each other through an International LRIT Data Exchange and which provide LRIT information to the LRIT Data Users (Contracting Governments and Search and rescue services) who opt to use their services. The Sub-Committee agreed with the LRIT system which was proposed by the Group and which is shown in Figure 1 of the draft Performance standards and functional requirements for the long-range identification and tracking of ships (the draft Performance Standard) which also outlines the links between the various parts.

10.17 The Sub-Committee agreed that the main functions of an LRIT Data Centre should be:

- .1 to collect and archive LRIT information transmitted by the ships of Administrations which have selected that centre;
- .2 to provide, upon request, to their LRIT Data Users the LRIT information, they are entitled to receive, which has been collected and archived by the centre;
- .3 to obtain, when required, the LRIT information from the other LRIT Data Centres through the International LRIT Data Exchange; and
- .4 to execute or relay, when necessary, requests for the transmission of LRIT information on demand (i.e. requests for polling or transmission of information at interval other than the preset one).

10.18 The Sub-Committee agreed that each Contracting Government should instruct the ships entitled to fly their flag to transmit the LRIT information to the LRIT Data Centre selected by that Contracting Government. In this respect, the Sub-Committee agreed that Contracting Governments should select one of the following three alternatives:

- .1 if they are establishing a National, Regional or Co-operative LRIT Data Centre then the information should be transmitted to the centre they are establishing; or
- .2 if they are not participating in the establishment of a National, Regional or Co-operative LRIT Data Centre and they opt to make specific arrangements with an established National, Regional or Co-operative LRIT Data Centre, then the information should be transmitted to that centre; or
- .3 otherwise the information should be transmitted to the International LRIT Data Centre.

10.19 The Sub-Committee agreed, as a general rule, that:

- .1 Contracting Governments should only request the LRIT information to which they are entitled from the LRIT Data Centre to which the ships entitled to fly their flag transmit the LRIT information. Contracting Governments which have no ships entitled to fly their flag may receive LRIT information from any one of the LRIT Data Centres however, they should select the LRIT Data Centre from which they wish to receive the information; and
- .2 Search and rescue services should only receive LRIT information from the LRIT Data Centre, which is used by the Contracting Government where they are located.

10.20 The Sub-Committee agreed that the International LRIT Data Exchange should be a message handling service providing the mechanism for the exchange of LRIT information amongst the LRIT Data Centres and that it should not store or archive any LRIT information. In addition, the International LRIT Data Exchange should not provide LRIT information directly to any of the LRIT Data Users. The International LRIT Data Exchange should archive journals of LRIT information message handling data so as to provide a complete record between two consecutive annual audits of its performance.

10.21 The Sub-Committee agreed that the LRIT system architecture:

- .1 allowed the integration of National, Regional and Co-operative Vessel Monitoring Systems into the LRIT system as LRIT Data Centres without adversely affecting their performance of other functions (e.g., the collection from ships of additional information);
- .2 did not prevent Administrations from obtaining LRIT information directly from the National, Regional and Co-operative Vessel Monitoring Systems they may be associated with;
- .3 allowed National, Regional and Co-operative LRIT Data Centres to provide LRIT information to Contracting Governments other than those that have established them;
- .4 did not allow LRIT Data Users to obtain LRIT information directly from ships;
- .5 did not allow LRIT Data Centres to exchange directly LRIT information amongst themselves; and
- .6 allowed for varying the intervals of transmission of the LRIT information.

10.22 The Sub-Committee agreed that the proposed LRIT system architecture was consistent with the substance of the decisions of the Committee thus far and that it provided the desired degree of flexibility and adaptability for the initial establishment and evolution of the LRIT system.

Task 1: LRIT international database

10.23 The Sub-Committee agreed that each of the LRIT Data Centres' databases should have back up systems. These should be separated functionally and, where possible, geographically, and allow for switch over from the primary system to back-up as quickly as possible.

10.24 The Sub-Committee agreed, in the light of the agreed LRIT system architecture, that there was no need to establish a single LRIT international database (other than that of the International LRIT Data Centre).

Task 2: Data security

10.25 The Sub-Committee noted that the Group had included appropriate provisions to address the issue of data security in various parts of the draft Performance standard.

Task 3: Requesting LRIT information directly from an LRIT Tracking Service

10.26 The Sub-Committee agreed that the envisaged LRIT system architecture does not allow the shipborne LRIT information transmission equipment to transmit the required LRIT

information directly to any one of the LRIT Data Users. However, in the case of National, Regional or Co-operative LRIT Data Centres forming part of National, Regional or Co-operative Vessel Monitoring Systems, the Sub-Committee agreed that the shipborne equipment may be used to transmit also other required information.

Task 4: Archiving LRIT information

10.27 The Sub-Committee agreed that each LRIT Data Centre should archive the LRIT information transmitted to it from ships for at least one year and until such time as the Committee reviews and accepts the annual report of the audit of its performance by the LRIT Co-ordinator. However, LRIT Data Centres should archive the LRIT information transmitted to them so as to provide a complete record between two consecutive annual audits of their performance.

10.28 The Sub-Committee agreed that there was no need to archive LRIT information for ships' last ten calls at port facilities. In this respect, the Sub-Committee noted that such a requirement would add further degrees of complexity which would have an impact on the cost of providing LRIT information to LRIT Data Users.

10.29 The Sub-Committee also agreed with the specified, in the draft Performance standard, minimum periods of time for the retrieval and forwarding of already archived LRIT information.

Task 5: Destruction of archived LRIT material

10.30 The Sub-Committee agreed that there was no need to develop protocols for the destruction of LRIT information archived by the LRIT Data Centres and, as a result, that it was not necessary to include such provisions in the draft Performance standard.

10.31 The Sub-Committee recalled that each LRIT Data User was responsible for protection of the received LRIT information from unauthorized access or disclosure and agreed, as a result, that the destruction of LRIT information provided to each LRIT Data User was the responsibility of each user. As a result, the Sub-Committee also agreed that it was not necessary to include, in the draft Performance standard, such provisions.

Task 6: LRIT information latency

10.32 The Sub-Committee agreed with the proposals of the Group in relation to the criteria for latency; the formula for calculating the quality of service; and the associated criteria for quality of service which should be met by the LRIT system and which should be used in assessing the performance of the system and of those who provide services (i.e. the LRIT Data Centres and the International LRIT Data Exchange).

Task 7: LRIT requirements in SOLAS or performance standards

10.33 The Sub-Committee noted that the Group had avoided including in the draft Performance standard any provisions which were contained in the proposed draft SOLAS regulation on LRIT² and agreed that the draft Performance standard should be always read in conjunction with the salient provisions of SOLAS.

² The expression "proposed draft SOLAS regulation on LRIT" when used in this report means the proposed draft SOLAS regulation on LRIT set out in the annex to document MSC 81/3/5 (United Kingdom).

Task 9: Variable LRIT reporting rates

10.34 The Sub-Committee noted that the Group had extensively discussed the frequency of pre-scheduled transmissions of LRIT information by ships and agreed, taking into account the recommendations of the Group that, as a minimum, each ship should automatically transmit LRIT information at 6 hour intervals.

10.35 In this respect, the Sub-Committee noted that, if the frequency of pre-scheduled transmission of LRIT information was less than one transmission every 6 hours, this would compel Contracting Governments to set longer distances off their coast within which they might wish to seek to receive LRIT information in order to offset the likely distance a ship might travel (and thus coming closer to, or even enter into, the area within which LRIT information might be sought) during the period between two consecutive pre-scheduled transmissions of LRIT information at a lower frequency.

In addition, the Sub-Committee also noted that setting a lower frequency (than once every 6 hours) for pre-scheduled transmissions of LRIT information might compel Contracting Governments to either seek the transmission of polling commands to ships, or to seek the remote configuration of the shipborne equipment to transmit information at more frequent intervals.

Thus, the Sub-Committee concurred with the view of the Group that it was essential to optimize the setting of the shipborne equipment to automatically transmit LRIT information at pre-scheduled intervals which would compel the least number of Contracting Governments to make requests for changes in the transmitting intervals.

10.36 The Sub-Committee acknowledged the fact that in the case of ships on transoceanic voyages, pre-scheduled transmissions of LRIT information at 6 hour intervals might not be warranted. However, taking into account the potential uses of LRIT information for search and rescue purposes and the likely safety benefits for the ships and for those on board, the Sub-Committee agreed with the Group, on balance, that the aforesaid transmission interval should be upheld.

10.37 The Sub-Committee noted that, during the consideration of the issue within the Group, a number of delegations did not share the views of the Group in their entirety and for them the costs of the frequent pre-scheduled transmission of LRIT information from ship would also need to be taken into account when establishing the optimum transmission interval. In this respect a number of delegations suggested 12 or 24 hour intervals in order to reduce cost implications.

10.38 In this respect, the Sub-Committee also noted that only those Contracting Governments requesting and receiving LRIT information would pay for that information. A Contracting Government requesting LRIT information once per day would only be required to pay for this information once per day, irrespective of the intervals of pre-scheduled transmission of LRIT information. The cost of the “unwanted” LRIT information received by each LRIT Data Centre would need to be absorbed into the system and factored as an overhead into the fees to be charged.

10.39 The Sub-Committee also agreed with the inclusion in the draft Performance standard of provisions which require the shipborne equipment to be capable of automatically transmitting LRIT information at pre-scheduled intervals, following receipt of polling commands and when configured remotely to transmit LRIT information at variable intervals.

Task 10: LRIT Data Centre list of ships

10.40 The Sub-Committee agreed that for the LRIT system to function each LRIT Data Centre needed to know (and should be provided by the Administration which decided to use its services) the names and other salient particulars of the ships which were required to transmit LRIT information to that centre. The Sub-Committee also agreed that each Administration would also need to advise promptly the LRIT Data Centre if changes to the information it has provided occur (e.g., on change of flag).

10.41 The Sub-Committee agreed that Contracting Governments should co-operate with the LRIT Data Centres (irrespective of whether they have decided to use the services of a particular centre) with a view of resolving any difficulties or uncertainties in relation to any of the information they have provided or in relation to establishing which flag a particular ship is entitled to fly.

10.42 The Sub-Committee agreed that Administrations should provide the required information to the LRIT Data Centre they will be selecting, as soon as possible (irrespective of the date of entry into force of the proposed SOLAS amendments) so as to enable the establishment and testing of the LRIT system.

Task 11: Additional LRIT information

10.43 The Sub-Committee agreed that the envisaged LRIT system architecture and proposed draft Performance standards for the shipborne equipment ensured that ships would not be required to transmit any additional information to the designated LRIT Data Centre and that the transmission of LRIT information would not require any intervention by shipboard personnel.

10.44 The Sub-Committee recalled the decisions of MSC 80 (MSC 80/24, paragraph 5.97) on the transmission by a ship, to an LRIT Data Centre, of a notice that the ship is proceeding to a particular port or place, so as to enable the LRIT Data Centre to provide the Contracting Government concerned with the LRIT information it is entitled to. The Sub-Committee agreed that ships should only be required to transmit advance notice of arrival to Contracting Governments which have promulgated such a requirement. It would be then up to the Contracting Government concerned to decide whether it wished to receive LRIT information transmitted by a particular ship and if so, the Contracting Government should inform the related LRIT Data Centre together with the name and the IMO Ship identification number of the ship.

10.45 The Sub-Committee agreed that an annual review of the performance of the LRIT system should be able to determine appropriate use of the LRIT system.

Task 12: RCC use of LRIT information for SAR

10.46 The Sub-Committee agreed that Search and rescue services should be able to specify the geographic area for which they are seeking the provision of LRIT information. The LRIT Data Centre should provide to the Search and rescue service the requested LRIT information irrespective of the location of the area.

10.47 The Sub-Committee noted that Group had discussed whether the right of Search and rescue services to receive LRIT information free of charge should be limited to the information already available at the LRIT Data Centres. In the light of the functions the Search and rescue services perform, the Group agreed that the Search and rescue services should be able to seek the provision of current LRIT information. The Sub-Committee noted that the Group had been

unable to decide whether on-demand reports should also be made available free of charge, in view of the additional cost LRIT Data Centres might incur when providing LRIT information on-demand, and it had agreed to invite the Sub-Committee to bring to the attention of the Committee this issue for its consideration. The Sub-Committee agreed to bring this issue to the attention of the Committee and, on the proposal of the Chairman, agreed also to recommend that Search and rescue services should be able to obtain on-demand reports free of charge.

10.48 The Sub-Committee agreed that Search and rescue services should be required to co-operate and provide information to the LRIT Co-ordinator to enable the holistic review of the performance of the LRIT system. In addition, such a review should be able to determine appropriate use of the system by Search and rescue services.

Task 13: Cost of LRIT information vs. available technologies

10.49 The Sub-Committee agreed that the LRIT system as developed allowed the use of a variety of technologies in an optimal and economic manner.

10.50 The Sub-Committee agreed with the view of the Group that, at this stage, it was not practically possible to predict with reasonable accuracy the costs to Contracting Governments seeking to receive LRIT information. The Sub-Committee noted that the Correspondence Group in its report (COMSAR 10/10, annex, task 13) made references to various likely charges, *inter alia*, to \$1.00 per ship per day; to one HF-based communications provider offering its own version of LRIT for approximately \$6.00 per ship per month (with an updated position every two hours); and that one Contracting Government had estimated that LRIT information could be obtained using an ASP at a “fleet-wide” cost of \$0.003 per GT or approximately \$0.25 per report.

Task 14: LRIT reporting parameters

10.51 The Sub-Committee, taking into account the envisaged LRIT system architecture and the details included in the draft Performance standard, agreed with the view of the Group that there was no need to include in the draft Performance standard any of the issues discussed by the Correspondence Group under this task.

Duties and functions of the LRIT Co-ordinator

10.52 The Sub-Committee agreed that the LRIT Co-ordinator should be designated by the Committee. The Sub-Committee agreed that the LRIT Co-ordinator should:

- .1 assist with the initial establishment of the International LRIT Data Centre and the International LRIT Data Exchange and with the development testing of the LRIT system;
- .2 perform an administrative role, as defined by the Organization, during the operation of the LRIT system; and
- .3 review, audit and report on the performance of the LRIT system to the Committee.

Issues raised in paragraphs 1 to 8 of annex 1 to MSC/ISWG/LRIT 1/3/4

10.53 The Sub-Committee recalled that the MSC/ISWG/LRIT, when considering the issues raised in paragraphs 1 to 8 of annex 1 to document MSC/ISWG/LRIT 1/3/4 (Russian Federation) concluded (MSC 81/5/1, paragraph 62) that the issues raised should be considered by the

Sub-Committee which was developing the technical aspects of the LRIT system and, in this respect, noted that the Group had taken into account the basic principle approaches presented by the Russian Federation (MSC/ISWG/LRIT 1/3/4, annex 1, paragraphs 1 to 8).

The proposed draft SOLAS amendments on LRIT of ships

10.54 The Sub-Committee noted that the proposed draft SOLAS regulation on LRIT required Contracting Governments to specify and communicate to the Organization the distance from their coast; and/or the period of time prior to the expected time of arrival of a ship in a port facility or a place under their jurisdiction during which they may seek to receive the LRIT information they may be entitled to.

10.55 The Sub-Committee agreed that as ships were not required to transmit their speed, the use of “the period of time prior to the expected arrival of ship” as a criterion for providing the LRIT information to a Contracting Government presents practical difficulties in its implementation by the LRIT Data Centres. The Sub-Committee noted that, as a result, the Group had developed alternative proposals in this respect which retained the original philosophy of the Committee whilst eliminating the practical difficulties associated with the related elements of the proposed draft SOLAS regulation on LRIT. The Sub-Committee noted that the alternative proposals had been included in the description of the elements LRIT Data Distribution Plan and in the issues which need to be addressed by MSC 81. The Sub-Committee agreed to invite the Committee to reconsider this aspect of the proposed draft SOLAS regulation on LRIT.

10.56 The Sub-Committee agreed that Contracting Governments requiring LRIT information on the basis of time of arrival would need to make individual requests for information on specific ships, since such reports could not be provided by the LRIT system on an automated basis.

Date of entry into force

10.57 The Sub-Committee noted the view of the Group that, in determining the definite date of entry into force, it would be necessary to consider, *inter alia*, the establishment of LRIT Data Centres and the International LRIT Data Exchange as well as the establishment and testing of associated interface links. Also, Administrations would need to provide to LRIT Data Centre(s) the required information to enable the establishment and testing of the LRIT system.

Performance standards and functional requirements for the LRIT system

10.58 The Sub-Committee endorsed the draft Performance standards proposed by the Group and agreed to forward it to the Committee for adoption, as set out in annex 17.

Other issues

10.59 The Sub-Committee noted that the Group during its deliberations had identified a number of issues which needed to be dealt with in order to ensure the establishment and the function of the LRIT system and which were not addressed in the proposed draft SOLAS amendments on LRIT and which were not matters which should be included in the draft Performance standards.

10.60 The Sub-Committee endorsed the proposals of the Group in this respect and agreed to bring them to the attention of the Committee, as set out in annex 18, for its consideration.

Ad Hoc LRIT Engineering Task Force

10.61 The Sub-Committee agreed that a number of technical specifications and other detailed technical requirements need to be developed for the LRIT system to be established and function in a smooth and efficient manner.

10.62 The Sub-Committee agreed to invite the Committee to establish an *Ad Hoc* LRIT Engineering Task Force with the terms of reference set out in annex 19 for the purpose of developing the required technical specifications.

10.63 The Sub-Committee agreed to recommend to the Committee that the *Ad Hoc* LRIT Engineering Task Force should be instructed to complete its assignment as soon as possible, preferably with a view to adoption of the required technical specifications by MSC 82.

10.64 The Sub-Committee agreed that although the various detailed technical specifications were essential for the functioning of the LRIT system, these might be approved or adopted by the Committee at a later stage and need not be before the Committee when considering the proposed draft SOLAS amendments on LRIT and the draft Performance standards with a view to adoption. The Sub-Committee agreed that the draft Performance standards foresee that these issues will be agreed between the various parties establishing the LRIT system. The Sub-Committee agreed that their absence should not be used as a reason for delaying the adoption of the proposed draft SOLAS amendments on LRIT or the draft Performance standards. The Sub-Committee also agreed that it would be more appropriate to develop these once there was certainty of the ultimate LRIT system architecture and the various elements of the LRIT system.

Statement

10.65 The delegation of Turkey stated that Turkey's position regarding the United Nations Convention on the Law of the Sea remained unchanged within the context of the Long-range identification and tracking of ships.

Instructions to the Secretariat

10.66 The Sub-Committee noted that the draft Performance standard foresaw that the Organization should establish and maintain the LRIT Data Distribution Plan and that it would have to assume a number of other functions in relation to the LRIT system. The Sub-Committee instructed the Secretariat to present to MSC 81 the proposed arrangements, the required needs and the work this implied for the Secretariat for consideration by the Committee.

OTHER MATTERS

10.67 The Sub-Committee did not discuss any other issues, apart from matters related to LRIT of ships, under this agenda item.

10.68 The Sub-Committee agreed to recommend to the Committee the deletion from its work programme of the item on "Measures to enhance maritime security" on the understanding that, if the need arises, the Committee would instruct the Sub-Committee accordingly as the specific circumstances may dictate (see also paragraph 13.5.1.1).

11 PASSENGER SHIP SAFETY

GENERAL

11.1 The Sub-Committee recalled that MSC 77 had approved MSC/Circ.1079 on the Guidelines for preparing plans for co-operation between search and rescue services and passenger ships (in accordance with SOLAS regulation V/7/3), combining and revoking MSC/Circ.1000 and MSC/Circ.1041, and concurred with the opinion of COMSAR 7 that there was no need to amend or adjust the rescue co-operation plans developed in accordance with MSC/Circ.1000 and MSC/Circ.1041 as reflected in MSC/Circ.1079.

11.2 The Sub-Committee also recalled that MSC 79 had agreed that more time was necessary to resolve the matters related to the “time to rescue” and had instructed the COMSAR Sub-Committee to prepare a “time to rescue” time frame and related criteria and advise MSC 81 accordingly.

11.3 The Sub-Committee further recalled that COMSAR 9, due to the huge amount of tasks, as indicated in the work plan contained in annex 3 to document MSC 79/WP.13, had established a Correspondence Group, under the co-ordination of the United Kingdom, to consider the tasks which had not been finalized at COMSAR 9.

11.4 The Sub-Committee noted the decisions made by MSC 80, in particular:

- .1 in considering the definition of the expression “casualty threshold”, the Committee had approved the following definition for clarification purposes:

“*Casualty threshold* is the amount of damage a ship is able to withstand, according to the design basis, and still safely return to port”;

- .2 in considering matters related to the “time to remain habitable” the Committee had reaffirmed that the original intent of the above timeframe was to ensure that, in cases where casualty threshold for return to port is exceeded, there will be sufficient time for the safe and orderly abandonment of the ship. In this regard, the Committee was of the view that the wording “time for orderly evacuation and abandonment” would better suit the above concept instead of the original wording “time to remain habitable”, and consequently approved a definition for the new term:

“*Time for orderly evacuation and abandonment* is the time, beginning when the casualty threshold is exceeded until all persons have safely abandoned the ship, in which the ship remains viable for this purpose.”;

- .3 in considering the 3-hour timeframe for habitability agreed at MSC 78, the Committee had reiterated its previous decision that future passenger ships should be designed to meet the safe return to port concept after a casualty and that relevant casualty thresholds should be developed. However, in the event a casualty exceeds the above threshold, the Committee had endorsed the group’s recommendation that an additional casualty scenario, for design purposes, should be developed by the FP and SLF Sub-Committees to support the concept that the ship will remain viable for at least 3 hours to allow for a safe and orderly evacuation and abandonment; and

- .4 the Committee had approved the revised work plan, as set out in the annex to document MSC 80/WP.11, as modified by MSC 80/WP.11/Corr.1, and instructed the Sub-Committee to take appropriate action.

11.5 In considering documents COMSAR 10/11 and COMSAR 10/11/5 by the Secretariat, the Sub-Committee noted that:

- .1 FP 50 had developed draft amendments to SOLAS chapter II-2, as set out in annex 1 to document FP 50/21, for on-board safety centres and fixed fire detection and alarm systems, safe return to port, time for orderly evacuation and abandonment and prevention of fire for submission to MSC 81 for finalization with a view to approval and subsequent adoption; and
- .2 STW 37 had noted that the matter relating to training of SAR personnel and seafarers with recovery responsibilities could only be considered after COMSAR 10 had discussed the issue as the co-ordinating Sub-Committee. Therefore, STW 37 had agreed to invite MSC 81 to extend the target completion date for the item to 2007.

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

- .1 DE 49 had agreed, in principle, to draft functional requirements in SOLAS chapter III for means of rescue prepared by the COMSAR Correspondence Group on Passenger Ship Safety, as indicated in paragraph 5.58 to document COMSAR 10/11/1, bearing in mind that COMSAR 10 still had to consider the above proposal in detail and, as such, the proposed recovery rates were not yet fixed; and
- .2 in considering the rates of recovery specified in the aforementioned paragraph 5.58, DE 49 had endorsed the group's views that the recovery rate should take into account the capabilities of existing recovery and rescue systems and that testing and demonstration criteria should be developed by the DE Sub-Committee to support paragraph 5.58 of document COMSAR 10/11/1, if approved by COMSAR 10 and MSC 81.

11.7 The Sub-Committee briefly discussed documents submitted by the United Kingdom as the Co-ordinator of the Correspondence Group (COMSAR 10/11/1) and the United States (COMSAR 10/11/2, COMSAR 10/11/3 and COMSAR 10/11/4) and decided to refer the issue to the SAR Working Group for detailed consideration. However, before doing so, the Sub-Committee took in-principle decisions in Plenary on tasks 2, 3 and 4, as follows:

- .1 task 2: the Sub-Committee agreed that the draft "Guidelines on how the SAR service may best provide on-board support as an aid to incident containment" should be finalized and also agreed with the United States that on-board support should be treated as "Emergency Assistance other than Search and Rescue" and the IAMSAR Manual should be amended accordingly; and
- .2 tasks 3 and 4: the Sub-Committee noted the view of the Correspondence Group on the criteria for what constitutes an "area remote from SAR facilities", that such areas should be determined by States and declared by IMO and noted the view of the United States that the guidance for passenger ships operating in remote areas, in the form of an MSC circular, should be developed separately from MSC/Circ.1079, which would be promulgating tasks 3, 4, and 10.

11.8 The Sub-Committee subsequently instructed the SAR Working Group, taking into account the comments and decisions made at Plenary, to:

- .1 consider documents COMSAR 10/11/1, COMSAR 10/11/2, COMSAR 10/11/3 and COMSAR 10/11/4, using, if necessary, COMSAR 10/11 and COMSAR 11/5 as background documents;
- .2 finalize the draft MSC circular on Guide on Recovery Techniques using the draft contained at annex 2 to document COMSAR 10/11/1;
- .3 finalize the draft MSC circular on Guidelines on how the SAR services may best provide on-board support as an aid to incident containment using the draft text contained at annex 3 to document COMSAR 10/11/1 or/and

finalize the draft amendments to the IAMSAR Manual to incorporate the on-board support issue into Chapter 7 of Volume II, “Emergency Assistance other than Search and Rescue”, using the annex to document COMSAR 10/11/3;
- .4 finalize a criteria for determining what constitutes “an area remote from SAR facilities”;
- .5 finalize contingency planning guidelines for co-operation between companies operating passenger ships in areas remote from SAR facilities and relevant SAR services, taking into account the definition for place of safety, as a draft MSC circular on “Guidance on operation of passenger ships in remote areas”, given in the annex to document COMSAR 10/11/2;
- .6 prepare the draft text of functional requirements for SOLAS ships on systems used to recover persons from survival craft and the water, with a view to forwarding them to the MSC 81 [and DE 50] for further consideration and approval as a replacement for SOLAS regulation III/26.4;
- .7 discuss task 6 and the outcome of the correspondence group with the GMDSS Working Group and advise Plenary accordingly;
- .8 finalize a draft MSC circular on the “Pocket guide to cold water survival” using the draft text contained in annexes 5 and 6 to document COMSAR 10/11/1 and decide whether there is a need for further consideration by the Working Group;
- .9 finalize a draft MSC circular on guidelines on training of SAR service personnel working in major incidents, using the draft text contained in annex 8 to document COMSAR 10/11/1;
- .10 prepare a list of advices that need to be addressed to Administrations and the STW Sub-Committee with regard to matters relating to the training of SAR personnel and seafarers with recovery responsibilities;
- .11 finalize “time to rescue” criteria, taking into account the five day “time to recover” determination and the definitions for “place of safety” and “time to rescue” agreed by MSC 79; and

- .12 prepare any recommendations or proposals with regard to the report of the correspondence group; for consideration at Plenary.

Report of the Working Group

11.9 In considering the parts of the SAR Working Group report (COMSAR 10/WP.5/Add.1), the Sub-Committee took action as summarized hereunder.

GUIDE ON RECOVERY TECHNIQUES

11.10 The Sub-Committee, having noted that the group had made minor modifications to the draft guidance on recovery techniques contained in annex 2 to document COMSAR 10/11/1, agreed to the draft MSC circular on Guide to recovery techniques, as set out in annex 20, for submission to the Committee for consideration and action as appropriate. The Sub-Committee noted the group's view that the Guide should be disseminated as widely as possible with a view to getting the information to seafarers.

11.11 Having agreed to the aforementioned draft circular, the Sub-Committee invited the Committee to instruct the STW Sub-Committee to review relevant training requirements accordingly.

EXTERNAL SUPPORT PROVIDED TO SHIPS BY SAR AUTHORITIES

11.12 In considering the draft guidelines on how the SAR services may best provide on-board support as an aid to incident containment, the Sub-Committee noted that the group had agreed to replace the word "on-board" by "external" to avoid confusion and harmonized the lists of services proposed in documents COMSAR 10/11/1 and COMSAR 10/11/3. Having noted the modifications made by the group, the Sub-Committee agreed to the draft MSC circular on Guidelines on the provision of external support as an aid to incident containment for SAR Authorities and others concerned, as set out in annex 21, for submission to the Committee for consideration and action as appropriate.

DRAFT AMENDMENTS TO THE IAMSAR MANUAL

11.13 Having noted that the group had considered the draft amendments to the IAMSAR Manual set out in the annex to document COMSAR 10/11/3 with a view to incorporating the external support guidance into Volume II, chapter 7 (Emergency assistance other than search and rescue) and had made a number of modifications, the Sub-Committee agreed to the draft amendments to the IAMSAR Manual, as set out in annex 22, for submission to the Committee for consideration and action as appropriate.

CRITERIA FOR DETERMINING WHAT CONSTITUTES "AN AREA REMOTE FROM SAR FACILITIES"

11.14 The Sub-Committee, having noted that the group had reviewed in detail the criteria set out in annex 9 to document COMSAR 10/11/1 and had made significant modifications, agreed to the Criteria for what constitutes an area remote from SAR facilities, as set out in annex 23, for submission to the Committee for consideration and action as appropriate. In this regard, the Sub-Committee noted that the group, having agreed that a definition for such "remote areas" was unnecessary, had also considered the aforementioned criteria when addressing matters related to contingency planning (see paragraphs 11.15 and 11.16).

CONTINGENCY PLANNING FOR SHIPS OPERATING IN AREAS REMOTE FROM SAR SERVICES

11.15 The Sub-Committee noted that the group had an extensive debate on matters related to the operation of passenger ships in areas remote from SAR facilities, taking into account the draft text contained in annex 4 (paragraph 7) of document COMSAR 10/11/1, and agreed to delete the draft provision (draft paragraph 7.1) that requested SAR States to declare areas 'remote from SAR facilities' under their purview. In doing so, the Sub-Committee noted the group's view that the relevant provisions of the SOLAS and SAR Conventions clearly delineate the lines of responsibility for such operations and that the criteria contained in the draft guidelines would assist those responsible for preparing appropriate contingency plans.

11.16 Having noted the modifications made by the group, the Sub-Committee agreed to the draft MSC circular on Enhanced contingency planning guidance for passenger ships operating in areas remote from SAR facilities, as set out in annex 24, for submission to the Committee for consideration and action as appropriate.

RECOVERING PERSONS FROM SURVIVAL CRAFT AND THE WATER

11.17 The Sub-Committee noted that the group had an extensive debate on the draft functional requirements to SOLAS chapter III for means of rescue, as set out in paragraph 5.58 of document COMSAR 10/11/1, taking into account that DE 49 had agreed, in principle, to the aforementioned draft requirements, bearing in mind that COMSAR 10 still has to consider the above proposal in detail.

11.18 Having noted the views expressed by the group, the Sub-Committee agreed to the draft amendments to SOLAS chapter III on recovery arrangements for rescuing persons, as set out in annex 25, for submission to the Committee for consideration and action as appropriate.

11.19 In agreeing to the above draft amendments to SOLAS chapter III, the Sub-Committee invited the Committee to instruct:

- .1 the DE Sub-Committee to prepare relevant guidance to support the new requirements (i.e. testing, approval, implementation, etc.); and
- .2 the STW Sub-Committee to prepare relevant training criteria and model courses, as appropriate.

11.20 The delegations of Norway and Japan expressed the view that the draft SOLAS provisions on "recovery systems" were unclear and paragraphs 1 and 3 seemed to be in conflict. Furthermore, it should not be up to each Administration to decide how many such systems are required, and paragraph 3 should therefore be kept in square brackets. Additionally, the complexity, cost and the manpower needed to operate such systems are not known until performance standards for such systems have been adopted. The task of the DE Sub-Committee should therefore be expanded to include the development of such standards. In view of this, the delegations of Norway and Japan recommended that the MSC should defer approval of the draft SOLAS provisions until the DE Sub-Committee had completed this work.

FITTING OF MARITIME AND AIR BAND RADIO EQUIPMENT

11.21 The Sub-Committee noted that the group, after having consulted with the GMDSS Working Group, had agreed with the ICAO/IMO Joint Working Group's recommendation to encourage voluntary fitting of air band radio equipment, especially on marine SAR units and

government vessels, but also on SOLAS ships operating in areas where working with SAR aircraft not fitted with maritime band radio equipment is known to be a possibility. The group also agreed that RCCs should consider communications between SAR aircraft and surface units in their SAR Regions and plan to ensure effective communications even if the aircraft were not fitted with maritime band radio equipment.

11.22 Taking into account the above information, the Sub-Committee instructed the ICAO/IMO Joint Working Group to prepare relevant amendments to the IAMSAR Manual.

GUIDE TO COLD WATER SURVIVAL

11.23 Having noted that the group had considered matters related to cold water survival, taking into account annexes 5 and 6 to document COMSAR 10/11/1, and had made a number of modifications to annex 5 of the above document, the Sub-Committee agreed to the draft MSC circular on Guide to cold water survival, as set out in annex 26, for submission to the Committee for consideration and action as appropriate.

11.24 In agreeing to the above, the Sub-Committee noted the group's view that the short check list on cold water survival contained in the Guide would be useful if produced in a water resistant format for use by seafarers. To this end, the Committee was invited to instruct the STW Sub-Committee to review the relevant requirements for first aid training for seafarers to ensure that the main provisions of the revised guidance on the prevention and treatment of hypothermia are included.

TRAINING OF SAR SERVICE PERSONNEL

11.25 The Sub-Committee, having noted that the group considered the draft guidance on training of SAR service personnel set out in annex 8 to document COMSAR 10/11/1 and had made only minor editorial modifications, agreed to the draft MSC circular on Guidelines on the training of SAR service personnel working in major incidents, as set out in annex 27, for submission to the Committee for consideration and action as appropriate.

CRITERIA FOR "TIME TO RESCUE"

11.26 Having noted that the group had considered the criteria set out in annex 10 to document COMSAR 10/11/1, the Sub-Committee agreed to forward the Criteria for "time to rescue", as set out in annex 28, to the Committee for consideration and action as appropriate.

WORK PROGRAMME OF THE SUB-COMMITTEE

11.27 Having considered the above issues, the Sub-Committee invited the Committee to delete the work programme item "Passenger ship safety" from its work programme since the work on this matter has been concluded.

12 REVISION OF THE PERFORMANCE STANDARDS FOR SART

General

12.1 The Sub-Committee noted that, following consideration of document MSC 78/24/4 (Japan) proposing, in order to improve effective search and rescue operation, to revise the Performance standards for SART (resolution A.802(19)), taking into account the SART using a signal of circular polarization; and document MSC 78/24/19 (Norway) proposing, when revising

Performance standards, to also include therein, provisions for the AIS search and rescue transponder (one for 9 GHz SART and one for AIS-SART) and, if necessary, to develop appropriate amendments to SOLAS chapters III and IV, MSC 78 had decided to:

- .1 include, in the COMSAR Sub-Committee's work programme, a high priority item on "Revision of the Performance standards for SART", with two sessions needed to complete the item; and
- .2 instruct the DE and NAV Sub-Committees to contribute, as necessary, when requested by the COMSAR Sub-Committee (MSC 78/26, paragraph 24.26).

12.2 The Sub-Committee also noted that COMSAR 9 had proposed to include this agenda item in the provisional agenda for COMSAR 10 and MSC 80 had subsequently agreed to the proposal.

12.3 Having considered in general documents COMSAR 10/12 (Canada), COMSAR 10/12/1 (United States), COMSAR 10/12/2 and COMSAR 10/12/3 (Norway) and COMSAR 10/12/4 and COMSAR 10/INF.9 (Japan) concerning the revision of performance standards for 9 GHz SART and new standards for AIS-SART, the Sub-Committee instructed the GMDSS Working Group, taking into account decisions/comments made at Plenary, to:

- .1 consider the above documents in detail;
- .2 review resolution A.802(19) with a view to including/combining AIS technology;
- .3 prepare preliminary draft appropriate amendments to SOLAS chapters III and IV; and
- .4 provide any recommendations or proposals on the issue,

for consideration at Plenary.

Report of the Working Group

12.4 In considering the relevant parts of the GMDSS Working Group report (COMSAR 10/WP.4, paragraphs 7.1 to 7.8), the Sub-Committee took action as summarized hereunder.

12.5 The Sub-Committee noted that the Working Group had considered COMSAR 10/12 (Canada), COMSAR 10/12/1 (United States), COMSAR 10/12/2 and COMSAR 10/12/3 (Norway) on review of resolution A.802(19) and agreed to take the option of including/combining AIS technology in preference to the VHF EPIRB technology. The Sub-Committee endorsed the preliminary draft performance standards for survival craft AIS Search and Rescue Transmitter (AIS-SART) to supplement the existing SART performance standards, given at annex 29.

12.6 The Sub-Committee concurred with the opinion of the Working Group that the NAV Sub-Committee should also be asked to take account of the relevant draft performance standards for survival craft AIS Search and Rescue Transmitter (AIS-SART) developed by COMSAR 10.

12.7 The Sub-Committee further agreed to the revision of resolution A.802(19) on performance standards for Search and Rescue Transponder (SART) as proposed by Japan (COMSAR 10/12/4

and COMSAR 10/INF.9), with respect to circular polarization and endorsed the draft amendments to performance standards for SART, given at annex 30.

12.8 The Sub-Committee approved two liaison statements, given at annexes 31 and 32, addressed to ITU Working Party 8B and IALA respectively requesting comments and the development of technical specifications for the preliminary draft performance standards for survival craft AIS Search and Rescue Transmitter (AIS-SART), which should be adopted in October 2007. The Sub-Committee instructed the Secretariat to convey the above liaison statements to WP.8B and IALA respectively. The Committee was invited to endorse the action taken.

12.9 The Sub-Committee invited Administrations to consider the proposed amendments to the resolution and provide information on performance and testing of AIS-SART to COMSAR 11 for further consideration.

12.10 The Sub-Committee endorsed the draft proposed amendments to SOLAS regulations III/6.2.2 and IV/7.1.3 to reflect the development of new AIS-SART performance standards, given at annex 33 for further consideration at COMSAR 11. In this connection, the Sub-Committee noted that it was important to ensure that the definitions of AIS Search and Rescue Transmitter (AIS-SART) and Search and Rescue (radar) Transponder (SART) were clear so as to avoid confusing two distinct technologies.

12.11 The Sub-Committee noted that the delegation of Norway had requested that the Secretariat be tasked to carefully review all IMO Conventions, Codes etc. e.g., the 2000 HSC Code, DSC Code, MODU Code which might have to also be amended in addition to the anticipated amendments to SOLAS chapters III and IV.

13 WORK PROGRAMME AND AGENDA FOR COMSAR 11

Terms of reference of the Sub-Committee

13.1 The Sub-Committee recalled that MSC 79 had instructed the Secretariat to revise the terms of reference of the sub-committees in consultation with their respective Chairmen, taking into account the points agreed by the 2004 Chairmen's Meeting (MSC 78/WP.9, paragraph 5), the views of MEPC 52, as well as its own views, and submit them to MSC 80 and, as a consequence, to the next Chairmen's Meeting, for final consideration and approval by that session of the Committee and by MEPC 53.

13.2 The Sub-Committee noted that, having considered the outcome of the 2005 Chairmen's meeting on these issues, (MSC 80/WP.3, paragraphs 21 to 25), MSC 80 and MEPC 53 had approved the revised terms of reference and had agreed that:

- .1 in compliance with the earlier recommendation of the Chairmen's meetings that the mandate to the sub-committees should include explicit references to marine environment issues (MSC 78/WP.9, paragraph 5.2), the phrase "*including the role of such measures in the protection of the marine environment*" should be inserted in an appropriate place in the terms of reference of all sub-committees; and
- .2 the sub-committees should periodically review their terms of reference to ensure that they accurately reflect the work being carried out.

The terms of reference of the Sub-Committee, as approved by the Committees, are set out in annex 34.

13.3 The Sub-Committee also noted that MSC 80 had endorsed the request to the Chairmen of the MSC and MEPC to examine the possibility of introducing flexible arrangements to facilitate the *ad hoc* assignment of certain work programme items among different sub-committees. In this connection, the Chairmen of the MSC and MEPC were requested to consider, for example, shifting the work on life-saving appliances, currently under the DE Sub-Committee, on a trial basis in 2006, to the FP or COMSAR Sub-Committees, as well as relevant environmental issues from the MEPC to the BLG Sub-Committee. This had in fact been done by MSC 80 transferring five agenda items from the DE Sub-Committee to FP 50.

Work programme and agenda for COMSAR 11

13.4 The Sub-Committee recalled that MSC 79, in considering the work programmes of the sub-committees and provisional agendas for their forthcoming sessions, had recalled that, at MSC 78, the Chairman, in addressing the Committee's method of work relating to the consideration of proposals for new work programme items, had clarified that the objective of the Committee when discussing these proposals was to decide, based upon justification provided by Member Governments in accordance with the Guidelines on the organization and method of work, whether the new item should or should not be included in the sub-committee's work programme. A decision to include a new item in a sub-committee's work programme did not mean that the Committee had agreed with the technical aspects of the proposal. If it was decided to include the item in a sub-committee's work programme, detailed consideration of the technical aspects of the proposal and the development of appropriate requirements and recommendations should be left to the sub-committee concerned.

13.5 Taking into account the progress made during the session and the provisions of the agenda management procedure contained in paragraphs 3.11 to 3.23 of the Guidelines on the organization and method of work (MSC/Circ.109 – MEPC/Circ.405), the Sub-Committee reviewed its work programme and agenda for its next session (COMSAR 10/WP.1) and prepared proposed revisions thereof for COMSAR 11. While doing so, the Sub-Committee agreed to invite the Committee to:

- .1 delete the following work programme items, as work on them has been completed:
 - .1.1 item H.3 – Measures to enhance maritime security;
 - .1.2 item H.4 – Review of the SPS Code;
 - .1.3 item H.6 – Passenger ship safety;
- .2 extend the target completion dates of the following work programme items:
 - .2.1 item 6.1 – Harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters, to 2007;
 - .2.2 item 6.4 – Medical assistance in SAR services, to 2007;
 - .2.3 item H.2 – Developments in maritime radiocommunication systems and technology, to 2007;
- .3 renumber the work programme items accordingly; and
- .4 approve the proposed revised work programme of the Sub-Committee together with the proposed revised target completion dates and other editorial changes.

13.6 The Committee was also invited to approve the proposed revised work programme of the Sub-Committee and provisional agenda for COMSAR 11, as set out in annex 35.

Arrangements for the next session

13.7 The Sub-Committee tentatively agreed to establish, at COMSAR 11, working and drafting groups on the following subjects:

- .1 search and rescue;
- .2 GMDSS operational, including MSI matters; and
- .3 technical matters.

13.8 The Sub-Committee agreed to establish a Joint IMO/IHO/WMO correspondence group on MSI services, due to report to COMSAR 11.

13.9 The Sub-Committee noted that its eleventh session had been tentatively scheduled to take place from 19 to 23 February 2007 at a venue to be confirmed in due course.

Urgent matters to be considered by MSC 81

13.10 The Sub-Committee, noting that, due to the close proximity between COMSAR 10 (March 2006) and MSC 81 (May 2006) and in accordance with the provisions of paragraph 4.9 of the Guidelines on the organization and method of work, the Committee should consider, at its eighty-first session, only urgent matters emanating from COMSAR 10, agreed that the following items should be urgent matters for consideration by MSC 81:

- .1 ITU World Radiocommunication Conference matters;
- .2 satellite services (Inmarsat and COSPAS-SARSAT);
- .3 revision of the IAMSAR Manual;
- .4 measures to enhance maritime security;
- .5 passenger ship safety;
- .6 matters related to tsunamis; and
- .7 work programme of the Sub-Committee and provisional agenda for COMSAR 11.

14 ELECTION OF CHAIRMAN AND VICE-CHAIRMAN FOR 2007

14.1 The Sub-Committee, being informed of its Chairman's decision to relinquish his office at the end of the current year, expressed deep appreciation to Mr. U. Hallberg for the outstanding contribution he had made over many years to the work of IMO and this Sub-Committee, particularly as chairman of the SAR Working Group; and wished him happiness in life and success in all his future career.

14.2 The Sub-Committee decided to postpone the election of the Chairman and Vice-Chairman for 2007 to the opening of the next session, COMSAR 11, in February 2007.

15 ANY OTHER BUSINESS

SIMPLIFIED VOYAGE DATA RECORDER (S-VDR)

15.1 The Sub-Committee considered document COMSAR 10/15 (IEC) and noted that a new standard IEC 61996-2: *Maritime navigation and radiocommunication equipment and systems – Shipborne voyage data recorder – Part 2: Simplified voyage data recorder (S-VDR), Performance requirements – Method of testing and required test results* had been developed and, after its final editorial approval, was scheduled for publication in April 2006 (see paragraph 5.17).

The new standard supports the performance requirements for an EPIRB and S-VDR capsule (resolution MSC.163(78)) to “be capable of transmitting an initial locating signal and further locating homing signal for at least 48 hours over a period of not less than 7 days/168 hours”.

TECHNICAL SURVEY OF AIS INSTALLATIONS

15.2 Having considered document COMSAR 10/15/1 (Norway) suggesting that resolution A.948(23) – Revised survey guidelines under the harmonized system of survey and certification, should be amended by including requirements for the technical inspection/measures of AIS in order to ensure that AIS is operating in accordance with the operational/technical standards required, the Sub-Committee noted that the FSI Sub-Committee was responsible for revising resolution A.948(23) and had a continuous agenda item on its work programme “Review of the survey guidelines under the HSSC (resolution A.948(23))”. FSI 14 was scheduled to be held from 5 to 9 June 2006.

15.3 It was also pointed out that AIS matters were under the scope of the NAV Sub-Committee, and, taking into account that AIS, as a device to be used for collision avoidance in connection with other navigational devices, such as radar, should be, as it is now, subject to survey and certification along with other equipment required under SOLAS chapter V.

15.4 However, after some discussion the Sub-Committee agreed in principle with the proposal that the inspections of AIS should be conducted by the radio inspectors without issuing any special certificates and recommended that an appropriate proposal should be submitted to the FSI and the NAV Sub-Committees in line with the existing Guidelines on the organization and method of work.

REPORT ON THE VIITH COMBINED ANTARCTIC NAVAL PATROL

15.5 In considering document COMSAR 10/INF.2 (Argentina and Chile), the Sub-Committee noted with appreciation the activities undertaken during the seventh Combined Antarctic Naval Patrol which took place from 1 December 2004 to 1 March 2005, in the area boarded in the south by the parallel 60° S and by the meridians 10° W and 131° W. The aim of this patrol was to enhance maritime safety and the protection of the marine environment on the Antarctic continent.

REVALIDATION OF GMDSS OPERATOR’S CERTIFICATE

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

- .1 MSC 80 had concurred with the recommendations of both STW 36 and COMSAR 9 and had added a corresponding new work programme item “Revalidation of GMDSS operator’s certificate” with a target completion date of 2007 and included it in the agenda for STW 37;

- .2 after a long discussion of the issue, STW 37 had agreed that there was a real skills problem associated with GMDSS operators and that the long-term solution could be addressed through standardization of equipment and operating procedures. In this context, STW 37 agreed to invite COMSAR 10 to include this in the IMO liaison statement to WRC 2007. As an immediate solution, the STW Sub-Committee prepared an MSC circular on promoting and verifying continued familiarization of GMDSS operators on board ships and invited the Committee to approve it; and
- .3 STW 37 had agreed, as the work thereon had been completed, to invite the Committee to delete this item from its work programme.

PLANNED SAR ACTIVITIES IN THE MEDITERRANEAN SEA

15.7 The delegation of Italy informed the Sub-Committee that an international exercise on emergencies at sea, with particular emphasis to SAR services and activities in the Mediterranean Sea, had been scheduled for 2007 (tentatively in May/June). The exercise was aimed at enhancing SAR co-operation amongst the Mediterranean Countries, in respect of IMO ruling as well as Regional agreements. The exercise would be followed by a workshop on the international co-operation and in particular on the development and enhancement of SAR agreements in the Mediterranean. In the next month, the Italian Coast Guard had arranged for an initial planning Conference on this issue and it went without saying that any possible technical assistance provided by IMO would be mostly welcomed. In this sense Italy would officially inform IMO about this intention.

WORKING METHODS FOR WORKING GROUPS DURING SUB-COMMITTEE SESSIONS

15.8 The delegation of the Russian Federation expressed the view that in accordance with the existing Guidelines on the Organization and method of work, working groups established by the Sub-Committee should not be allowed to organize any *ad hoc* groups to deal with different agenda items allocated to the working groups.

In responding to the view above, the Director, Maritime Safety Division, informed the Sub-Committee that the next session of the Chairmen's meeting will be held during MSC 81 and the point raised by the Russian Federation and the work method of a working group should be discussed at this session of the Chairmen's meeting.

EXPRESSIONS OF APPRECIATION

15.9 The Sub-Committee expressed appreciation to the following delegates and observers, who had recently relinquished their duties, retired or were transferred to, or were about to be transferred to, other duties 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 Eduardo Castro Rivas (Argentina), on return home;
- Captain Luis Fernando Resano (Brazil), on return home;
- Mr. Ron Miller (Canada), on transfer;
- Mr. Hu Jinglu (People's Republic of China), on return home;
- Commander Carlos Ríos Varela (Chile), on return home;
- Captain (HCG) Nikolaos Nesteroulis (Greece), on return home;
- Mr. Stein Isaksen (Norway), on retirement;
- Mr. Trygve Scheel (Norway), on retirement;
- Mr. Joaquín Carrasquedo Salerno (Panama), on return home;

- Mr. Matthew Lee (Singapore), on return home;
- Mr. Dan Lemon (United States), on retirement; and
- Mr. Youngso Kim (Secretariat), on return home.

16 ACTION REQUESTED OF THE COMMITTEE

16.1 The Maritime Safety Committee, at its eighty-first session, is invited to:

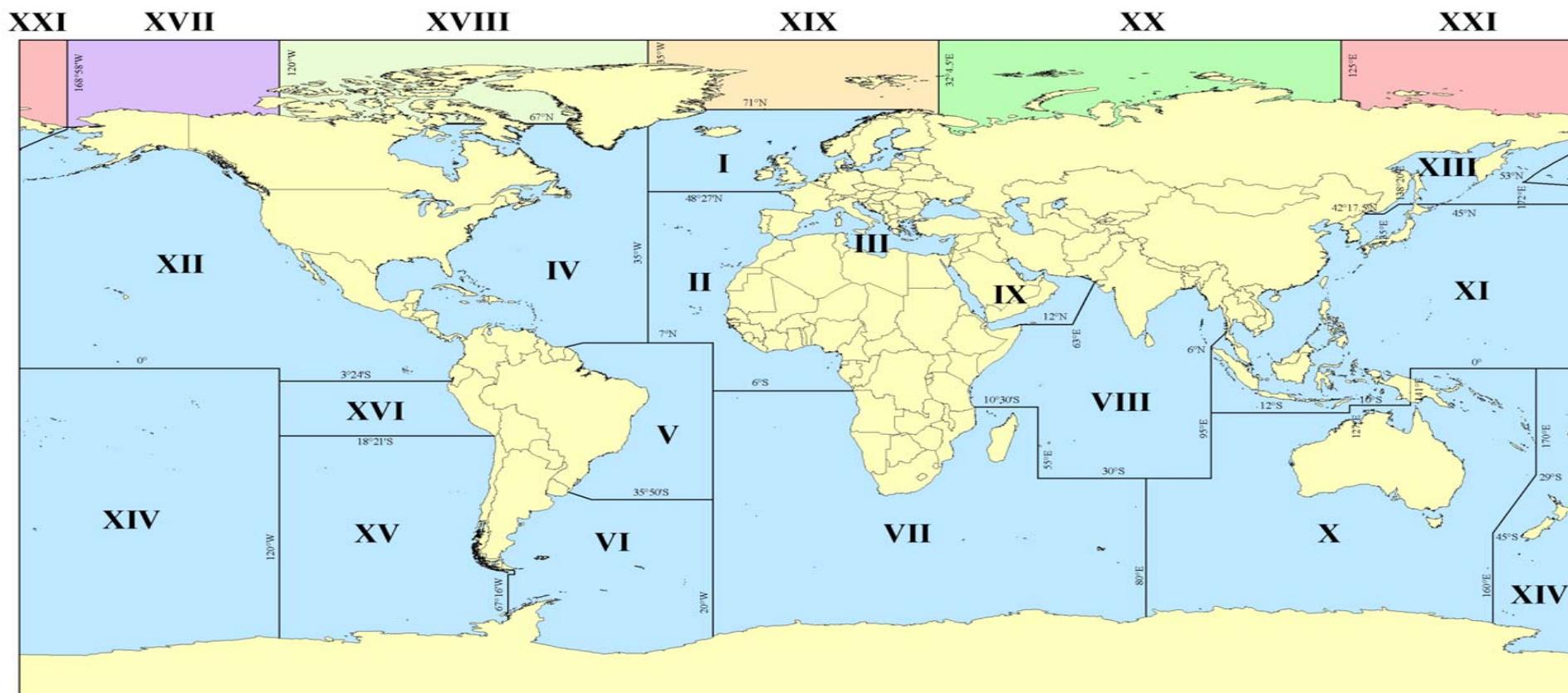
- .1 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey a letter to IOC/UNESCO stating that the options to use the IMO GMDSS communication facilities for promulgating a tsunami warning through the relevant NAVAREA/METAREA co-ordinators remain available to national or regional centres, if required (paragraph 3.28);
- .2 approve the draft IMO position on WRC-07 agenda items concerning matters relating to maritime services and authorize the Secretariat to convey the approved IMO position to appropriate ITU bodies for consideration (paragraphs 4.17 and 4.18 and annex 7);
- .3 approve the re-establishment of the Joint IMO/ITU Experts Group on Maritime Radiocommunication Matters, with the agreed ToR, for the development of further requirements for maritime radiocommunications (paragraphs 4.19 and 4.20 and annex 6);
- .4 approve the draft MSC circular on COSPAS-SARSAT International 406 MHz Beacon Registration Database (paragraph 5.13 and annex 9);
- .5 consider the proposed amendments to resolution A.888(21) and take action, as appropriate (paragraphs 5.20 to 5.32 and annex 10);
- .6 endorse the view of the Sub-Committee that access to LRIT and AIS data by both aeronautical and maritime SAR Authorities would provide considerable benefits to SAR services and take this view into account when developing LRIT standards (paragraph 6.11);
- .7 approve the convening of the 13th meeting of the ICAO/IMO JWG on Harmonization of Aeronautical and Maritime SAR intersessionally (paragraph 6.15 and annex 12);
- .8 adopt the draft MSC circular on Adoption of amendments to the IAMSAR Manual (paragraph 8.6 and annex 16);
- .9 consider the outcome of the work of the Sub-Committee regarding LRIT and adopt the proposed Performance standards and functional requirements for the LRIT system and take further action as appropriate (paragraph 10.58, section 10 and annexes 17 to 19);
- .10 consider the outcome of the Sub-Committee regarding passenger ship safety and take action as appropriate (paragraphs 11.10 to 11.26 and annexes 20 to 28); and
- .11 approve the proposed revised work programme of the Sub-Committee and the provisional agenda for COMSAR 11 (paragraph 13.6 and annex 35).

16.2 The Maritime Safety Committee, at its eighty-second session, is invited to:

- .1 endorse the action taken by the Sub-Committee in instructing the Secretariat to obtain updated information and issue COMSAR/Circ.38 on List of Land Earth Station (LES) operation co-ordinators in the Inmarsat system, superseding COMSAR/Circ.11 and Corrigenda (paragraph 3.4);
- .2 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the liaison statement addressing the issue of DSC complexity to ITU-R WP.8B and IEC TC 80 (paragraph 4.9 and annex 3);
- .3 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the following liaison statements to ITU-R WP.8B to meet from 22 to 31 March 2006:
 - .3.1 preliminary draft revision of Recommendation ITU-R M.585-3 on Assignment and use of Maritime Mobile Service Identities (paragraph 4.10 and annex 4);
 - .3.2 Recommendation ITU-R M.1371-1 concerning satellite detection of AIS messages (paragraph 4.11 and annex 5); and
 - .3.3 developments in maritime radiocommunication systems and technology and implications on methods to satisfy Resolution 351 (WRC-03) under WRC-07 agenda item 1.13 (paragraph 4.15 and annex 6);
- .4 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the liaison statement concerning the use of cellular phones in SAR services to the ITU Study Group 2 (paragraph 6.13 and annex 11);
- .5 approve the draft MSC circular containing Guidance on exchange of medical information between telemedical assistance services (TMASs) involved in international SAR operations (paragraph 6.47 and annex 13);
- .6 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the liaison statement on replenishing ships' compulsory medical supplies and status of medical supplies on board: problems encountered and proposals to WHO and ILO for their advice (paragraph 6.48 and annex 14);
- .7 endorse the action taken by the Sub-Committee in instructing the Secretariat to convey the liaison statements to WP.8B and IALA, inviting comments on the preliminary draft performance standards for survival craft AIS search and rescue transmitter (AIS-SART) (paragraphs 12.6 to 12.8 and annexes 29, 31 and 32); and
- .8 approve the report in general.

ANNEX 1

DRAFT PROPOSED ESTABLISHMENT OF ARCTIC NAVAREAS



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Note: The delimitation of the proposed Arctic NAVAREAs has not been agreed upon by all administrations, and is provided for illustrative purpose only. The delimitation of such areas is not related to, and shall not prejudice, the delimitation of any boundaries between States.

ANNEX 2

**TERMS OF REFERENCE OF THE JOINT IMO/IHO/WMO CORRESPONDENCE
GROUP ON MSI SERVICES**

Taking into account resolution A.706(17), “World-Wide Navigational Warning Service”, as amended by MSC/Circ.685 and MSC/Circ.750 and the relevant decisions of COMSAR 10, the Joint IMO/IHO/WMO Correspondence Group on MSI Services should give consideration and provide comments on the following:

- .1 recommend a way forward to deal with the expansion of MSI services taking account of documents MSC 80/13/2 and COMSAR 10/3 (Russian Federation), COMSAR 10/3/1 (IHO) and observations from other countries in the Arctic regions;
- .2 in progressing the matter also consider the following additional salient issues:
 - .1 Should there be a northern limit to any new areas?
 - .2 Can a seasonal service only be provided?
 - .3 Who will act as NAVAREA Co-ordinator and METAREA issuing service (do not have to be the same country)?
 - .4 Would some of the proposed new NAVAREAs be better established as sub-areas of existing NAVAREAs?
 - .5 How will warnings be transmitted, and can they be monitored as required? Do systems other than Inmarsat (such as HF NBDP, NAVTEX or other satellite service providers) need to be considered?
 - .6 Who will undertake the provision of SAR information?
 - .7 How will the Inmarsat system definition manual and existing SafetyNet terminals be updated to allow receipt of the new NAVAREAs? Ideally this update needs to be co-ordinated with plans to include new NAVAREAs in other parts of the world.
 - .8 Will assistance be required from IHO/CPRNW to support new NAVAREA Co-ordinators or from JCOMM/ETMSS for METAREA issuing services?
 - .9 How will WWNWS guidance and other relevant documents be updated?; and
- .3 prepare a report for submission to COMSAR 11.

ANNEX 3

LIAISON STATEMENT TO THE ITU-R WP.8B AND IEC TC80

ADDRESSING THE ISSUE OF DSC COMPLEXITY

The IMO would like to thank the ITU-R for the liaison statement (Document 8B/TEMP/109(Rev.1)) concerning DSC complexity issues.

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), whilst considering the issue of DSC complexity, was of the opinion that the addition of two new annexes 3 and 4 to Recommendation ITU-R M.493-11 went a long way towards meeting the objectives of IMO in simplifying the operation of DSC, and supports them, in principle.

ANNEX 4**LIAISON STATEMENT TO ITU-R WP.8B****PRELIMINARY DRAFT REVISION OF RECOMMENDATION ITU-R M.585-3 ON
ASSIGNMENT AND USE OF MARITIME MOBILE SERVICE IDENTITIES**

The IMO would like to thank the ITU-R for the liaison statement (Document 8B/TEMP/118) concerning the preliminary draft revision of Recommendation ITU-R M.585-3 on Assignment and use of maritime mobile service identities.

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), concurred with the Working Party 8B on these issues provided that the new MMSI resource created under Annex 5 relating to assignment of identification to craft associated with another vessel will be adequate to meet the expected demand. The numbers of boats and survival craft associated with a mother ship typically ranges from four, for a small cargo ship, to twenty four for a large passenger ship. The COMSAR Sub-Committee also recommended that the identity transmitted from an AIS-SART indicates that it originates from a survival craft, but as the transmission from a radar SART has no country nor vessel identifier, there is no need for the MMSI transmitted from AIS-SART to include a country or vessel identifier in order to duplicate the SART function. However, to ensure that transmissions from multiple AIS-SARTs, do not cause mutual interference, MMSIs of each AIS-SART should be different. Subject to the need to conserve MMSI resources, it should be possible to permanently encode an MMSI into an AIS-SART without the need for registration in a database.

ANNEX 5**LIAISON STATEMENT TO ITU-R WP.8B****RECOMMENDATION ITU-R M.1371-1:
SATELLITE DETECTION OF AIS MESSAGES**

The IMO would like to thank the ITU-R for the liaison statement (Document 8B/TEMP/121) concerning the Recommendation ITU-R M.1371-1 and describing an initial investigation of the feasibility of satellite detection of AIS messages.

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), noted with interest the information provided and appreciated the continuing efforts of Working Party 8B to investigate various mechanisms, including satellite detection, to provide a long-range AIS detection capability. The COMSAR Sub-Committee also noted that the capacity of the present two AIS channels might not be adequate in all circumstances for satellite detection and that further study was needed on the questions of an additional AIS channel and the means for ensuring that adequate protection could be afforded to AIS channels designated for the detection of AIS satellite messages.

ANNEX 6**LIAISON STATEMENT TO ITU-R WP.8B****DEVELOPMENTS IN MARITIME RADIOCOMMUNICATION SYSTEMS AND TECHNOLOGY AND IMPLICATIONS ON METHODS TO SATISFY RESOLUTION 351 (WRC-03) UNDER WRC-07 AGENDA ITEM 1.13**

The IMO would like to bring to the attention of ITU-R the implications on HF spectrum use resulting from the rapid implementation of new digital data exchange systems in the maritime mobile service.

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), noted that the utilization of parts of the available maritime spectrum has been decreasing in some parts of the world because of the limitations on use by new digital data exchange systems inherent in the present sub-division of use within Appendix 17 and the effects of No 52.217 of the Radio Regulations.

The Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its ninth sessions (7 to 11 February 2005), had previously noted the importance to the maritime community of introducing new digital data exchange systems as a possible replacement for NBDP.

Modern digital technologies for data compression and adaptive link establishment now offer many advantages with respect to the types of service that can be delivered to the maritime community and are already replacing NBDP for general communications over most of the ocean regions. However, these new services make much more intensive use of the present spectrum available, thus making it necessary to ensure that the present designated use within Appendix 17 of the Radio Regulations is reviewed.

There is scope within the maritime mobile service itself for improving the utility of the present spectrum by allowing data transmissions to use certain parts of Appendix 17 currently designated for use by analogue voice channels to provide additional flexibility within the maritime mobile spectrum for new data exchange services. The feasibility of allowing such use is evident from the results of band monitoring in some parts of the world, which show that there is less activity on designated analogue voice channels than in other parts of the maritime mobile bands. These voice channels could be considered for use by new data exchange technologies.

ITU-R WP.8B is invited to consider these factors in the further development of methods to satisfy agenda item 1.13, particularly in respect of action required under *resolves* 2 of Resolution 351 (WRC-03) to identify any necessary modifications to the frequency table contained within Appendix 17 with a view to facilitate the use of digital systems in the MF and HF bands allocated to the maritime mobile service.

ANNEX 7

DRAFT

**IMO POSITION ON WRC-07 AGENDA ITEMS CONCERNING
MATTERS RELATING TO MARITIME SERVICES****Agenda item 1.3**

1.3 *in accordance with Resolution 747 (WRC-03), consider upgrading the radiolocation service to primary allocation status in the bands 9 000 – 9 200 MHz and 9 300 – 9 500 MHz, and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500 – 9 800 MHz without placing undue constraint on the services to which the bands are allocated.*

Background

Maritime radars have operated as a safety service in the band 9 300 – 9 500 MHz for over five decades, for the purposes of navigation and collision avoidance. SOLAS requires all Convention ships to carry a radar working in the band 9 300 – 9 500 MHz and also to carry SARTs which operate in the same band. RACONS also operate in this band.

The radiolocation service has emerging requirements for increased image resolution and increased range accuracy, which necessitates wider contiguous emission bandwidths than are currently available. Therefore, there is a need to upgrade the status of frequency allocations to the radiolocation service in the frequency range 9 000 – 9 200 MHz and 9 300 – 9 500 MHz in order for existing and planned radar systems to satisfy their required missions.

The advantages to the maritime community of this upgrading are:

- a) provision of an increased deterrent to non-radiodetermination services to sharing within this band; and
- b) enhanced protection of the safety service by prolonging the life of this band as an exclusive radiodetermination band.

Radiolocation services have demonstrated compatible operations with radionavigation services in the bands 9 000 – 9 200 MHz and 9 300 – 9 500 MHz over many years through the use of similar system characteristics such as low-duty cycle emissions and scanning beams as well as interference reduction techniques. Study is ongoing within the ITU-R to confirm the compatibility between the radiolocation and radionavigation services in these bands.

The band 9 500 – 9 800 MHz is allocated on a primary basis to the Earth exploration-satellite (EESS) (active), space research (SRS) (active), radiolocation and radionavigation services. In order to satisfy global environmental monitoring requirements for improved resolution, EESS (active) and the SRS (active) allocations require an increase of 200 MHz. This additional bandwidth will greatly improve the resolution of the features for global monitoring and for environmental and land-use purposes. Study is ongoing to confirm the compatibility between EESS (active), SRS (active) and the existing services in the possible extension bands around 9 500 – 9 800 MHz.

IMO's position

While there is a long history of successful co-band operations between radiolocation and radionavigation systems near 9 GHz, new systems may not necessarily be compatible with existing systems. Therefore, IMO supports measurement tests and ITU-R studies to ensure compatible operation in these bands. If the outcome of these measurements and studies is favourable, IMO anticipates supporting the allocation upgrades for radiolocation. However, it is the position of IMO that there would also need to be regulatory text in the form of a footnote to protect radionavigation systems so that there will be no constraints on radionavigation use in these bands, regardless of the outcome of the studies. Concerning the possible extension to the EESS and SRS allocations, IMO could support such an extension provided that there is a favourable outcome from the sharing studies and that the existing primary services are protected. Some regulatory text in the form of one or more applicable footnotes may be necessary to ensure such protection.

Agenda item 1.13

1.13 *taking into account Resolutions 729 (WRC-97), 351 (WRC-03) and 544 (WRC-03), to review the allocations to all services in the HF bands between 4 MHz and 10 MHz, excluding those allocations to services in the frequency range 7 000 – 7 200 kHz and those bands whose allotment plans are in Appendices 25, 26 and 27 and whose channelling arrangements are in Appendix 17, taking account of the impact of new modulation techniques, adapting control techniques and spectrum requirements for HF broadcasting.*

Background

The GMDSS is defined in SOLAS IV/4 as having nine functional requirements which include *inter alia* 1) transmitting and receiving maritime safety information (MSI) and 2) transmitting and receiving general radiocommunication to and from shore based radio systems or networks.

Ships have traditionally made extensive use of the HF bands for long distance safety and general communications using Morse telegraphy, radiotelex and speech. The introduction of the GMDSS removed the dependence on Morse telegraphy and introduced a standard radiotelex system, known as Narrow Band Direct Printing (NBDP), as a carriage requirement in SOLAS chapter IV together with the option of using Inmarsat satellite services. These latter do not however operate in the polar regions (sea area A4). There is evidence that communications in the polar regions is increasing due to the melting of sea ice.

NBDP is now a rather technically limited system and is little supported by coast stations around the world. At WRC-03, Appendix 17 was modified by the addition of a new footnote (p) which permitted initial testing and possible future introduction in certain bands of new digital technologies. These new digital technologies are becoming widely used and their use is growing. Globe Wireless reported in 2004 that their HF data communication system had grown threefold over the previous five years to 5,000 ships and that the kilobit usage per ship per day had also tripled over the same period. The company was currently using 300 3 kHz duplex channels – 75% of which used Appendix 17 frequencies and the remaining 25% shared other frequencies, particularly in the gap of Appendix 17 frequencies between 8 and 12 MHz.

Resolution **351 (WRC-03)** resolves that there should be interoperable technologies implemented under Appendix **17** and ITU-R is preparing recommendations on technical standards with assistance of IMO.

COMSAR 9 studied the usage of NBDP and concluded that it was little used for general communications. However it was still considered to be required for shore transmission of MSI in sea area A4, that there was a requirement for ships to transmit weather observations and position reports in sea area A4 for which NBDP could be used (although other technologies could also be possible) and that due to the more robust propagation of NBDP compared to voice, NBDP could not immediately be discontinued in sea area A4 as a distress follow up communication. COMSAR 9 therefore concluded that the frequencies of Appendix **15** concerning NBDP should be retained for the foreseeable future.

HF broadcasting services are looking for more spectrum under the scope of Resolution **544** and the marine allocations may be considered for use by other services to offer more flexibility of use by the fixed and mobile services in general. It is therefore necessary for IMO to justify the use of the HF bands under the scope of Resolution **351** by the new HF services which are replacing Morse telegraphy, NBDP and speech.

IMO's position

- 1 ITU should be encouraged to review Article 33 (Urgency and Safety communications) to better explain MSI, safety communications and safety related general communications.
- 2 NBDP should be retained on the Appendix **15** channels and any new HF equipment installed on ships should be capable of working FEC NBDP.
- 3 ITU-R Working Party 8B should continue its studies into technical Recommendations for interoperable world-wide technologies and Appendix **17** should be revised to facilitate the use of new systems whilst maintaining provisions for maritime operation including NBDP.
- 4 The Conference should be made aware by IMO of the use made of the Appendix **17** bands for general communications by the maritime community and the importance of the bands to the maritime community. Proposals should be developed for extra HF spectrum for new systems, particularly in the range 10 to 18 MHz.
- 5 The need for additional spectrum resources in the range 9 to 10 MHz should be addressed in order to facilitate the introduction of new technologies in the mobile maritime service, by overcoming the large gap between the 8 and 12 MHz maritime mobile bands.
- 6 IMO will note that the means to effect access to additional spectrum could include increased use of the mobile service which is currently allowed in the Radio Regulations, as well as increased sharing of mobile within the fixed service.

Agenda item 1.14

1.9 *to review the operational procedures and requirements of the Global Maritime Distress and Safety System (GMDSS) and other related provisions of the Radio Regulations, taking into account Resolutions **331 (Rev.WRC-03)** and **342 (Rev.WRC-2000)** and the continued transition to the GMDSS, the experience since its introduction and the needs of all classes of ships.*

Background

During the transition period to implementation of the GMDSS, the Radio Regulations have maintained dual provisions; Chapter **VII** for operations within the GMDSS and Appendix **13** for non-GMDSS operations. However, maintaining support for both old and new distress and safety systems for an extended period of time is costly and inconvenient for search and rescue authorities and also complicates shipboard procedures. It may be noted that many of the Appendix **13** procedures are now no longer used.

Additionally, in order to ensure the safety of ships at sea, the ITU over the years has adopted numerous regulations and operational procedures for operators of shipborne radiocommunication stations. These requirements have not lessened with the advent of the GMDSS. Appendix **16** of the Radio Regulations, for example, requires GMDSS-equipped ships to carry four large publications: the Alphabetical List of Call Signs, the List of Coast Stations and Coast Earth Stations, the List of Ship Stations and the Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services. Given that the post of Radio Officer has disappeared on board most ships following the introduction of the GMDSS, the remaining shipboard personnel can no longer be expected to remain proficient in all of these regulations, or even to use these publications to the extent originally intended when these regulations were first developed. It may not be possible to drop these regulations entirely, but they and the associated publications should be simplified significantly.

When the GMDSS was first developed, computer software was in its infancy, and neither IMO nor ITU equipment performance technical standards included software requirements. As a consequence, many operational details, such as those contained in the DSC operational procedures, were applied to operators of equipment rather than to designers of software for that equipment, with the result that operational inconsistencies exist. Improved equipment design has however enabled more of the operational procedures to be built into software and ITU and IEC are currently working on defining a more useable operator interface.

Because of the many vessels around the world that are not subject to SOLAS, in particular small commercial and leisure craft, there remains an important requirement to maintain some of the procedures used prior to the introduction of the GMDSS so that a common means of communication is available between all classes of vessels for distress and safety purposes. In this respect, the seventy-eighth session of the IMO Maritime Safety Committee (May 2004) decided that for the feasible future SOLAS ship, while at sea, shall maintain a listening watch on VHF Channel 16, where practicable. This is both for alerting purposes and to ensure that SOLAS ships can communicate effectively with such vessels and provide bridge to bridge communications for themselves.

The procedures given in Chapter VII and Appendix 13 for VHF operation are in fact very similar except for the initial alerting procedures. The current procedures given in Chapter VII are not however very specific in describing DSC procedures and not very specific in describing procedures to relay a distress alert received by voice to GMDSS equipped coast stations and ships. It is important however to encourage all vessels to be able to participate fully in the GMDSS by equipping with DSC so that any changes to procedures should not result in an implication that GMDSS is not required for vessels not subject to SOLAS.

In some areas of the world there is congestion on Appendix **18** channels. WRC 2000 revised Appendix **18** to permit flexibility of use for 12.5 kHz channelling, enabling the upper legs of some duplex channels to be operated as separate simplex channels and permitting testing

of new digital technologies. This process should now be extended to all duplex channels but it should be noted that digital technologies are now in use in some parts of the world and the development of digital services should not be hampered.

Of the channels of Appendix 18, only channel 16 is afforded protection from interference under Article 5. Consideration should be given to affording extra protection to channel 70. IMO is also studying the introduction of Long Range Identification and Tracking of ships and one proposed method of achieving this is by use of satellites receiving the transmissions from the Automatic Identification Systems (AIS) carried by ships. Depending on the results of studies, an additional channel may be required for AIS purposes. This, and the existing AIS channels 1 and 2, will then require protection and also authorization to operate in the mobile satellite service by appropriate changes to the regulations.

IMO's position

- 1 ITU should be encouraged to simplify and clarify operational procedures and technical requirements as much as possible.
- 2 Appropriate provisions for the use of VHF channel 16 for distress, urgency, safety and general calling by voice should be maintained and aligned with the GMDSS procedures in Chapter 7, with particular emphasis on procedures for permitting distress relays to GMDSS equipped stations.
- 3 The remaining rules and procedures for 500 kHz and 2182 kHz operation are not applicable to SOLAS ships and Appendix 13 can be suppressed.
- 4 ITU and IMO should nevertheless encourage all ships to adopt the techniques of the GMDSS to improve safety.
- 5 ITU should conduct studies to review, modify and reduce the scope and content of regulations and publications required to be carried on ships under Appendix 16. To help accomplish this, ITU should consider applying future regulations to the design and operation of shipboard radiocommunication equipment, rather than to persons onboard ship.
- 6 Appendix 18 should be further reviewed to improve efficiency of VHF use. ITU should study reserving a channel for the use of AIS suitable for satellite reception with appropriate protection.
- 7 Protection should be considered for VHF channel 70 (156.525 MHz) and the AIS channels AIS1 (161.975 MHz) and AIS2 (162.025 MHz) depending on the results of studies.

Agenda item 1.16

1.16 to consider the regulatory and operational provisions for Maritime Mobile Service Identities (MMSIs) for equipment other than shipborne mobile equipment, taking into account Resolutions 344 (Rev.WRC-03) and 353 (WRC-03).

Background

Maritime Mobile Service Identities (MMSIs) are required for many shipborne communication equipment (e.g. DSC, ship earth stations). The MMSI is a nine-digit figure that

provides a unique identification for ship stations, group ship stations, coast stations and group coast stations. Three of the nine MMSI digits are the Maritime Identification Digits (MIDs). MIDs represent the territory or geographical area of administrations and are assigned by ITU.

WRC-03 revised the arrangements for the assignment of MMSIs to ships. However, a new class of radios is now being installed on ships which require MMSIs known as Automatic Identification Systems (AIS). In the case of a ship the same MMSI is used by the DSC and the AIS.

However it is anticipated that AIS will be used on platforms which are not ships such as Aids to Navigation and Search and Rescue aircraft. The number of these will be relatively small so MMSIs can be made available without exhausting the supply. However it may be advantageous to select numbers which clearly indicate the type of platform.

ITU-R WP.8B has prepared draft amendments to Recommendation M.585 and Article 19 (Identification of stations). These propose reserving the prefix "111" for aircraft station identification and "99" for identification of Aids to Navigation. This allows 1,000 aircraft per MID and 10,000 Aids to Navigation per MID.

IMO's position

IMO is in agreement with the work that has been carried out in the ITU.

Agenda item 2

2 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations communicated by the Radiocommunication Assembly, in accordance with Resolution 28 (Rev.WRC-03), and to decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution 27 (Rev.WRC-03).

Background

The concept of incorporation by reference is also employed by IMO. Resolutions 27 and 28 clarify the meaning of incorporation by reference which, for ITU purposes, is restricted to references to text intended to have mandatory effect. The rules for identifying text suitable for incorporation by reference, the method of reference and related WRC procedures for treating instances of incorporation by reference are set out clearly. New instances of incorporation by reference will only be allowed if forming part of the action required under a substantive WRC agenda item. The procedures to be employed during WRCs demand that the actual texts proposed for incorporation be available as conference documents. Also, a conference document summarizing new or updated instances of incorporation by reference has to be developed during the conference in order to ensure that Vol. 4 of the Radio Regulations, which contains the complete texts of all referenced material, is both up-to-date and complete.

Future action on this standing agenda item will be limited to approving new instances of incorporation by reference associated with the substantive agenda items and the "housekeeping tasks" of updating references to revised ITU-R Recommendations. The Bureau will carry prime responsibility for advising on the necessary housekeeping tasks. The role of administrations will therefore be limited to determining whether proposals for new instances of incorporation by reference are preferable to other solutions, such as including vital text directly within the Radio Regulations, and monitoring for any mistakes or inconsistencies regarding updated references.

Because of the number of ITU-R Recommendations dealing with the design and operation in the maritime mobile and maritime mobile-satellite services the task of ensuring that references are kept up to date is of direct interest to IMO. Incorporation by reference is quite well-suited to material of an operational nature or to stable technical material.

Careful consideration therefore needs to be given to the use of the incorporation by reference procedure in respect of procedures or regulations affecting maritime communication services in order to ensure that the matter in question is indeed of a mandatory nature and that no simpler methods are available to achieve the same objective. Where references are non-mandatory, it is not necessary to establish specific conditions in applying the texts quoted. In such cases, reference should be made using the terminology “the most recent version” of a Recommendation.

IMO’s position

1 IMO has studied the Recommendations of relevance and commented on each as given at annex 1.

2 Incorporation by reference is of importance to IMO because of the close relationship between many of the ITU-R Recommendations related to GMDSS equipment and its operation, to IMO performance standards.

3 IMO requests early indication of any changes proposed by ITU to the mechanism of incorporation by reference and to the list of incorporated Recommendations.

Agenda item 4

4 *in accordance with Resolution 95 (Rev.WRC-03), to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;*

Background

There are number of Resolutions and Recommendations of previous conferences which are of interest of IMO such as Resolution 331 concerning the transition to the GMDSS. There is a need for IMO to review all these Resolutions and Recommendations.

IMO’s position

IMO has studied the Resolutions and Recommendations of relevance and commented on each as given at annex 2.

Agenda item 7.2

7.2 *to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 803 (WRC-03).*

Background

Chapter IV (Radiocommunications) of the SOLAS Convention was amended in 1988 to introduce the GMDSS which entered into force on 1 February 1992. The chapter has been amended on a number of occasions since then to modify provisions in the light of experience.

The seventy-eighth session of the IMO Maritime Safety Committee (May 2004) gave permission for COMSAR 9 to consider further revisions to align the provisions for satellite equipment carriage with IMO resolution A.888(21). The COMSAR Sub-Committee is further considering new technologies for the use by ships in the GMDSS. It is inevitable that chapter IV will further evolve over time and changes to ITU regulatory provisions may result as a consequence.

It is anticipated that changes technologies in the HF bands will require more efficient use to be made of the available spectrum which may result in modifications being required to Appendix **25**.

IMO's position

1 The agendas of future ITU World Radio Conferences should make provision to enable necessary amendments to ITU Regulatory provisions consequential to changes in SOLAS chapter IV. This could be achieved by extending the existing standing item resolving inconsistencies in the Radio Regulations to resolving inconsistencies between the Radio Regulations and the SOLAS Convention.

2 A future revision of Appendix **25** should be permitted.

ANNEX 1

RECOMMENDATION ITU-R M.257-3

**SEQUENTIAL SINGLE FREQUENCY SELECTIVE-CALLING SYSTEM
FOR USE IN THE MARITIME MOBILE SERVICE**

(1959-1970-1978-1995)

No longer needed by IMO. Probably no longer needed by the maritime community. The last coast station using this calling system (in Malaysia) closed two years ago.

RECOMMENDATION ITU-R M.476-5

**DIRECT-PRINTING TELEGRAPH EQUIPMENT
IN THE MARITIME MOBILE SERVICE***

(Question ITU-R 5/8)

(1970-1974-1978-1982-1986-1995)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS IV although the system is little used. Is associated with Agenda item 1.13. Also see footnote.

RECOMMENDATION ITU-R M.489-2

**TECHNICAL CHARACTERISTICS OF VHF RADIOTELEPHONE
EQUIPMENT OPERATING IN THE MARITIME MOBILE
SERVICE IN CHANNELS SPACED BY 25 kHz**

(1974-1978-1995)

Needed by IMO to support the carriage requirements of SOLAS IV and needed by the maritime community in general. Will likely be needed into the foreseeable future.

* This Recommendation is retained in order to provide information concerning existing equipment, but will probably be deleted at a later date. New equipment should conform to Recommendation ITU-R M.625 which provides for the exchange of identification signals, for the use of 9 digit maritime mobile service identification signals and for compatibility with existing equipment built in accordance with this Recommendation.

Note by the Secretariat: The references made to the Radio Regulations (RR) in this Recommendation refer to the RR as revised by the World Radiocommunication Conference 1995. These elements of the RR will come into force on 1 June 1998. Where applicable, the equivalent references in the current RR are also provided in square brackets.

RECOMMENDATION ITU-R M.492-6

**OPERATIONAL PROCEDURES FOR THE USE OF DIRECT-PRINTING
TELEGRAPH EQUIPMENT IN THE MARITIME MOBILE SERVICE**

(Question ITU-R 5/8)

(1974-1978-1982-1986-1990-1992-1995)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS IV although the system is little used. Is associated with Agenda item 1.13.

RECOMMENDATION ITU-R M.541-8

**OPERATIONAL PROCEDURES FOR THE USE OF DIGITAL SELECTIVE-CALLING
EQUIPMENT IN THE MARITIME MOBILE SERVICE**

(Question ITU-R 9/8)

(1978-1982-1986-1990-1992-1994-1995-1996-1997)

The current recommendation is ITU-R M.541-9. The need for the recommendation to be incorporated by reference depends on outcome of the revision of Chapter VII under agenda item 1.14.

RECOMMENDATION ITU-R M.625-3

**DIRECT-PRINTING TELEGRAPH EQUIPMENT EMPLOYING AUTOMATIC
IDENTIFICATION IN THE MARITIME MOBILE SERVICE****

(Question ITU-R 5/8)

(1986-1990-1992-1995)

Currently needed by IMO to support the NBDP carriage requirement in SOLAS IV although the system is little used. Is associated with Agenda item 1.13. Also see footnote.

RECOMMENDATION ITU-R M.627-1

**TECHNICAL CHARACTERISTICS FOR HF MARITIME RADIO
EQUIPMENT USING NARROW-BAND PHASE-SHIFT
KEYING (NBPSK) TELEGRAPHY**

(Question ITU-R 54/8)

(1986-1995)

Believed not to be used by IMO or the maritime community.

** Newly developed equipment should conform to the present Recommendation which provides for compatibility with existing equipment built in accordance with Recommendation ITU-R M.476.

RECOMMENDATION ITU-R M.690-1

**TECHNICAL CHARACTERISTICS OF EMERGENCY POSITION-INDICATING
RADIO BEACONS (EPIRBs) OPERATING ON THE CARRIER
FREQUENCIES OF 121.5 MHz AND 243 MHz**

(Question ITU-R 31/8)

(1990-1995)

Required by IMO to define the homing signal characteristics for the satellite EPIRB required by SOLAS IV. Likely to be used by the maritime community for some time to come for EPIRBs and man overboard devices. COSPAS-SARSAT will provide a service which detects 121.5 MHz signals by satellite until 2009.

RECOMMENDATION ITU-R M.1169

HOURS OF SERVICE OF SHIP STATIONS

(1995)

No longer needed by IMO or the maritime community. There are now no morse services and radio officers.

RECOMMENDATION ITU-R M.1171

**RADIOTELEPHONY PROCEDURES IN THE
MARITIME MOBILE SERVICE**

(1995)

Required by IMO and the maritime community as long as coast stations offer a public correspondence service. The number of such coast stations is however declining.

RECOMMENDATION ITU-R M.1172

**MISCELLANEOUS ABBREVIATIONS AND SIGNALS TO BE USED
FOR RADIOCOMMUNICATIONS IN THE MARITIME MOBILE SERVICE**

(1995)

No longer required by IMO which uses the Standard Marine Communication Phrases but required by the maritime community.

RECOMMENDATION ITU-R M.1173

**TECHNICAL CHARACTERISTICS OF SINGLE-SIDEBAND TRANSMITTERS USED
IN THE MARITIME MOBILE SERVICE FOR RADIOTELEPHONY IN THE BANDS
BETWEEN 1 606.5 kHz (1 605 kHz REGION 2) AND 4 000 kHz
AND BETWEEN 4 000 kHz AND 27 500 kHz**

(1995)

Required by IMO and the maritime community and likely to be required into the foreseeable future.

RECOMMENDATION ITU-R M.1174-1

**TECHNICAL CHARACTERISTICS OF EQUIPMENT USED
FOR ON-BOARD VESSEL COMMUNICATIONS IN
THE BANDS BETWEEN 450 AND 470 MHz**

(1995-1998)

Required by the maritime community and useful to IMO.

RECOMMENDATION ITU-R M.1175

**AUTOMATIC RECEIVING EQUIPMENT FOR RADIOTELEGRAPH
AND RADIOTELEPHONE ALARM SIGNALS**

(1995)

No longer required by IMO since all Convention vessels use the techniques of the GMDSS. The Radiotelegraph alarm signal is no longer used. The radiotelephone alarm signal may be still in use for certain non-Convention vessels such as fishing vessels.

RECOMMENDATION ITU-R M.1638

**CHARACTERISTICS OF AND PROTECTION CRITERIA FOR SHARING STUDIES
FOR RADIOLOCATION, AERONAUTICAL RADIONAVIGATION AND
METEOROLOGICAL RADARS OPERATING IN THE FREQUENCY BANDS
BETWEEN 5 250 AND 5 850 MHz**

(2003)

Not required by IMO but may be required by the maritime community where radars in this band are used.

ANNEX 2

RESOLUTION 13 (Rev.WRC-97)

Formation of call signs and allocation of new international series

Retain.

RESOLUTION 18 (Mob-83)

Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict

Revise in accordance with Chapter VII and Appendix 13 (agenda item 1.14).

RESOLUTION 21 (Rev.WRC-03)

Implementation of changes in frequency allocations between 5 900 kHz and 19 020 kHz

Abrogate. Changes will be completed in 2007.

RESOLUTION 205 (Rev.Mob-87)

Protection of the band 406-406.1 MHz allocated to the mobile-satellite service

Retain.

RESOLUTION 207 (Rev.WRC-03)

Measures to address unauthorized use of and interference to frequencies in the bands allocated to the maritime mobile service and to the aeronautical mobile (R) service

Possibly revise in accordance agenda item 1.14.

RESOLUTION 222 (WRC-2000)

Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service

Retain.

RESOLUTION 331 (Rev.WRC-03)

Transition to the Global Maritime Distress and Safety System (GMDSS)

Subject of agenda item 1.14.

RESOLUTION 339 (Rev.WRC-03)

Co-ordination of NAVTEX services

Revise to remove instruction to publish in the List of Coast Stations. Use MARS web-site?

RESOLUTION 340 (WRC-97)

Need for additional search and rescue information in databases

Revise to urge Administrations who have not conformed to conform. Note that Art 20.16 requires the procedure.

RESOLUTION 342 (Rev.WRC-2000)

New technologies to provide improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service

Retain noting that Appendix 18 may be modified under agenda item 1.14.

RESOLUTION 343 (WRC-97)

Maritime certification for personnel of ship stations and ship earth stations for which a radio installation is not compulsory

Retain to ensure common operations between Convention and non-Convention ships.

RESOLUTION 344 (Rev.WRC-03)

Management of the maritime mobile service identity numbering resource

Revise to note revision of Recommendation ITU-R M.585 and review in 2015 as there is now no evidence of lack of capacity of MMSIs.

RESOLUTION 345 (WRC-97)

Operation of Global Maritime Distress and Safety System equipment on and assignment of maritime mobile service identities to non-compulsory fitted vessels

Revise. Resolves 1 has been carried out through Res 340. Resolves 2 has been carried out through Res 340, Res 344 and agenda item 1.16. In Resolves 2 and 3 Res 344 removed ITU-T role.

RESOLUTION 349 (WRC-97)

Operational procedures for cancelling false distress alerts in the Global Maritime Distress and Safety System

Retain.

RESOLUTION 351 (WRC-03)

Review of the frequency and channel arrangements in the MF and HF bands allocated to the maritime mobile service with a view to improving efficiency by considering the use of new digital technology by the maritime mobile service

Subject of agenda item 1.13.

RESOLUTION 352 (WRC-03)

Use of the carrier frequencies 12 290 kHz and 16 420 kHz for safety-related calling to and from rescue coordination centres

Retain.

RESOLUTION 353 (WRC-03)

Maritime mobile service identities for equipment other than shipborne mobile equipment

Subject of agenda item 1.16.

RESOLUTION 747 (WRC-03)

Possible upgrade of the radiolocation service to primary allocation status in the frequency bands 9 000-9 200 MHz and 9 300-9 500 MHz, and possible extension of the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 MHz

Subject of agenda item 1.3.

RECOMMENDATION 7 (Rev.WRC-97)

Adoption of standard forms for ship station and ship earth station licences and aircraft station and aircraft earth station licences

Retain.

RECOMMENDATION 14 (Mob-87)

Identification and location of special vessels, such as medical transports, by means of standard maritime radar transponders

Abrogate. Radar transponders have not been implemented. Identification and location is now achieved with Automatic Identification Systems conforming to recommendation ITU-R M.1371.

RECOMMENDATION 37 (WRC-03)

**Operational procedures for earth stations
on board vessels (ESVs) use**

Retain.

RECOMMENDATION 316 (Rev.Mob-87)

**Use of ship earth stations within harbours and other waters
under national jurisdiction**

Retain.

RECOMMENDATION 318 (Mob-87)

**Improved efficiency in the use of the Appendix 18 VHF frequency spectrum
for maritime mobile communications**

Subject of agenda item 1.14.

RECOMMENDATION 604 (Rev.Mob-87)

**Future use and characteristics of emergency position-indicating
radiobeacons (EPIRBs)**

Abrogate. EPIRB requirements are defined in SOLAS IV. Note however that there may still be ICAO interest.

RECOMMENDATION 605 (Rev.Mob-87)

**Technical characteristics and frequencies for
shipborne transponders**

Abrogate. Radar transponders have not been implemented. Identification and location is now achieved with Automatic Identification Systems conforming to recommendation ITU-R M.1371.

ANNEX 8

REVISED TERMS OF REFERENCE FOR THE JOINT IMO/ITU EXPERTS GROUP ON MARITIME RADIOCOMMUNICATION MATTERS

Purpose

To develop the future requirements for maritime radiocommunications taking into account the operational needs as defined by the IMO and the regulatory needs as defined by the ITU.

Structure

An experts group will be established from people active in IMO and ITU with a representative range of viewpoints.

Contact points:

IMO Secretariat – Mr. V. Lebedev
ITU Secretariat – Mr. W. Frank

The Secretariats will liaise with each other and interested administrations to determine the optimum composition of the group, regarding representation of various interests, geographic distribution and efficiency of working.

Terms of reference

- To prepare supplementary explanations and advice on the IMO position on WRC 2007 Agenda items 1.3, 1.13, 1.14, 1.16, 2, 4 & 7.2, with particular emphasis on:
 - the future requirements for HF spectrum;
 - possible future requirements for VHF communications; and
 - the effects of discontinuing the 121.5 MHz alerting function through the COSPAS-SARSAT satellite system and discontinuing the Inmarsat-E service on the availability of reserved frequencies for distress and safety purposes.
- To prepare a rationale to address the future needs of the maritime mobile and maritime mobile satellite services at future WRCs through necessary changes to the regulatory treatment of spectrum resources and operational procedures, noting in particular the need to consider:
 - changes to the Radio Regulations to ensure the security of ships and ports; and
 - improved detection and protection of AIS transmissions.

- To prepare the regulatory changes necessary to make the analogue voice channels contained within Appendix 17 available for use by digital data exchange systems at WRC-07 or a future WRC, as appropriate.

Suggested method of working

To meet in IMO London for 2/3 days in July 2006 (preferably 5-7 July) to:

- consider the outcome of COMSAR 10 and of ITU-R WP.8B (March 2006) as well as inputs from Administrations and adjust, subject to evaluation by the Secretariat, the IMO position in respect of action required at future WRCs to support future development of maritime radiocommunications; and
- prepare explanatory material to support the IMO position for ITU-R WP.8B in September 2006 and the CPM, provisionally scheduled for March 2007, subject to evaluation by the Secretariat.

The United Kingdom is prepared to provide a Chairman for the group.

ANNEX 9

DRAFT MSC CIRCULAR

Ref. T2-OSS/1.4

MSC/Circ.[....]
.. May 2006

**COSPAS-SARSAT
INTERNATIONAL 406 MHz BEACON REGISTRATION DATABASE**

1 The Maritime Safety Committee, at its eighty-first session (10 to 19 May 2006), recognizing the importance of 406 MHz EPIRB registration databases to be available to SAR Authorities at all times, approved the guidance on COSPAS-SARSAT International 406 MHz Beacon Registration Database (IBRD) prepared by the Sub-Committee on Radiocommunications and Search and Rescue, at its tenth session, as set out in the annex.

2 Member Governments are invited to bring the annexed guidance to the attention of all parties concerned.

ANNEX

**GUIDANCE ON THE COSPAS-SARSAT
INTERNATIONAL 406 MHz BEACON REGISTRATION DATABASE**

Need for EPIRB registration and associated databases

1 Emergency position-indicating radio beacons (EPIRBs) perform distress alerting and other functions to support search and rescue (SAR) services covered by the 1979 International Convention on Maritime Search and Rescue, as amended, for any person in distress at sea, and the 1974 International Convention on Safety of Life at Sea (SOLAS), as amended, requires EPIRB carriage (Chapter IV, regulation 7.6) and registration.

2 The provisions relevant to EPIRB registration in Chapter IV, regulation 5-1 apply to all ships on all voyages, and are as follows:

“Each Contracting Government undertakes to ensure that suitable arrangements are made for registering global maritime distress and safety system (GMDSS) identities and for making information on these identities available to rescue co-ordination centres on a 24-hour basis. Where appropriate, international organizations maintaining a registry of these identities shall be notified by the Contracting Government of these assignments.”

3 It is crucial that 406 MHz EPIRBs be registered, and that the registration data be available to SAR authorities at all times. Experience has shown that EPIRB registration data is either critically important or somewhat helpful in the majority of SAR cases involving an EPIRB alert.

4 406 MHz EPIRBs should be registered regardless of whether they are carried aboard ships or other marine craft, and registrations should be reinforced by national requirements.

5 It is essential that IMO Member States arrange for registration of EPIRBs to enable EPIRB owners to fulfil their obligation to register the beacons, and to provide access to this data by SAR authorities. Such arrangements can be made nationally, in co-operation with other Administrations or by other suitable means.

International Beacon Registration Database

6 COSPAS-SARSAT, the international programme that processes 406 MHz EPIRB alerts and routes them to the identified SAR authorities, has developed an International 406 MHz Beacon Registration Database (IBRD) that became operational on 16 January 2006.

7 The IBRD is hosted on the Internet at <https://www.406registration.com> with online help capabilities.

8 COSPAS-SARSAT provides the IBRD solely for the purpose of assisting SAR Services in SAR operations. The IBRD is available free of charge to users with no access to national registration facilities.

9 Administrations that already have national registers should consider using the IBRD to make their national beacon registration data more readily available to SAR personnel on a 24-hour basis.

10 The IBRD can be used not only for registering 406 MHz EPIRBs, but also 406 MHz emergency locator transmitters (ELTs) carried on board aircraft, and personal locator beacons (PLBs) designed for personal use.

Background

11 The COSPAS-SARSAT 406 MHz system provides distress alerts that include the unique 15-character hexadecimal identification of the transmitting beacon. This beacon identification can be decoded to obtain information including:

- .1 the type of beacon, i.e. ELT, EPIRB or PLB;
- .2 the country code and identification data which form the unique beacon identification; and
- .3 the type of auxiliary radio locating (homing) device.

12 If a beacon is properly registered, the 15-character hexadecimal identification of the beacon can be used to access additional information. Beacon registration databases can provide information of great use to SAR personnel, including:

- .1 specific identification information;
- .2 the make/model of aircraft or vessel in distress;
- .3 communications equipment available;
- .4 the total number of persons onboard; and
- .5 emergency contact information.

13 Such information can be made available to support SAR services only if the required information is provided to the registration authority.

14 Registration of 406 MHz beacons is required in accordance with international regulations on SAR established by the International Civil Aviation Organization (ICAO) and by the SOLAS Convention. In addition, some countries have made 406 MHz beacon registration mandatory and maintain national 406 MHz beacon registration databases.

IBRD Concept of Operations

15 The IBRD is designed to support:

- .1 beacon owners who wish to register their beacons;
- .2 Administrations to make registration data available for SAR; and
- .3 SAR authorities that need to efficiently access beacon registration data to assist persons in distress.

16 COSPAS-SARSAT has configured the IBRD to accept by default beacon registrations from beacon owners, unless the Administration associated with the beacon's country code(s) has advised COSPAS-SARSAT that it:

- .1 operates a national database with a 24-hour point of contact and does not want EPIRBs with its country code(s) included in the IBRD; or
- .2 wishes to control the inclusion of beacons with its country code(s) in the IBRD.

Establishing an IBRD Point of Contact

17 Each Administration should provide COSPAS-SARSAT with a National IBRD Point of Contact for co-ordinating use of the IBRD. This Contact will help to resolve problems arising with registration of beacons with the Administration's country code(s).

18 The National IBRD Point of Contact should be officially identified to the COSPAS-SARSAT Secretariat using a letter similar to that annexed to this circular. This letter must be signed by the Administration's IMO representative, or by its representative to COSPAS-SARSAT or to the International Civil Aviation Organization (ICAO), and sent to the COSPAS-SARSAT Secretariat. Based on the letter, the Database Administrator (i.e. the COSPAS-SARSAT Secretariat) will allocate the requested user identifications and passwords to the Administration's National IBRD Point of Contact.

19 The request should specify whether user identification and passwords are required for:

- .1 National Data Providers for registration of beacons with their country code(s);
- .2 SAR Services for IBRD queries; and/or
- .3 authorized shore-based service facilities and inspectors.

20 Passwords and user identifications will be sent via regular post to the National IBRD Point of Contact, who must then forward the user identification and password to national SAR Services, Data Providers and authorized maintenance facilities and inspectors to enable their use of the IBRD.

21 It is critical that, at a minimum, passwords be requested for SAR Services to access beacon registration information held in the IBRD.

Providing Details of Your National Beacon Registry

22 If an Administration maintains its own national beacon registry and decides not to allow beacons with its country code(s) to be registered in the IBRD, the Administration should review the information relating to national beacon registries in documents C/S A.001 and C/S S.007 (available from www.cospas-sarsat.org) and provide the COSPAS-SARSAT Secretariat with any updates as appropriate. It is critically important that accurate information is provided to the Secretariat in order to keep these documents up to date.

23 Beacon owners who attempt to register beacons with an Administration's country code(s) will be advised through a "pop up" window of contact information regarding the applicable national beacon registry based on information provided to COSPAS-SARSAT by the Administration.

24 If no information is available regarding the details of a national beacon registry for an Administration, COSPAS-SARSAT will assume that no such registry exists and will allow the direct registration of beacons with the Administration's country code(s) in the IBRD.

Controlling Beacon Registration at a National Level

25 If an Administration has elected to use the IBRD but wishes to control inputs to the IBRD at a national level, the national IBRD Point of Contact should so notify the COSPAS-SARSAT IBRD Database Administrator, and provide a description of the details of the national authority responsible for EPIRB registration.

26 The Administration will be able to upload in bulk its beacon registration data and, if desired, keep sole control of inputs or updates. In that case, beacon owners who attempt to register beacons with the Administration's country code(s) will be advised through a "pop up" window of national contact information for beacon registration.

27 The IBRD Database Administrator will provide national user identification and a password that will allow only the National Data Provider to register and modify existing registrations of beacons with the Administration's country code(s).

Means of Registration

28 COSPAS-SARSAT will only accept beacon registrations submitted via the online facilities provided by the IBRD. Beacon registrations submitted in paper format or via other communication facilities will not be accepted.

APPENDIX

Sample Letter for Contacting the COSPAS-SARSAT Database Administrator

Notification of Intent to use the IBRD and/or Request for IBRD
User Identification and Password

(Please modify this form as appropriate and fax or mail to the address below)

TO: COSPAS-SARSAT IBRD Administrator
COSPAS-SARSAT Programme, 700 de la Gauchetière West, Suite 2450
Montreal, Quebec H3B 5M2 Canada
Fax: +1 514 954 6750

I would like to request access to the COSPAS-SARSAT International Beacon Registration Database (IBRD) on behalf of [*country*] for the following purposes (*select as appropriate*):

- bulk uploading of data by our National Data Provider,
- IBRD queries by our authorized national SAR services,
- IBRD queries by our authorized ship and aircraft inspectors and maintenance facilities.

I request that a user identification and password be issued for each of the user categories selected above.

I understand that:

- each user identification and password provided is associated with a different level of access to the IBRD as specified in document C/S D.001, and that it is the responsibility of our National IBRD Point of Contact to appropriately distribute this information nationally; and
- it is the responsibility of the National Data Provider to ensure the accuracy and completeness of the data provided.

I designate the following to be [*country's*] National IBRD Point of Contact:

Name	
Full Mailing Address	
Telephone	
Facsimile	
E-mail	

Sincerely,

IMO or ICAO or COSPAS-SARSAT Representative

ANNEX 10

PROPOSED DRAFT REVISED RESOLUTION A.888(21)

CRITERIA FOR THE PROVISION OF MOBILE-SATELLITE
COMMUNICATION SYSTEMS IN THE GLOBAL MARITIME
DISTRESS AND SAFETY SYSTEM (GMDSS)

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention of the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety,

RECALLING ALSO that regulation IV/5 of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended in 1988, requires each Contracting Government to undertake to make available, either individually or in co-operation with other Contracting Governments, as they may deem practical and necessary, appropriate shore-based facilities for space and terrestrial radiocommunication services having due regard to the recommendations of the Organization,

TAKING INTO ACCOUNT resolution 322(Rev.Mob-87) of the World Administrative Radio Conference, 1987, relating to coast stations and coast earth stations assuming watchkeeping responsibilities on certain frequencies in connection with the implementation of distress and safety communications for the GMDSS,

TAKING INTO ACCOUNT ALSO resolution 3, Recommendation on the Early Introduction of the Global Maritime Distress and Safety System (GMDSS) Elements, adopted by the 1988 SOLAS Conference introducing the GMDSS,

NOTING resolution A.801(19) on the Provision of radio services for the GMDSS, as amended,

~~NOTING ALSO developments within the field of mobile-satellite communications,~~

NOTING FURTHER ALSO that future mobile-satellite communication systems might have the potential to offer maritime distress and safety communications,

NOTING FURTHER the decision of the Maritime Safety Committee at its seventy-ninth session that the International Mobile Satellite Organization (IMSO) is the appropriate organization to carry out the required oversight of mobile-satellite services for the GMDSS;

~~CONSIDERING~~ RECOGNIZING that mobile-satellite communication systems for use in the GMDSS should fulfil performance criteria adopted by the Organization,

RECOGNIZING that the Inmarsat system at present is the only mobile-satellite communication system recognized by SOLAS Contracting Governments for use in the GMDSS,

RECOGNIZING ALSO the need for the Organization to have in place criteria against which ~~to evaluate~~ the capabilities and performance, of mobile-satellite communication systems, ~~as may be notified to the Organization by Governments for possible recognition~~ for use in the GMDSS ~~may be verified and evaluated~~;

1. ADOPTS the Criteria for the Provision of Mobile-Satellite Communication Systems in the GMDSS set out in the Annex to the present resolution;

2. INVITES Governments, when permitting ships flying their countries' flag ~~to carry maritime mobile-satellite equipment for use in the GMDSS to require those ships to carry equipment which can utilize~~ ~~recognized regional~~ only those satellite systems that have been recognized by IMSO and conform to the Performance Standards adopted by the Organization for use in the GMDSS, in accordance with ~~on a national or regional basis, to apply~~ the criteria set out in sections 2 to 5 of the Annex;

3. ~~INVITES ALSO REQUESTS~~ the IMSO Maritime Safety Committee to:

(a) apply the criteria set out in the Annex to the present resolution, ~~via~~ ~~in particular~~ the procedure set out in section ~~42~~ of the Annex, for the evaluation of ~~when evaluating mobile-satellite communication satellite~~ systems notified by Governments for possible recognition for use in the GMDSS, ~~within the context of the~~ and to consider, in connection with decisions thereon, the provisions of relevant regulations of SOLAS chapter IV; ~~and~~

(b) ensure that, ~~for mobile-satellite communication systems to be recognized by the Organization for use in the GMDSS, they should be~~ ~~are~~ compatible with all appropriate SOLAS requirements, and also that ~~any~~ such recognition ~~should not result in substantial changes having to be made to~~ ~~takes into account~~ existing ~~operational~~ procedures and equipment performance standards; ~~and~~.

4. REQUESTS the Maritime Safety Committee to ~~(e)~~ keep this resolution under review and take appropriate action as necessary to secure the long-term integrity of the GMDSS.

ANNEX

CRITERIA FOR THE PROVISION OF MOBILE-SATELLITE COMMUNICATION SYSTEMS IN THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

1 GENERAL DEFINITIONS

1.1 Mobile-Satellite Communication System

The mobile-satellite communication system (satellite system) means the space segment, the arrangements for controlling the space segment, and the network control facilities controlling the access to the space segment, the earth stations and maritime mobile terminals operating in the system. The satellite system will include, or interface with, the following elements:

1. **Earth station** means any fixed satellite communication station acting as a gateway between the space segment and the terrestrial networks.
2. **Maritime mobile terminal** means any radiocommunication equipment working through a satellite communication system recognized for use in the GMDSS on board a ship.
3. **Space segment** means the satellites and the radiocommunication facilities they carry both for control and to provide GMDSS services and includes the forward and return communication links with the earth.
4. **Terrestrial networks** means the communication networks providing land-based subscriber communication facilities such as telephone, facsimile or data communications.

1.2 **Mobile-Satellite Communication Service** means any service which operates through a satellite system and is recognized by IMSO for use in the GMDSS.

2.21.3 Coverage area

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. This should be described in relation to any of the sea areas as defined in the SOLAS Convention, i.e. Sea Area A4 is an area outside sea areas A1, A2 and A3; Sea Area A3 is within the coverage of an Inmarsat geostationary satellite in which continuous alerting is available, excluding Sea Areas A1 and A2; Sea Area A2 is within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available; and Sea Area A1 is within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available.

2.3.1.4 Availability

2.3.1 The availability of a **any mobile-satellite communication system or service** is defined as the percentage of time in which the system or service as a whole is available for access to and communications through the system, *i.e.* calculated according to the following formula:

$$A = \frac{(\text{scheduled operating time}) - (\text{downtime})}{(\text{scheduled operating time})} \times 100\%$$

where:

Scheduled operating time = 100% of the time period being reported on; and
Downtime = the total time during the period for which the recognized GMDSS system or service was not operationally available.

2.3.2 **Note:** Definitions and calculations of availabilities of communications circuits in the Maritime Mobile-Satellite Service are given in ITU-R M.828-1.

2 RECOGNITION OF MOBILE-SATELLITE COMMUNICATION SYSTEMS FOR USE IN THE GMDSS

2.1 The evaluation, recognition and continuing oversight of satellite systems participating, or wishing to participate in the GMDSS is undertaken by IMSO.

2.2 Application for Recognition

1.1.2.2.1 ~~Mobile-satellite communication systems presented~~ providers wishing to participate in the GMDSS should apply to the Organization, through a Member State, for ~~evaluation and possible~~ recognition as a radio system providing the maritime distress and safety satellite communication capabilities necessary for use in the GMDSS. Such applications should be notified to the Organization by Governments, either individually or in co-operation with other Governments. The application will be reviewed by the Maritime Safety Committee (MSC) in relation to its policy for the expansion of satellite services in the GMDSS. If the MSC decides that there are no objections in principle to the application, it will forward the application to IMSO for evaluation and possible recognition.

2.2.2 The Governments concerned should make available to ~~the Organization~~ IMSO all necessary information relevant to enable it to evaluate the satellite system in relation to the criteria indicated below, ~~including proof of availability obtained in the mobile-satellite system concerned.~~

1.2 ~~Governments desiring, individually or in co-operation with other Governments within a specific SAR area, to provide coast earth station facilities for serving the GMDSS in particular areas as part of a recognized system, should notify the Organization as to the extent of continuous coverage and the extent of coverage from shore. This information should be determined by Governments in accordance with the criteria indicated below.~~

1.3 In particular, Governments proposing such mobile satellite communication systems for possible recognition and use in the GMDSS should ensure provide evidence to show that:

- .1 these mobile satellite communication systems conforms with all the criteria specified in this Annex;
- .2 only those systems are notified to the Organization for evaluation and possible recognition for use in the GMDSS; and
- .3 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; and
- .3 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 in keeping with the expectations of the Organization and the maritime industry on the continuity, durability and reliability of the service; 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.

2.3 Verification and Evaluation

1.4 ~~Notifications of mobile satellite communication systems proposed for evaluation and possible recognition for use in the GMDSS should be evaluated by the Maritime Safety Committee relative to the criteria specified in this Annex. Based on the results of the detailed evaluation, the Maritime Safety Committee will decide as appropriate, taking into account the provisions of the relevant regulations of chapter IV of the 1974 SOLAS Convention, as amended.~~

2.3.1 IMSO should verify and evaluate the information, seeking advice from an independent Group of Experts convened for the purpose and clarification as required direct from the service provider concerned, and decide whether the satellite system meets the criteria established by in this resolution. In reaching its decision, IMSO should take into account the provisions of the relevant regulations of chapter IV of the 1974 SOLAS Convention, as amended and the criteria established by this resolution.

2.3.2 Recognition by IMSO should be recorded in a Notice of Recognition which states, *inter alia*, the name and address of the company providing the services. A copy of the Letter of Recognition should be provided to the Organization for information.

2.3.3 If, following evaluation, IMSO is unable to recognize the Company or the service(s) offered for the GMDSS, IMSO should communicate this decision to the Company and the Organization in writing, setting out the reasons for the decision and any actions the Company may take to achieve recognition in the future.

2.4 The Public Services Agreement

2.4.1 Recognized services are subject to oversight by IMSO according to the rules and arrangements set out in a Public Services Agreement (PSA) concluded between the Service

Provider and IMSO. No maritime satellite system should be used in the GMDSS unless it has first been recognized by IMSO in accordance with the above procedure and the Service Provider has signed a Public Services Agreement with IMSO.

2.4.2 IMSO should conduct its oversight of the recognized services on a continuing basis.

2.4.3 Responsibility for ensuring compliance with the standards established by this annex, other relevant mandatory international instruments and, to the extent necessary, those recommendations, resolutions and procedures of IMO and ITU which are of a recommendatory nature, insofar as they relate to the provision of GMDSS services, rests with IMSO under the terms of the Public Services Agreement.

2.5 Reports

~~1.5 Governments providing mobile satellite communication systems recognized by the Organization for use in the GMDSS should, either individually or in co-operation with other Governments, ensure that these systems continue to conform to the criteria specified in this Annex and IMSO should, at least once a year, make available to the Organization for evaluation a report on the availability, and performance obtained and other relevant information concerning each recognized service during the period since the preceding report in accordance with section 3.5.2 of the criteria indicated below. The Maritime Safety Committee should evaluate such reports relative to the criteria specified in this Annex and take action as appropriate.~~

~~2.5.2 The Organization should include and maintain in the GMDSS Master Plan details of all areas covered by mobile satellite communication systems recognized for use in the GMDSS and of all areas covered by individual coast earth stations operating in those systems recognized as serving the GMDSS. The Organization should periodically circulate an updated copy of the description of these systems and areas to Governments.~~

3 CRITERIA AND REQUIREMENTS FOR THE RECOGNIZED MOBILE-SATELLITE COMMUNICATION SYSTEM

3.1 Functional requirements*

~~3.1.1 Mobile satellite communication systems for maritime distress and safety communication services and forming part of the GMDSS radio systems specified in chapter IV, regulation 5 of the 1974 SOLAS Convention, as amended, should be capable of processing provide capabilities for at least the following maritime distress and safety communications:~~

* - Resolution A.801(19) "Provision of Radio Services for the Global Maritime Distress and Safety System (GMDSS)", Annex 5 "Criteria for use when providing Inmarsat shore-based facilities for use in the GMDSS";
- Resolution A.887(21) "Establishment, Updating and Retrieval of the Information Contained in the Registration Databases for the Global Maritime Distress and Safety System (GMDSS)";
- Resolution A.694(17) "General requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids";
- IMO International SafetyNET Manual;
- Resolution A.664(16) "Performance Standards for Enhanced Group Call Equipment"; and
- Appropriate IEC Standards and ITU Recommendations.
(The list will be updated by the Secretariat)

- .1 ship-to-shore distress alerts/calls;
- .2 shore-to-ship distress relay alerts/calls;
- .3 ship-to-shore, shore-to-ship and ship-to-ship search and rescue co-ordinating communications;
- .4 ship-to-shore transmissions of Maritime Safety Information;
- .5 shore-to-ship broadcast of Maritime Safety Information; and
- .5.6 ship-to-shore, shore-to-ship, and ship-to-ship general communications.

3.2 Capacity

The satellite system should be designed for and should provide adequate channel and power capacity for processing effectively, and with an availability as stated in section 3.5, the maritime distress, urgency, safety and general communication traffic estimated to be required by the ships using the system.

3.3 Priority access

3.3.1 ~~Although current systems can recognize more levels, the capability is not implemented in all coast earth stations. In any case,~~

~~.2 The satellite system and the coast earth stations~~ Satellite systems in the GMDSS should be capable of processing maritime distress, urgency, safety and routine communications in accordance with the message priority as defined by the ITU Radio Regulations. The order of processing these communications should be:

- .1 distress;
- .2 urgency;
- .3 safety; and
- .4 routine (~~other~~ general communications).

3.3.2 In implementing these four levels of priority:

.1 Distress alerts and distress calls (level 1) should be given priority treatment by providing immediate access to satellite channels, and, for store and forward systems, distress alerts and calls should be placed ahead of all routine other traffic. ~~Any system currently being designed for use in the GMDSS after 1 February 1999 should be able to recognize the four levels of priority as described below:~~

3.3.1.1.2 Mobile satellite communication systems and coast earth stations used for providing other mobile-satellite communications in addition to maritime communications should be capable of automatically recognizing requests for maritime communications from:

- ~~ship earth stations~~ maritime mobile terminals; and
- recognized entities of critical importance for safety at sea, such as MRCCs, hydrographic and meteorological offices, medical centres, etc., registered with the ~~coast~~ earth station.

The system should process such maritime communications in the ship-to-shore and shore-to-ship directions for levels 1 to 3 with priority over other communications.

- .3 In processing maritime distress, urgency, safety and routine communications, the satellite system and the ~~coast~~ earth station should be capable of:
 - .1 automatically recognizing the message or access priority for ship-to-shore communications;
 - .2 automatically recognizing the message or access priority for shore-to-ship communications, if any are provided, from, as a minimum, recognized entities of importance for safety at sea, registered by the ~~coast~~ earth station;
 - .3 preserving and transferring the priority;
 - .4 giving distress alerts and distress ~~messages~~ calls immediate access, if necessary by pre-emption of ongoing communications of ~~level 4~~ routine priority;
 - .5 automatically recognizing maritime distress communications, and of routing automatically maritime distress alerts/~~messages~~ and distress calls directly to the ~~an~~ associated MRCC, or responsible RCC, if this capability exists; and
 - .6 processing maritime urgency and safety communications in the ship-to-shore and shore-to-ship directions with ~~adequate~~ the required priority, for example by allocating the first vacant channel, if no channel is immediately available; and
- .4 Selection and use of message or access priority for urgency and safety transmissions by ~~ship earth stations~~ maritime mobile terminals should preferably be automatic and should be restricted to calls to special, recognized entities such as medical centres, maritime assistance, hydrographic and meteorological offices, etc., ~~as defined for the coast~~ registered with the earth station. The ~~coast~~ earth station should automatically route such calls directly to the relevant entity.

3.4 Coverage area

3.4.1 The definition of the Coverage Area is given in section 2.

3.4.2 The Coverage Area is to be delineated on a map and also described in relation to the sea areas defined in Chapter IV regulation 2 of the SOLAS Convention. Documentation on the coverage area of the satellite system, as defined in section 1.3.2.2, should be forwarded to the Organization.

3.4.3 Information on coverage areas for satellite systems ~~accepted by the Organization, as forming part of the GMDSS,~~ should be published by the Organization in the GMDSS Master Plan.

3.5 Availability

3.5.1 The satellite system should provide continuous availability for maritime distress and safety communications in the ship-to-shore and shore-to-ship directions.

3.5.2 The availability of the space segment, provision of spare satellite capacity and the network control function (i.e. the network availability), as defined in section 2.3.1.4 above, should be continuously monitored by IMSO, which should report ~~and reports~~ on the recorded availability of the system ~~should be given~~ to the Organization at least once every year.

3.5.3 Service providers should ~~be obligated to advise the Organization and their associated RCCs and IMSO~~ of planned outages of recognized services and advise ships of scheduled downtime and known interruptions in service and any other relevant network information. Service providers should also advise IMSO of unscheduled interruptions in any recognized services, as soon after the commencement of the interruption as possible, and when the recognized services have been restored.

~~3.63.5.4~~ Network availability. ~~The following minimum values of availability are recommended expected for the complete mobile-satellite communication network, including coast earth stations:~~ .1 ~~for ship to shore distress priority alerts calls:~~ for the recognized services is expected to achieve at least 99.9% availability (equivalent to a total of 8.8 hours down time per year); and

.2 ~~for other maritime communications in ship to shore and shore to ship directions:~~ 99.5% (equivalent to 43.8 hours down time per year).

3.76 Restoration and spare satellites

3.76.1 Spare satellite capacity and arrangements prepared in advance should be provided for ensuring ~~that~~, in the event of a partial or total satellite failure, ~~restoration of the~~ recognized maritime distress and safety communication services ~~can be restored~~ in the area concerned to their normal availability, within no more than one hour after the event of a satellite failure.

3.76.2 ~~Adequate~~ Full information on the means and arrangements prepared for restoration of the maritime distress and safety communication services in the event of a satellite failure should be notified to ~~the Organization~~ IMSO. IMSO and the Service Provider should conduct exercises from time to time to prove the efficiency and effectiveness of these planned arrangements.

3.87 Identification

The satellite system should be capable of automatically recognizing and preserving the identification of maritime mobile earth stations.

3.98 Information to be made available to SAR authorities

For all distress urgency and safety communications, the ~~Mobile Earth Station I~~ maritime mobile terminal identification Number or Maritime Mobile Service Identity (MMSI) should be an integral part of the distress alert and provided to the RCC with the alert. When available, all additional registration, commissioning or other data relevant to the search and rescue or prosecution of false alert should be referenced to this number and made available to the proper SAR authority or RCC upon request.

3.109 Reception of distress alerts

The satellite system should allow for addressing a maritime distress alert to a specific ~~coast earth station~~ MRCC chosen by the ship's operator and covering the area concerned, but should also provide for automatic routing of manually initiated ~~response to~~ maritime distress alerts ~~even if no specific CES is selected.~~ Means should be provided to allow the MRCC to easily identify the system and specific mobile station from which an alert or other priority message has been received, to enable the MRCC to establish shore-to-ship communications with the ship concerned.

3.110 Control of ~~ship earth stations~~ maritime mobile terminals

Access control arrangements for controlling and giving, or temporarily rejecting, access for ~~ship earth stations~~ maritime mobile terminals to the system should at ~~any~~ all times allow ~~ship earth stations~~ maritime mobile terminals access for transmission of maritime distress alerts/calls and distress messages.

3.121 Test facilities

The system should provide facilities making it possible for ~~ship earth stations~~ maritime mobile terminals to test the distress capability of their stations without initiating a distress alert/call.

4 CRITERIA AND REQUIREMENTS FOR ~~COAST~~ EARTH STATIONS

4.1 Functional requirements

4.1.1 ~~Coast earth~~ Earth stations serving the GMDSS should:

- .1 be in continuous operation;
- .2 be connected to an associated RCC;
- .3 keep continuous watch on all appropriate satellite communication channels; and
- .4 be capable of transmission and reception of at least the following maritime distress and safety communications services included in paragraph 3.1:
 - ~~.4.1~~ ship to shore distress alerts/calls;
 - ~~.4.2~~ shore to ship distress relay alerts/calls;

~~4.3 ship-to-shore, ship-to-ship and shore-to-ship search and rescue co-ordinating communications;~~

~~4.4 ship-to-shore and shore-to-ship transmissions of Maritime Safety Information; and~~

~~4.5 ship-to-shore, ship-to-ship and shore-to-ship general communications.~~

Note: ~~Coast eEarth stations operating in the Inmarsat-C system should be capable of transmission of Maritime Safety Information in the shore-to-ship direction via the Inmarsat SafetyNET service.~~

4.2 Priority

4.2.1 The ~~coast~~ earth station should be capable of automatically recognizing the priority of ship-to-shore and shore-to-ship communications, and should preserve the priority and process maritime mobile communications ~~for~~ **with** the ~~following~~ four levels of priority specified in paragraph 3.3.1:

~~1~~ — distress;

~~2~~ — urgency;

~~3~~ — safety; and

~~4~~ — other communications.

4.2.2 Priority access should be given for distress alerts and calls in real time. ~~Although the current system can recognize more than two levels of priority, the capability is not implemented in all coast earth stations.~~ In any case, distress alerts and calls should be given priority treatment by providing immediate access to satellite channels, and distress alerts and calls for store and forward systems should be placed ahead of all routine traffic. Any **satellite** system ~~currently being~~ designed for use in the GMDSS ~~after 1 February 1999~~ should be able to recognize the four levels of priority and give appropriate access for communications in the ship-to-shore direction and in the shore-to-ship direction for distress, urgency and safety traffic originated by RCCs or other Search and Rescue Authorities.

4.2.3 Limitations in existing public switched networks on facilities for indication and use of priority access codes might necessitate special arrangements such as use of leased lines between, for example, MSI providers and the ~~coast~~ earth station, until such facilities become available in the public switched network.

4.3 Pre-emption

4.3.1 **Satellite systems participating in the GMDSS should make arrangements to ensure that it will always be possible for an MRCC to obtain an immediate connection to a maritime mobile terminal on demand. This may be achieved by a process of pre-emption or by other suitable means approved by IMSO.**

4.34 Routing of maritime distress alerts

4.34.1 The ~~coast earth station~~ satellite system should have reliable communication links to ~~an~~ one or more associated MRCCs. These links may be implemented directly between the MRCC and an earth station, or some other suitable point in the system's network. The arrangements between the system and the MRCC are subject to approval by the national administration.

4.34.2 The ~~coast earth station~~ system's network should be capable of automatically recognizing maritime distress and safety communications and of routing, as far as possible automatically, the maritime distress alerts/calls directly to the associated MRCC, via a highly reliable communication link. In cases where capability exists, ~~CESS~~ the system may route alerts directly to the responsible RCC as defined in the IAMSAR Manual.

4.34.3 The ~~coast earth station~~ or other relevant part of the system's network should be provided with an aural/ and visual alarm to alert a designated responsible person in the event that ~~appropriate~~ automatic connection to the MRCC cannot be achieved within 60 seconds. In this case, all necessary action should be taken to immediately inform the MRCC of the details of the distress alert or call. Personnel should always be available to react to such an alarm so as to ensure that the distress alert or call can be forwarded to an MRCC within 5 minutes of the alarm being triggered. All messages with distress or urgency priority should sound an alarm at the earth station or other relevant part of the system's network, which should require manual cancellation.

4.34.4 The ~~coast earth station~~ MRCC should be provided with reliable communication links to the MRCC system's network for efficient handling of shore-to-ship distress alert relays alerts and distress traffic, preferably via dedicated communication links.

4.45 Identification

The ~~coast earth station~~ system should be capable of automatically identifying ship earth stations. If another identification than the Maritime Mobile Service Identity (MMSI) is used in the system, a means should ~~shall~~ be provided 24h a day to easily identify the ship by ~~cross referencing to the ship's MMSI number~~, and to provide all the appropriate additional information, including the MMSI number where available, to the MRCC necessary for effecting the rescue.

4.56 Voice communication systems

4.56.1 The communication links for mobile-satellite voice communication systems should be connectable to the public switched network in accordance with relevant ITU-T Recommendations.

4.56.2 ~~Coast earth stations~~ Satellite systems using the public switched network for routing maritime distress alerts/calls and distress traffic to and from ~~its associated~~ MRCCs should, upon receipt of ship-to-shore or shore-to-ship distress alerts/calls or distress traffic, immediately attempt to establish the connection necessary for transfer of the distress alert or distress message.

4.67 Data communication systems

4.67.1 The communication links for mobile-satellite data communication systems should be connectable to the public data communication network in accordance with relevant ITU-T Recommendations. The system should provide capability for transfer of the identity of the called

subscriber to the calling subscriber. Maritime distress alerts/calls and distress messages should include the ship identity and the ~~coast~~ earth station identity **or other means of identifying the point of access to the satellite network.**

4.67.2 ~~Coast earth stations~~ **Satellite systems** using the public switched network for routing distress alerts/calls and distress traffic to and from ~~its associated~~ MRCCs should, on receipt of ship-to-shore or shore-to-ship distress alerts/calls or distress traffic, immediately attempt to establish the connection necessary for transfer of the distress alert or distress message.

4.78 Store and forward systems

~~Coast earth stations~~ **Satellite systems using** for store and forward communication systems should:

- .1 make an initial attempt to deliver a ship-to-shore or shore-to-ship message within 60 **seconds** for any maritime distress alert or distress traffic, and 10 **minutes** for all other maritime messages, from the time the receiving station receives the message. The message should include the ship identity and the ~~coast~~ earth station **or system** identity; and
- .2 generate notification of non-delivery immediately once the message is considered non-deliverable, for maritime distress alerts and distress messages not later than 4 **minutes** after the reception of the alert or message.

4.89 Facilities for broadcast of Maritime Safety Information

4.89.1 ~~Maritime mobile-s~~ **Satellite communication** systems forming part of the GMDSS should technically be capable of offering facilities for broadcast of Maritime Safety Information (MSI) ~~by direct printing~~ from MRCCs and authorized providers of MSI, such as Hydrographic Offices and Meteorological Offices, to ships at sea.

4.89.2 Such facilities for broadcast of MSI should provide for automatic, continuous and reliable reception on board ships and should, as a minimum, fulfil the requirements specified in sections 4.9.3 to 4.9.8 below.

4.89.3 The facilities should provide for recognition of and processing the ~~following~~ four levels of priority **specified in paragraph 3.3.1:**

- ~~.1 — distress;~~
- ~~.2 — urgency;~~
- ~~.3 — safety; and~~
- ~~.4 — other communications.~~

4.89.4 It should be possible to address the broadcast of MSI to all properly equipped ships within a specified area for at least the following types of areas:

- .1 the entire region covered by the satellite or system over which the transmission is made;

- .2 the NAVAREAs/METAREAs as established by the International Maritime Organization (IMO), the International Hydrographic Organization (IHO) and the World Meteorological Organization (WMO) respectively; and
- .3 a temporary area chosen and specified by the originator of the MSI message, including circular or rectangular user-specified areas specifications appropriate for broadcast of distress ~~relay~~ alerts relays and search and rescue co-ordinating communications.

4.89.5 The facilities should provide for transmission of at least the following types of Maritime Safety Information required by SOLAS, as follows:

- .1 search and rescue co-ordination information, including distress ~~relay~~ alerts relays;
- .2 navigational warnings; and
- .3 meteorological warnings and forecasts.

4.89.6 The facilities for broadcast of navigational and meteorological warnings should include possibilities for:

- .1 scheduling the broadcast at fixed times or transmitting messages as unscheduled broadcast transmissions; and
- .2 automatic repetition of the broadcast with time intervals and number of broadcast transmissions as specified by the MSI provider, or until cancelled by the MSI provider.

4.89.7 The facilities should provide for marking MSI messages with a unique identity, making it possible for the shipborne equipment for reception of these broadcasts to automatically ignore messages already received.

4.89.8 The broadcast facilities ~~may~~ service should in addition provide facilities for broadcasts similar to NAVTEX to coastal areas not covered by the International NAVTEX Service, in accordance with the identification system (*i.e.*, the identification characters B1, B2, B3, B4) used in the International NAVTEX Service.

5 ADDITIONAL RECOMMENDED CAPABILITIES

5.1 Mobile-satellite service providers ~~should be~~ are encouraged to:

- 5.1 route Automatic Location Identification (ALI) and Automatic Number Identification (ANI) in accordance with appropriate ITU-T Recommendations with distress calls originating from MSS terminals directly to responsible RCCs for voice and data calls;
- 5.2 automatically route information contained in registration databases in accordance with resolution A.887(21) in a recognizable format with the distress call to the responsible RCC, once means are established for doing so; and

5.3 be capable of retrieving maritime safety information in a timely manner from NAVAREA, METAREA, other relevant co-ordinators, and the International Ice Patrol Service, in a standard format and process established by those co-ordinators; ~~and.~~

~~5.4 broadcast maritime safety information (MSI) in accordance with the relevant provisions of the IMO International SafetyNET Manual.~~

6 NOVEL TECHNIQUES

Satellite systems may be permitted to use novel techniques to provide any of the capabilities required by this resolution. Approval to use such novel techniques for a period of up to 12 months may be given provisionally by IMSO in order to allow early introduction and proper evaluation of the technique. Final recognition of a novel technique may be given by IMSO only after receiving a report allowing full technical and operational evaluation of the technique.

7 LEGACY SERVICES

7.1 All satellite-based systems and services for the GMDSS which were already approved and in use before the entry into force of this resolution are exempt from the requirements of paragraphs 2.1, 2.2 and 2.3. These systems are:

- [.1 Inmarsat-A (due to be withdrawn 31 December 2009)
- .2 Inmarsat-B
- .3 Inmarsat-C
- .4 Inmarsat-E 1.6 GHz EPIRBs (due to be withdrawn 30 November 2006)
- .5 COSPAS-SARSAT 406MHz EPIRBs
- .6 The International SafetyNET Service]

* *see footnote.*

7.2 The services defined in paragraph 7.1 are subject to requirements of paragraph 2.4.

* IMO has decided that Inmarsat Fleet 77 already meets the requirements of Assembly resolution A.888(21) and recommended that Fleet 77 terminals should be used in GMDSS ship installations and by Rescue Co-ordination Centres.

ANNEX 11**LIAISON STATEMENT TO ITU STUDY GROUP 2 ON CELLULAR PHONES IN SAR SERVICES**

In recognition of the increasing use and value of cellular phones in Search and Rescue (SAR) services, the International Maritime Organization's COMSAR Sub-Committee requests that the ITU be approached concerning the possibility of creating a single common international phone number for possible use by, or on behalf of any person in distress at sea within range of national cellular networks. Calls to this number will be directly routed to the national SAR Authority (MRCC) within the applicable Search and Rescue Region (SRR) from which the call is made, along with positional and caller identification information as is able to be made available. This common international phone number could be promulgated in nautical publications.

ANNEX 12**TERMS OF REFERENCE AND PROVISIONAL AGENDA FOR THE THIRTEENTH SESSION OF THE ICAO/IMO JOINT WORKING GROUP ON THE HARMONIZATION OF AERONAUTICAL AND MARITIME SEARCH AND RESCUE**

- 1 This Joint Working Group (JWG) is established to develop recommendations and information to support the IMO Sub-Committee on Radiocommunications and Search and rescue and/or ICAO, as appropriate, on any matters pertinent to harmonization of international maritime and aeronautical SAR.
- 2 The JWG will meet as necessary, subject to approval of the IMO Maritime Safety Committee and ICAO, with meetings hosted and supported by IMO and ICAO on an alternating basis.
- 3 Invitations to participate in the JWG will be submitted to respective Member States by both IMO and ICAO.
- 4 Language services will not be provided during JWG meetings.
- 5 JWG meetings will generally take place annually about midway between meetings of the IMO Sub-Committee on Radiocommunications and Search and Rescue.
- 6 The JWG will provide an active interface between IMO and ICAO for harmonization of maritime and aeronautical SAR plans and procedures in accordance with the 1985 MoU between IMO and ICAO, and with resolution 1 of the 1979 International Conference on Maritime Search and Rescue.
- 7 The JWG will review and develop proposals relating to harmonization in various matters including:
 - a) provisions of conventions, plans, manuals and other documents affecting SAR;
 - b) SAR operational principles, procedures and techniques;
 - c) SAR system administration, organization and implementation methods;
 - d) RCC/RSC equipment and facility designations and standards;
 - e) SAR communications; and
 - f) SAR personnel staffing and training.
- 8 Need for JWG continuation will be reviewed by IMO and ICAO on an ongoing basis; the JWG will be discontinued when either organization concludes the work is no longer cost effective, and formally informs the other of its decision to discontinue.

**PROVISIONAL AGENDA FOR THE THIRTEENTH SESSION
OF THE JOINT WORKING GROUP ICAO/IMO ON THE HARMONIZATION OF
AERONAUTICAL AND MARITIME SEARCH AND RESCUE**

- 1 Adoption of the agenda**
- 2 Consideration of terms of reference – future work of the Joint Working Group and priorities:**
 - .1 briefing on the outcome of COMSAR 10 and MSC 81;
 - .2 briefing on outcome of ICAO activities related to the Joint Working Group work; and
 - .3 Joint Working Group role in facilitating improved subregional co-operation.
- 3 Provisions of conventions, plans, manuals and other documents affecting SAR:**
 - .1 status of the Maritime SAR Convention;
 - .2 progress report on the possible alignment of the IMO Area SAR Plans, GMDSS Master Plan and ICAO Regional Air Navigation Plans;
 - .3 further work on the IAMSAR Manual, availability for training – institutions, priority items for amendments; and
 - .4 list of references to the IAMSAR Manual.
- 4 SAR operational principles, procedures and techniques:**
 - .1 safety of passenger ships;
 - .2 mass rescue operations, taking account of experiences from major disasters;
 - .3 medical assistance in SAR services, including SAR response and hypothermia;
 - .4 effects of measures to enhance maritime and aeronautical security on SAR services;
 - .5 development of procedural strategies for the practical provision of SAR services;
 - .6 automated SAR planning theories, tools and systems; and
 - .7 SAR over land/inland SAR applicable to aeronautical SAR.
- 5 SAR system administration, organization and implementation methods:**
 - .1 regional SAR databases i.e. SDP, facilities;
 - .2 development of guidelines for subregional arrangements;
 - .3 quality assurance, improvement, needs assessment, (subregional) and resource allocation;
 - .4 development and use of decision support systems and risk management tools;
 - .5 implementation and operation of the “International SAR fund”; and
 - .6 evaluate the effect of various Technical Co-operation projects in co-operation with relevant Governments, organizations and agencies with a view to assess their impact on implementing and maintaining SAR services.

6 RCC/RSC equipment and facility designations and standards:

- .1 establishment of RCCs and in particular JRCCs; and
- .2 regional RCCs.

7 SAR communications:

- .1 status of the GMDSS;
- .2 status of aeronautical communications systems for distress and SAR;
- .3 future trends in SAR communications;
- .4 minimum communications needs for RCCs; and
- .5 use of AIS and LRIT in aeronautical and maritime SAR.

8 SAR personnel staffing and training:

- .1 development of RCC Staff Certificates;
- .2 development of joint SAR courses based on the IAMSAR Manual; and
- .3 continued proficiency of SAR personnel.

9 Any other business

10 Report to ICAO and the COMSAR Sub-Committee

ANNEX 13**DRAFT MSC CIRCULAR**

Ref. T2-OSS/1.4

MSC/Circ.[....]
.. May 2006**GUIDANCE ON EXCHANGE OF MEDICAL INFORMATION BETWEEN
TELEMEDICAL ASSISTANCE SERVICES (TMAS) INVOLVED
IN INTERNATIONAL SAR OPERATIONS**

1 The Maritime Safety Committee (MSC), at its eighty-first session (10 to 19 May 2006), recalled that MSC 72 had approved MSC/Circ.960 on Medical Assistance at Sea and attached guidance on Medical Assistance at Sea and Importance of the Role of Telemedical Assistance Services and Medical Assistance at Sea and Maritime Radiocommunications, as set out in annexes 1 and 2 to the circular, accordingly.

2 Having considered the recommendations of the Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) made at its tenth session (6 to 10 March 2006) and recognizing that the use of a common form would facilitate the transfer of all available and relevant medical information between two telemedical assistance services (TMAS), the Committee approved Guidance on exchange of medical information between telemedical assistance services (TMAS) involved in international SAR operations, as set out in the annex.

3 Member Governments are invited to bring the annexed Guidance to the attention of TMAS, SAR service providers and others concerned.

ANNEX

GUIDANCE ON EXCHANGE OF MEDICAL INFORMATION BETWEEN TELEMEDICAL ASSISTANCE SERVICES (TMAS) INVOLVED IN INTERNATIONAL SAR OPERATIONS

1 Introduction

1.1 The purpose of this circular is to provide guidance on exchange of medical information between two telemedical assistance services (TMAS) involved in SAR operations for medical assistance at sea when an international co-operation is required.

1.2 The MSC/Circ.960 on medical assistance at sea:

- states that an optimal arrangement for medical assistance at sea is based on the following five elements:
 - one or more RCCs;
 - a telemedical assistance service (TMAS);
 - means of intervention at sea;
 - shore-based arrangements;
 - common operational procedures,
- informs or reminds States of the elements of a global system of medical assistance at sea and encourages those which had not yet done so to set up such a system (which to a large extent uses existing elements), including an officially designated maritime telemedical assistance service,
- defines the objectives, capacities and planning of a TMAS,
- and lists the means of radiocommunication essential for medical assistance at sea.

2 Need for exchange of medical information between TMASs

2.1 Given the international dimension of maritime navigation, a medical problem may occur on board a ship far from its country of origin. In such a case the master, who is responsible for the care of those on board, normally calls his designated national TMAS, which can perform a telemedical consultation in his language. Should there be need, following telemedical consultation, for an evacuation to the nearest shore, the master contacts the MRCC responsible for SAR operations in the maritime zone concerned.

2.2 In order to facilitate and enhance planning of the medical aspects of a SAR operation involving medical assistance at sea, all available medical information collected by the TMAS carrying out the telemedical consultation should be transferred to the TMAS attached to the responsible MRCC. This is to avoid an additional teleconsultation by the second TMAS.

3 A common “Medical Information Exchange Form”

A common form for the exchange of medical information would facilitate the transfer of all available and relevant medical information between the two TMASs (see appendix).

4 Guidance on exchange of medical information

On the basis of international partnership agreements, the “medical information exchange form” should be used for SAR operations involving medical assistance at sea, as follows:

- when, following a telemedical consultation, a TMAS requires a medical evacuation, the physician should complete the medical information exchange form;
- once the MRCC responsible for the SAR operation has been identified, the TMAS will transmit the form to the corresponding TMAS partner of the MRCC concerned;
- the MRCC should thus be informed by its designated national TMAS of the medical constraints affecting the SAR operation; and
- after the completion of the SAR operation, the operational TMAS will send any available information on medical follow-up to the TMAS that had performed the remote consultation.

Appendix

IDENTIFICATION OF THE REQUIRING TMAS:

Name:
 Address: Tel:
 Fax:
 E-mail:

CONFIDENTIAL MEDICAL INFORMATION

**MEDICAL ASSISTANCE AT SEA
 TMAS - TMAS Medical Information Exchange Form**

To: TMAS:
 (via MRCC if necessary:)

Date:/...../..... Time:h..... Physician: Dr.....

PATIENT

Surname: First Name:
 Date of Birth:/...../..... Age: Sex: M F
 Nationality: Occupation on board:

MEDICAL CIRCUMSTANCES

<input type="checkbox"/> Illness
<input type="checkbox"/> Accident
<input type="checkbox"/> Poisoning
Since:

.....

<i>Previous Medical History</i>	Ongoing Treatments	Care on board before Teleconsultation
.....
.....

MEDICAL OBSERVATION

Pulse: / min	BP: mmHg
BR: / min	T: °C
Weight: Kg	
Height: m	

.....

Diagnosis(es) given:

IDENTIFICATION OF THE REQUIRING TMAS:

Name:
Address:
.....

Tel:
Fax:
E-mail:

MEDICAL INSTRUCTIONS

.....
.....
.....

MEDICAL ASSISTANCE REQUIRED

- Medical Decision: Ship diversion to (Port):
 Ambulance
Medical Team: Doctor Nurse Paramedic
- Medical Evacuation
Medevac Time frame: Immediate Daylight hours
.....
Medevac Method: Land on Winch/stretchers Winch/Strop
.....
Medical Team: Doctor Nurse Paramedic
- Air Drop of supplies:
.....
.....
- Quarantine situation
.....
.....

SHIP

Ship Name: Call Sign:
Type: Flag:
Location:
Port of Origin: Departure/DTG:
Destination: ETA / DTG:

Contact:

Please send back all the available follow-up information to :

TMAS Name:
Address:
.....

Tel:
Fax:
E-mail:

ANNEX 14

LIAISON STATEMENT TO WHO / ILO

addressing the issue of

**Replenishing ships' compulsory medical supplies and status of medical supplies on board:
Problems encountered and proposals**

The IMO Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), whilst considering the issue of Replenishing ship's compulsory medical supplies and status of medical supplies on board, prepared a report (attached at annex) on problems encountered and proposals to facilitate the conditions of issuing medicines to replenish and maintain these supplies.

The Sub-Committee invites WHO and ILO to consider the annexed report and provide their advice to IMO in time for proper consideration at COMSAR 11 scheduled to take place in February 2007.

ANNEX

Replenishing ships' compulsory medical supplies and status of medical supplies on board: Problems encountered and proposals

1 Introduction

1.1 At its seventy-fifth session, the Maritime Safety Committee (MSC) approved MSC/Circ.1042 entitled "*List of contents of the emergency medical kit/bag and medical considerations for its use on ro-ro passenger ships not normally carrying a medical doctor*" (attached).

1.2 At its eighth session (16 to 20 February 2004), the COMSAR Sub-Committee re-examined and approved the final text of "*Guidance on responsibility and liability issues related to the use of the emergency kit/bag and evaluation of its use in emergency incidents*" (MSC/Circ.1105) (attached).

1.3 In accordance with the requirement to report to the Organization on experience gained and problems encountered in the use of the emergency medical kit/bag (EMK), the COMSAR Sub-Committee at its tenth session (6 to 10 March 2006) reviewed the situation following application of MSC/Circ.1042 and 1105 and made proposals accordingly.

1.4 This document addresses problems encountered in replenishing on-board medical supplies due to the differences in the health regulations in different countries and reflects on matters relating to the conditions for issuing medicines to replenish and maintain these supplies.

2 Problems encountered

2.1 During the introduction of the EMK it has become apparent that, under some countries' health regulations, it was difficult or impossible to issue certain medicines-even those which are mandatory under international and/or national maritime regulations, because:

- .1 certain medicines require a medical prescription to be issued by a pharmacy; and
- .2 some medicines on the list are reserved either for hospital use or for emergency use by doctors. These medicines are therefore not available in pharmacies or cannot be issued by other than hospital pharmacies.

Introduction of the EMK is thus jeopardized because certain countries' health care regulations are out of step with the international recommendations relating to MSC/Circ.1042 and MSC/Circ.1105.

3 Proposals

3.1 Status of on-board medical supplies: The pharmacy on board should be officially recognized by the national and international health authorities as an authorized stock of medicines, under the responsibility of the master and in accordance with the official list established by the competent national maritime/health authorities.

3.2 Issue of medicines: All medicines intended for replenishing and maintaining ships' compulsory medical supplies should be regulated by national health authorities, on the basis of an official list established by the competent maritime and health authorities in compliance with the international and national regulations. It should be possible for any authorized pharmacy to issue these medicines.

3.3 Order Form: To facilitate and monitor this process, a pre-printed order form could be used (model attached). It should be recognized by the national and international health authorities and bear information relevant to the ship as well as the signature of either the person responsible for medical care on board or of the shipowner's representative. Presentation of the order form should enable stocks of medicines to be replenished through authorized distributors, in countries the ship visits.

Appendix

**MODEL ORDER FORM FOR MEDICINES INCLUDED IN SHIPS' COMPULSORY
 MEDICAL SUPPLIES**

**ORDER FORM
 FOR ESTABLISHING / REPLENISHING SHIPS' COMPULSORY ON-BOARD
 MEDICAL SUPPLIES: "EMERGENCY MEDICAL KIT/BAG"**

Shipowner: Ship: Name of Master/Shipowner's representative: Address:	Pharmaceutical company/Pharmacist
	Name: (stamp) Address:

International Common Denomination (ICD)/ATC	Trade name of medicine issued	Method of application	Dosage	Quantity required according to regulations	Quantity requested	Quantity issued
<i>Generic name</i>						
Atropine (example)		parenteral	phial 0.5 mg / 1 ml	3		
.....		
.....						

Under the current international and national regulations on ship safety, this ship carries:
 an **Emergency Medical Kit/Bag**.

ANNEX 15

**JUSTIFICATION FOR THE NEED FOR EXTENSION OF THE WORK PROGRAMME
ITEM “MEDICAL ASSISTANCE IN SAR SERVICES” TO 2007**

The Sub-Committee was of the opinion that the following issues should be considered:

- Qualification and training of medical teams involved in SAR operations.
- Training of SAR crews on Cardio Pulmonary Resuscitation (CPR) after rescue from the water.
- Follow-up on problems encountered and proposals for replenishing ship's compulsory medical supplies and status of medical supplies on-board.
- Proposal for a common form to guide medical teleconsultation with TMAS.
- Amendments to the IAMSAR Manual on Medical Assistance according to MSC/Circ.960 (Australia, France, Germany, Italy, New Zealand and the United Kingdom).

ANNEX 16

DRAFT MSC CIRCULAR

Ref. T2-OSS/1.4

MSC/Circ.[...]
.. May 2006

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL
AERONAUTICAL AND MARITIME SEARCH
AND RESCUE (IAMSAR) MANUAL**

1 The Maritime Safety Committee (MSC), at its eighty-first session (10 to 19 May 2006), having been informed that the International Civil Aviation Organization (ICAO) had approved the amendments to the IAMSAR Manual prepared by the Joint ICAO/IMO 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 tenth session (6 to 10 March 2006), adopted the annexed amendments in accordance with the procedure laid down in resolution A.894(21).

2 The Committee decided that the amendments should enter into force on [1 June 2007].

ANNEX

SECTION 1

PROPOSED AMENDMENTS TO THE IAMSAR MANUAL – VOLUME I

1 Chapter 1

- Delete present paragraphs **1.3.1** and **1.3.2** and add the following text:
 - “**1.3.1** As Party to the International Convention for the Safety of Life at Sea (SOLAS), the International Convention on Maritime Search and Rescue, or the Convention on International Civil Aviation, a Party undertakes to provide certain aeronautical and/or maritime SAR co-ordination and services. The international community expects these commitments to be fulfilled.
 - 1.3.2** These services can be provided by States individually establishing effective national SAR organizations, or by establishing a SAR organization jointly with one or more other States. The role of agreements and plans in establishing SAR services will be discussed throughout this Manual.
 - 1.3.3** Every State should have in place statutes and related provisions that establish a legal foundation for establishing a SAR organization and its resources, policies, and procedures.
 - 1.3.4** SAR managers should seek legal advice on how domestic and international laws pertain to SAR policies and procedures.
 - 1.3.5** State legislative provisions should be aligned with accepted principles of international law, and may serve purposes such as:
 - recognizing the SAR function as a State responsibility;
 - implementing IMO and ICAO requirements and standards;
 - designating SAR agencies and their general responsibilities; and
 - defining the jurisdiction and legal authority of the RCC in accordance with relevant standards of ICAO and IMO.”.
- Move the legal advice found in sections **5.4.18** to **5.4.20** to section 1.3 and renumber the three sections as **1.3.6** to **1.3.7** respectively.
- Add following at the end of section **1.5.6**:

“Legislation could provide for use of military and other public resources to support SAR”.

2 Chapter 2

- Delete the word “particular” in the fifth sentence of section **2.2.8** and substitute with the word “pre-planned”.
- In section **2.2.4**, add the following new sentence after the first sentence:
“If alerting posts are used, the RCC or RSC should ensure that the alerting post is well-qualified to carry out its responsibilities.”.
- In section **2.2.10**,
the first sentence should start:
“SAR personnel should have national legislative authority for ...”
and the second sentence should start:
“Except in rare cases, related communications ...”.
- Replace first paragraph in section **2.3.11** with following:
“RCCs perform administrative and operational duties. Administrative duties, including planning, co-operation with providers of facilities, exercises and case studies, are concerned with maintaining the RCC in a continuous state of preparedness. In areas of low SAR activity the administrative duties are of high importance since they are the best way to keep the staff in readiness for SAR cases. The administrative duties should be shared so that more than one person is capable of performing these duties. Effective administrative actions help to ensure proficient SAR operations. SAR operations are the responsibility of the SMC and this responsibility may be met by the RCC chief or by other properly trained staff of the RCC. Personnel from services or organizations providing facilities can be used as part of the RCC team if they are duly trained and qualified. They will normally serve in support of expert functions such as firefighting, or air or marine safety. The RCC must be prepared to undertake and continue operational duties 24 hours per day. This level of readiness requires that multiple persons be trained and qualified to assume SMC duties.”.
- In section **2.3.11(a)** edit the last sentence to read:
“... oversee, if not delegated, the daily operations ...”.
- In section **2.3.11(b)**,
edit the first sentence to read:
“... who are trained and capable of planning ...”
and edit the last sentence to read:
“... continuous staffing, or only has one trained and capable RCC person on duty, provision ...”.

- In section **2.3.11(c)** edit the first sentence to read:

“An SMC should be designated for each specific SAR operation, and adequate numbers of personnel qualified to perform the SMC function must be readily available on a 24 hour basis.”.

3 Chapter 5

- Delete present paragraph **5.2.13** and replace it with following:

“**5.2.13** A SAR plan may be supported by legislation or regulations if necessary, or may be a self-supporting memorandum of understanding (MOU) between appropriate agencies. Ratification of an MOU at the Ministry level recognizes the importance of SAR, while allowing for an easier revision process than higher-level agreements would allow.”.

- Add to end of paragraph **5.2.14**:

“Appendix I contains sample text and guidance for a national SAR plan.”.

- Add new paragraph **5.2.15**:

“**5.2.15** Appendix [M] [K] contains sample text to describe arrangements for the division of responsibilities between the Rescue Co-ordination Centre (RCC) and the Air Traffic Services (ATS) provider as component organizations contributing to the national emergency response system for aircraft.”.

- Renumber old paragraphs **5.2.15** to **5.2.18** as **5.2.16** to **5.2.19**.

- Delete first paragraph of present **5.3.6** and replace with following:

“SAR operations are normally carried out under the direction and supervision of an SMC who is usually the supervisor of the RCC or RSC watch team. In multiple incident situations this officer could be SMC for all incidents, or for some of those incidents, the SMC role could be delegated to another suitably qualified member of the watch team. The SMC should in all cases be supported by RCC watch team members to undertake functions in the co-ordinating process such as communications, plotting, logging and search planning. For complex cases or those of long duration the assisting team must be replaced at regular intervals as well as the SMC. The SMC must be able to competently gather information about emergencies, transform emergency incident information into accurate and workable plans and dispatch and co-ordinate the facilities, which will carry out the SAR missions.”.

- Delete present **5.4.17** to **5.4.20** and the subtitle “Legislative Support”.

4 Chapter 6

- Renumber sections 6.3 to 6.6 as 6.4 to 6.7.
- Insert following new section 6.3:

“6.3 Applying Risk Management

- 6.3.1** A similar process to reducing system problems could be used to examine how risk management methodology can be applied to improve SAR response and SAR system performance. This process can be applied to any State regardless of its political system or organization structure.
- 6.3.2** Search and rescue (SAR) organizations have a lot to learn from the emergency management community where risk management principles are used so that the uncertainties that exist in potentially hazardous situations can be minimized and public safety maximized. Emergency managers commonly use three phases to describe their response to natural or technical disasters. They are preparedness (i.e., the pre-disaster phase), response (i.e., the immediate post-disaster phase), and recovery (i.e., return to a normal state). From a SAR perspective, we could call these phases pre-incident, incident response and post-incident with each phase requiring attention from SAR practitioners as they have a need to understand their particular role at that time, whether lead or support, and the interaction that is occurring within a broader government context.
- 6.3.3** The application of risk management can bring order to the uncertain environment in which SAR organizations exist. It is a very valuable tool to determine future work priorities and to improve the ability to meet the organizational objective of finding persons in distress and removing them to a place of safety.
- 6.3.4** Risk analysis is a valuable tool for managers of SAR organizations as it can set the resource priorities for an organization and its output can be used externally to promote SAR issues. SAR organizations are encouraged to undertake a risk analysis process and to use the information gained to advance the objective of saving lives.
- 6.3.5** An example of a Risk Management Process is at Appendix [N] [L].”

5 Appendix [M] [K]

- Insert new Appendix as follows:

“MODEL AGREEMENT FOR THE DIVISION OF RESPONSIBILITY BETWEEN THE SAR AUTHORITY AND THE AIR TRAFFIC SERVICES PROVIDER IN PROVIDING EMERGENCY RESPONSE SERVICES FOR AIRCRAFT

1. Purpose

- 1.1 The purpose of this document is to outline the division of responsibilities between the SAR Authority and Air Traffic Services (ATS) provider as component organizations contributing to the national emergency response system for aircraft, and to propose a model arrangement for co-operation between the parties.

2. Background

- 2.1 The responsibility for the various aspects of the national emergency response system required under the Convention on International Civil Aviation may fall within two or more agencies of the national government. The SAR Authority has broad responsibilities under Annex 12 for SAR response, (and ancillary functions are described in Annexes 10 and 15) and the ATS provider has broad responsibilities under Annex 11 for aviation SAR alerting. ATS also provides in-flight emergency response services for aircraft and assists Rescue Co-ordination Centres (RCCs) with their SAR response task by providing access to its aeronautical expertise and resources.

3. Duration and amendment

- 3.1 A Memorandum of Understanding (MOU) may be in force for a period of five years from the date of commencement and be extended for a further period or periods as agreed by the parties in accordance with the following principles:
 - 1) No variation is to be made to either the MOU or the agreed operational procedures dealing with in-flight emergencies or SAR alerting procedures without the consent of both parties.
 - 2) Where the parties agree to an alteration to this MOU, the alteration must be expressed in writing and be ratified by the signatories of both parties to this MOU, with sufficient notice to allow adoption of any agreed amended practice.

4. Scope

- 4.1 This MOU and associated operational information contained in the associated procedures is designed to facilitate a system for effective operational interface, and to positively manage the transfer of operational responsibility, between the ATS provider and the RCC during aircraft emergency phases.
- 4.2 This MOU does not alter the respective statutory, administrative or other obligations of the parties and any specific requirement under this MOU shall not involve any alteration to those obligations.

5. Management arrangements

- 5.1 There should be regular consultation between the agency managers to review the operational procedures to which this document applies.
- 5.2 Such consultation should occur whenever either of the parties considers changes to the procedures to be appropriate to meet operational commitments, and at least, once every 12 months from the commencement of this MOU.

6. Operational principles

- 6.1 The overriding principle governing the relationship of the agencies and the performance of activities covered by this MOU is that the safety of life is paramount.
- 6.2 All services related to the MOU are to be provided in accordance with the agreed practices laid down in this MOU and the agreed operational procedures. Such services may include the provision of assistance to aircraft in distress in the states Search and Rescue Region (SRR).
- 6.3 When handling an aircraft emergency or responding to a SAR incident, there is a need for the RCC and the ATS provider to work co-operatively and effectively together. It is important that there be no ambiguity with respect to the agency taking the lead and the agency providing support as an incident progresses. The lead agency role is determined by mutual agreement according to the division of responsibilities at paragraph 9.

7. Recorded operational information

- 7.1 RCCs may access information held by ATS units. For SAR purposes, ATS will provide the RCC, as soon as practicable, all information relevant to a state of emergency of an aircraft, including copies of journals, flight plans, audio tape records, recorded radar data plots and all other relevant documentation.
- 7.2 Both parties acknowledge that telephone conversations regarding operations or exercises between the two agencies may be recorded with or without prior warning.

8. Provision of information

- 8.1 Subject to their legal obligations relating to privacy and protection of commercial in confidence information, each party agrees that the agencies will exchange information as necessary to successfully execute emergency response actions. Each agency shall use such information only for the purpose of properly meeting its legal obligations.
- 8.2 Each party agrees that, except as required to properly perform its statutory obligations, it will not release information received by it from the other party without the prior agreement.

9. Division of responsibilities

(Note: Paragraphs 9.1 and 9.2 serve as an outline of ATS and RCC responsibilities that may be expanded upon by States to suit their individual circumstances.)

- 9.1 In relation to the emergency response system, ATS will provide the following types of services:
- a) In-flight emergency response to provide assistance to a pilot to operate in safe airspace and land the aircraft safely.
 - b) SAR alerting and in the case of aerodrome emergency procedures, alerting the appropriate emergency agencies.
 - c) Assistance to the RCC with ATS expertise, information and resources.
- 9.2 In relation to the state aviation SAR and emergency response system, the RCC will provide the following types of services:
- a) Co-ordination of appropriate SAR response.
 - b) Assistance to ATS with reference to relevant data.
 - c) Co-ordination with ATS, when ATS is managing an in-flight emergency and RCC is managing a parallel SAR response to the incident.

10. Costs

- 10.1 Each party will be responsible for all costs associated with its responsibilities under this MOU, unless otherwise agreed by the parties.

11. Signature

- 11.1 In signing this MOU, both parties agree to abide by its provisions.

Signature

Signature

Agency A

Agency B”

6 Appendix [N] [L]

- Insert new Appendix as follows:

“APPLYING RISK MANAGEMENT PRINCIPLES TO ASSESS SAR RESPONSE AND SAR SYSTEM PERFORMANCE

Risk Management Process

For the risk analysis to be effective it needs to take a broad view of the SAR system or response and, ideally, all stakeholders and interest groups should be involved. The process should be documented, noting that the value of the risk analysis is that it is an iterative process that when repeated provides valuable feedback on risk mitigation effectiveness. The steps in the risk management process are shown at Figure 1, and provide a logical and systematic methodology for identifying, analysing, assessing, treating and monitoring risks.

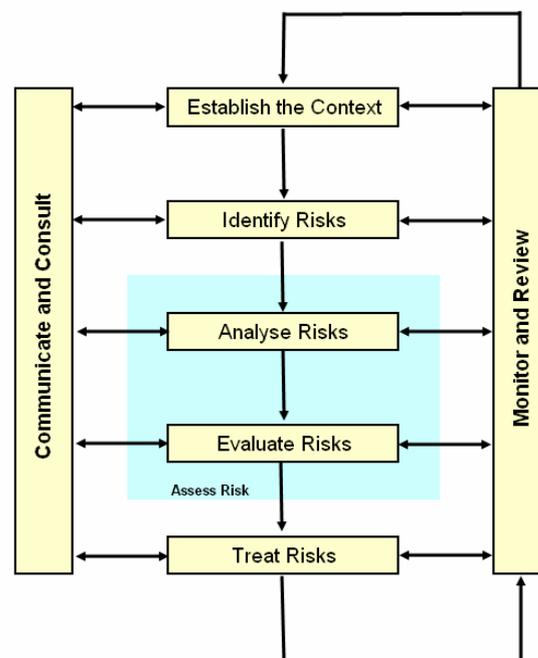


Figure 1 – The Risk Management Process

The determining of risk requires a well-structured approach with all risk factors being subjected to an iterative process. Although from a SAR perspective it should be used to assess the overall SAR system, the technique can equally be applied to the SAR response phase.

Establishing the Context

The first step in the process is **establishing the context** in which the SAR risks will be determined. Will the analysis include the parts that other organizations, their resources and response plans play in assisting the SAR function? Will it make judgements on the complex national arrangements and their effectiveness if a major SAR incident occurs? If this is the context that is being examined, there is a need to gain wide support for the analysis by promoting stakeholder involvement from appropriate decision makers outside the SAR organization.

If the context is internally focused, there may still be a need to make judgements about the external environment and the analysis may be able to determine priorities and the order in which they should be addressed. There is also a need to understand the government policy framework in which the SAR organization exists and its funding basis. However, the risk process should put the question of limited funds being available aside until after the analysis is complete so that the outcomes are not distorted by self imposed constraints before it has begun.

Identifying the Risks

The second step in the process is **identifying the risks**, which is ‘the process of determining what can happen, why and how’ as the basis for further analysis. People have different risk perceptions and this step requires taking an objective view of current or potential situations where the objective of finding persons in distress and removing them to a place of safety may be compromised.

Some approaches used to identify risk include whether the risk is easily managed, if exposure is voluntary, whether the risk is familiar, making an assessment that the situation may become catastrophic, the innate fear of the worst occurring, and personal or organizational win/loss assessments. The process can be based on formal analysis tools (e.g., quantitative analysis, Pareto analysis, systems engineering, etc), where appropriate. However, in most circumstances for SAR it can be more simply accomplished by people that work in the activity sitting down and coming to a collective view of the exposures facing the organization (e.g., experience, brainstorming, scenario analysis, lessons learned, etc.).

The subject matter could be discussed by using the divisions used in IAMSAR to break down the analysis. These are Organization and Management (Volume I), Mission Co-ordination (Volume II), and Mobile Facilities (Volume III).

Analyse the Risks

The third step in the process is to **analyse the risks**. This is done by establishing the cause of the risk, which is important when it comes to treating it, and determining its likelihood and consequences. Likelihood is a qualitative description of probability or frequency; and consequences is the outcome of an event, expressed qualitatively or quantitatively, expressed in terms of loss, injury, disadvantage or gain.

A common approach to document this interaction is to set values for likelihood and consequences of each risk. An example that may be useful in terms of determining likelihood for SAR is shown in Table 1.

<i>Level</i>	<i>Descriptor</i>	<i>General Description</i>
<i>A</i>	<i>Almost Certain</i>	<i>daily occurrence</i>
<i>B</i>	<i>Likely</i>	<i>weekly occurrence</i>
<i>C</i>	<i>Occasional</i>	<i>monthly occurrence</i>
<i>D</i>	<i>Possible</i>	<i>yearly occurrence</i>
<i>E</i>	<i>Unlikely</i>	<i>1 year > occurrence < 10 years</i>
<i>F</i>	<i>Rare</i>	<i>> 10 years</i>

Table 1 – Qualitative Measures of Likelihood

The assignment of consequences is also done using general descriptions and an example is shown in Table 3. Caution needs to be exercised in assigning consequences, as every incident is not necessarily a potential major catastrophe. The history of SAR incidents and their outcomes over the last ten years is a good starting point when approaching consequences.

<i>Level</i>	<i>Descriptor</i>	<i>General Description</i>
<i>1</i>	<i>Very Low</i>	<ul style="list-style-type: none"> • <i>routine or business management task with no life saving consequence</i> • <i>non-critical support role to other agency leading incident response</i> • <i>staff have good SAR support tools available</i> • <i>robust communications systems available</i> • <i>excellent level of response assets available</i>
<i>2</i>	<i>Low</i>	<ul style="list-style-type: none"> • <i>routine or business management task with potential life saving consequence</i> • <i>lead role in non-SAR/safety of life activity</i> • <i>staff have adequate SAR support tools</i> • <i>fair communications systems available</i> • <i>adequate level of first response assets available</i>
<i>3</i>	<i>Medium</i>	<ul style="list-style-type: none"> • <i>routine or business management task with demonstrated life saving consequence</i> • <i>staff have inadequate SAR support tools</i> • <i>poor communications systems available</i> • <i>inadequate first response assets available</i> • <i>a situation that may lead to an internal decision to make a major change to procedures, structure or staffing</i> • <i>fatality (1-5 people)</i> • <i>hull loss</i>
<i>4</i>	<i>High</i>	<ul style="list-style-type: none"> • <i>a situation that may lead to an external decision to make major changes to structure or staffing at the management level</i> • <i>fatality (6-14 people)</i> • <i>hull loss</i>
<i>5</i>	<i>Extreme</i>	<ul style="list-style-type: none"> • <i>a political review of the SAR organization and its effectiveness</i> • <i>fatality (>14 people)</i> • <i>hull loss</i>

Table 2 – Qualitative Measures of Consequences or Impact

Once the likelihood and consequence elements are determined, a risk analysis matrix is developed and tested using sample scenarios. This is a most important step as it allows the risk analysis team to develop a common understanding of likelihood and consequence and their inter-relationship. Also, there may be situations where there are multiple likelihood and consequence relationships, and each of these should be scored and the highest resultant value recorded in the next step of the risk analysis.

Evaluate the Risks

The fourth step in the process is to **evaluate the risks**. This is done by comparing likelihood against consequence as shown at Table 3 and comparing the results with any previous risk analysis. The Table 3 comparison matrix will result in an ordering of risks and assist to develop an effective risk mitigation plan. An extreme risk requires immediate remediation, a high risk requires urgent attention, a medium risk should be addressed as a priority, and a low level risk can be addressed through routine processes.

		<i>Consequences</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>Likelihood</i>	<i>A</i>	<i>H</i>	<i>H</i>	<i>E</i>	<i>E</i>	<i>E</i>
	<i>B</i>	<i>M</i>	<i>H</i>	<i>H</i>	<i>E</i>	<i>E</i>
	<i>C</i>	<i>L</i>	<i>M</i>	<i>H</i>	<i>H</i>	<i>E</i>
	<i>D</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>H</i>	<i>H</i>
	<i>E</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>M</i>	<i>H</i>
	<i>F</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>M</i>

Table 3 – Qualitative Risk Analysis Matrix
 (Level of Risk E = Extreme, H = High, M = Medium, and L = Low)

Treat the Risks

The fifth step in the process is to **treat the risks**. In the terms of SAR, it is important to minimize risk where it can be practically reduced on a cost benefit basis. It may be possible to reduce low level risk by introducing simple reduction measures such as additional staff training or SAR customer education. At the other end of the scale it may not be possible to treat extreme risks due to inadequate resources or government policy decisions. However, the risk analysis process will prioritize these factors for the SAR Manager and it may be a powerful ally to assist in change management.

Monitor and Review

The sixth step in the process is to **monitor and review** the performance of the risk management system and the changes that may affect it. Regular reviews (e.g., six monthly) of the analysis should be conducted and the effectiveness of risk mitigation strategies re-examined. Some risks may be transitory (e.g., contract renewals, changes to procedures, etc) and others may be inherent in operating a SAR system. The iterative approach of the analysis means that SAR organizations will have a good understanding of the challenges facing them and will have considered approaches to remediate them. It may only be possible to alleviate some risks rather than removing them entirely.

Communicate and Consult

The seventh and last step in the process is the most important being **communicate and consult**. It is important to have a communications plan for stakeholders and involve them in the process. Industry peak representative bodies, if they exist, can be important stakeholders as they have a vested interest in the outcomes and may have the ability to influence higher level government decision making processes.”

SECTION 2

PROPOSED AMENDMENTS TO THE IAMSAR MANUAL – VOLUME II

1 Chapter 1

- Delete present paragraph **1.2.3** and replace with following:

“**1.2.3** SAR operations are normally carried out under the direction and supervision of an SMC who is usually the supervisor of the RCC or RSC watch team. In multiple incident situations this officer could be SMC for all incidents, or for some of those incidents, the SMC role could be delegated to another suitably qualified member of the watch team. The SMC should in all cases be supported by RCC watch team members to undertake functions in the co-ordinating process such as communications, plotting, logging and search planning. For complex cases or those of long duration the assisting team must be replaced at regular intervals as well as the SMC. The SMC must be able to competently gather information about emergencies, transform emergency incident information into accurate and workable plans and dispatch and co-ordinate the facilities, which will carry out the SAR missions.”

2 Chapter 2

- In paragraph **2.10.4**, replace the second paragraph to read following (new text is underlined):

“However, these popular, inexpensive, and multi-purpose devices have limitations in emergencies involving SAR in the maritime environment, and, therefore, the advantages dedicated marine communications systems should continue to be stressed by national administrations.”
- add following, at the end of the paragraph **2.10.4** (new text is underlined):

“in disaster areas, cellular systems quickly become saturated with callers, making calls to others in the same area nearly impossible; and

where installed, cellular phone coverage in the maritime environment can be limited, intermittent, or non-existent, based on several factors to include cellular tower accessibility and orientation in relationship to a cellular telephone call initiated from an offshore or coastal area.”
- make changes 2.10.4 as follows (new text is underlined; text recommended for deletion has a line through it):

“Cellular service providers may be able to provide some of the following help in finding the position of callers in an emergency; ~~lost or disoriented callers, but the help may not be easy to provide and will involve time delays:~~
 - call trace to the receiving cell while the call is connected, and an estimate of maximum range from the tower;

- approximate position based on the assessment of signal strength or time difference of arrival to several tower sites or from the cell phone's GNSS-derived positioning obtained either through direct means in which a call is placed by the cellular user or by dialling the cellular number of the individual in distress (if known) or through indirect means via the phone's standby connectivity to the cellular network (provided the phone is powered on) which can be of particular use in instances where an individual may not be able to place or answer a call;
 - cell tower location(s) of the last series of call placed by the caller (useful for proximity searches), its associated traffic data, if available; and
 - notification when a call is made from the user's number (useful in overdue cases)."
- Insert following as **2.10.5**:
- "2.10.5** SAR authorities should make all appropriate arrangements (i.e. legal, logistic, etc.) with cellular service providers in their SRR to obtain the critical information in 2.10.4 in as quick a manner as possible and to establish regulations that require wireless providers to provide this information either through network-based or handset-based (e.g. built-in GNSS receiver) capabilities. Similar arrangements and protocols should also be made with emergency or public safety service agencies so that SAR-related emergencies may be directed to the appropriate SAR authority along with the caller's name, location, and other pertinent information when and where available."
- Insert following as 2.10.6:
- "2.10.6** National administrations should consider establishing free of charge, abbreviated telephone numbers to connect callers with emergency or public safety service agencies (e.g. "1-1-2", "9-1-1", "9-9-9") or direct cellular call connection numbers to SAR authorities (e.g. "1-6-1-6" in France and "1-5-3-0" in Italy) in order to provide emergency services and SAR authorities with an expedient means of notification from cell phones users in an emergency, and to publicize this information widely."

SECTION 3

PROPOSED AMENDMENTS TO THE IAMSAR MANUAL – VOLUME III

1 Section 1-3

- Under "SMC duties include", replace the fifth from last bullet with following:
- "□ determine when to suspend or terminate the search".

2 Section 3-1

- In the opening paragraph of “Requirement for Co-ordination”, delete the first sentence and amend the next three sentence to read as follows:

“When a SAR incident occurs, an SMC will normally be designated, within an RCC or RSC. The SMC will obtain SAR facilities, plan SAR operations, and provide overall co-ordination. The SMC may also designate ...”.

- The final sub-bullet of the second bullet should be amended to read:

“□ any communication facility (e.g., alerting post)”.

3 Section 3-2

- Delete four bullets under “Co-ordination by Land-Based Authorities” and replace with the following:

- SAR operations are normally co-ordinated from specially equipped operational centres or RCCs, staffed 24 hours a day with trained personnel. The working language for these centres should be English.

- Each RCC has an associated SRR. The SRR might be divided into sub-regions with associated RSCs.

- Land-based communication facilities include:

- land earth stations (LESSs)
- COSPAS-SARSAT Mission Control Centres with Local User Terminals (LUTs)
- Independent CRSs or CRSs associated the RCCs
- ATS units
- mobile phone networks
- Internet
- public telephone alerting systems.

- LESSs may also be referred to as aeronautical ground earth stations (GESs) or maritime coast earth stations (CESSs).”

4 Appendix D

- Format SAR SITREP report at Appendix D in the same way as the SAR briefing and debriefing form in appendix E.

ANNEX 17

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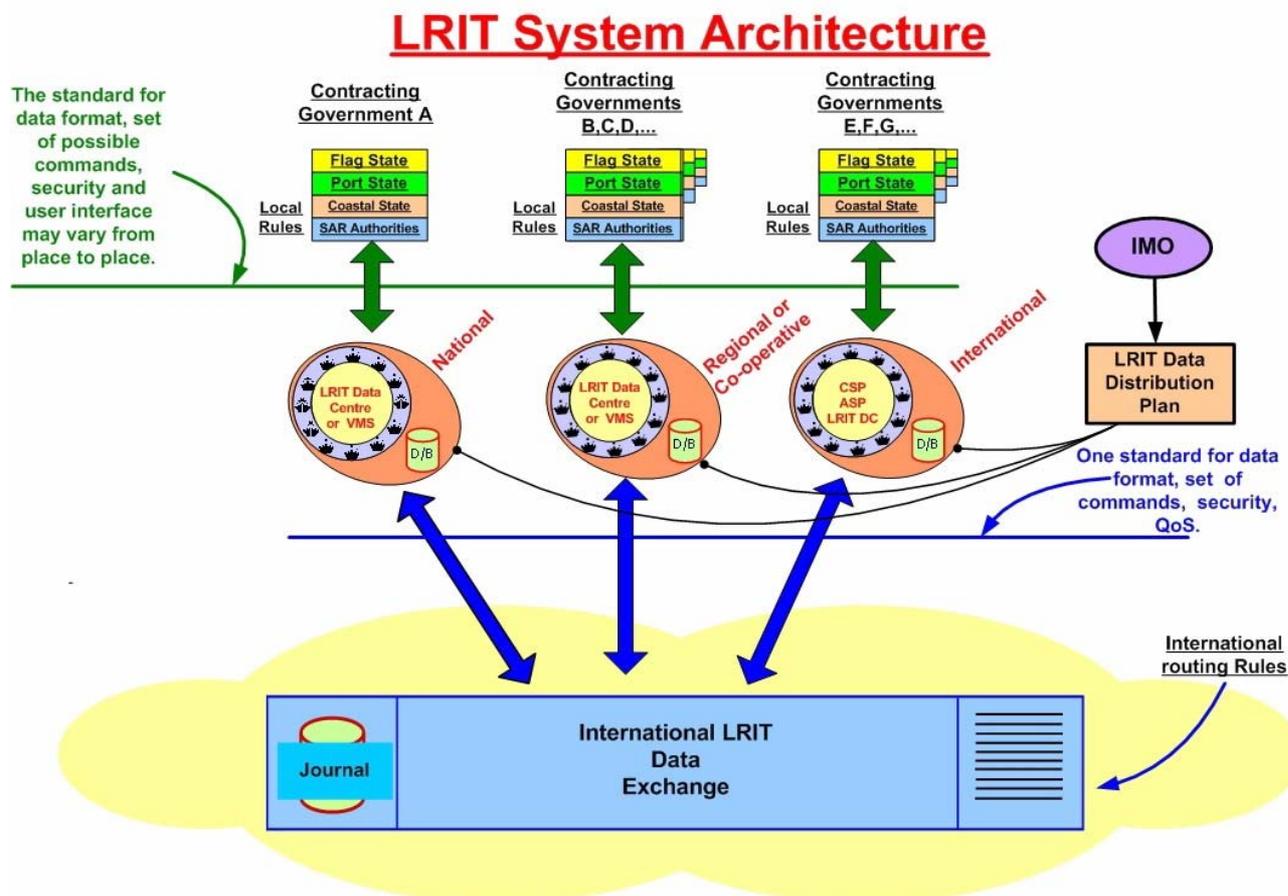
**PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS FOR THE
LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS**

1 Overview

1.1 The Long-Range Identification and Tracking (LRIT) system provides for the global identification and tracking of ships.

1.2 The LRIT system consists of the shipborne LRIT information transmitting equipment, the Communication Service Provider(s), the Application Service Provider(s), the LRIT Data Centre(s), including any related Vessel Monitoring System(s), the LRIT Data Distribution Plan and the International LRIT Data Exchange. Certain aspects of the performance of the LRIT system are reviewed or audited by an LRIT Co-ordinator acting on behalf of all Contracting Governments. Figure 1 provides an illustration of the LRIT system architecture.

FIGURE 1



Certain aspects of the performance of the LRIT system are reviewed or audited by an
LRIT Co-ordinator

1.3 LRIT information is provided to Contracting Governments and Search and rescue services¹ entitled to receive the information, upon request, through a system of National, Regional, Co-operative and International LRIT Data Centres, using where necessary, the LRIT International Data Exchange.

1.4 Each Administration should provide to the LRIT Data Centre it has selected, a list of the ships entitled to fly its flag, which are required to transmit LRIT information, together with other salient details and should update, without undue delay, such lists as and when changes occur. Ships should only transmit the LRIT information to the LRIT Data Centre selected by their Administration.

1.5 The obligations of ships to transmit LRIT information and the rights and obligations of Contracting Governments and of Search and rescue services to receive LRIT information are established in regulation [V/19-1]² of the 1974 SOLAS Convention.

2 Definitions

2.1 Unless expressly provided otherwise:

- .1 *Convention* means the International Convention for the Safety of Life at Sea, 1974, as amended.
- .2 *Regulation* means a regulation of the Convention.
- .3 *Chapter* means a chapter of the Convention.
- .4 *LRIT Data User* means a Contracting Government or a Search and rescue service which opts to receive the LRIT information it is entitled to.
- .5 *Committee* means the Maritime Safety Committee.
- .6 *High-speed craft* means a craft as defined in regulation X/1.3.
- .7 *Mobile offshore drilling unit* means a mobile offshore drilling unit as defined in regulation XI-2/1.1.5.
- .8 *Organization* means the International Maritime Organization.
- .9 *Vessel Monitoring System* means a system established by a Contracting Government or a group of Contracting Governments to monitor the movements of the ships entitled to fly its or their flag. A Vessel Monitoring System may also collect from the ships information specified by the Contracting Government(s) which has established it.
- .10 *LRIT information* means the information specified in regulation [V/19-1.5]².

¹ The term *search and rescue service* is defined in SOLAS regulation V/2.5 (see amendments to chapter V adopted on 20 May 2004, under cover of resolution MSC.153(78), which will enter into force on 1 July 2006).

² A number of provisions have been included within square brackets marked with footnote 2. The wording of the provisions so identified needs to be reviewed and decided upon by the Committee, taking into account its decision in relation to the provision, to Contracting Governments, of LRIT information transmitted by ships transiting at a certain distance off the coast of that Contracting Government, but not intending to enter a port located within its territory or a place under its jurisdiction.

2.2 The term “ship”, when used in the present Performance standard and functional requirements for long-range identification and tracking of ships (the Performance standard), includes mobile offshore drilling units and high-speed craft as specified in regulation [V/19-1.1]² and means a ship which is required to transmit LRIT information.

2.3 Terms not otherwise defined should have the same meaning as the meaning attributed to them in the Convention.

3 General provisions

3.1 It should be noted that regulation [V/19-1.3]² provides that:

Nothing in this regulation or the provisions adopted by the Organization in relation to the long-range identification and tracking of ships shall prejudice the rights or obligations of States under international law or the legal regimes of the high seas, the exclusive economic zone, the contiguous zone, the territorial seas or the straits used for international navigation and archipelagic sea lanes.

3.2 In operating the LRIT system, recognition should be given to international conventions, agreements, rules or standards that provide for the protection of navigational information.

3.3 The present Performance standard should always be read together with regulation [V/19-1]².

4 Shipborne equipment

4.1 In addition to the general requirements contained in Assembly resolution A.694(17) on Recommendations on general requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids, the shipborne equipment should comply with the following minimum requirements:

- .1 be capable of automatically and without human intervention on board the ship transmitting the ship’s LRIT information at 6-hour intervals to an LRIT Data Centre;
- .2 be capable of being configured remotely to transmit LRIT information at variable intervals;
- .3 be capable of transmitting LRIT information following receipt of polling commands;
- .4 be capable of interfacing directly to the shipborne global navigation satellite system equipment, or have internal positioning capability;
- .5 be supplied with energy from the main and emergency source of electrical power³;
and

² A number of provisions have been included within square brackets marked with footnote 2. The wording of the provisions so identified needs to be reviewed and decided upon by the Committee, taking into account its decision in relation to the provision, to Contracting Governments, of LRIT information transmitted by ships transiting at a certain distance off the coast of that Contracting Government, but not intending to enter a port located within its territory or a place under its jurisdiction.

³ This provision should not apply to ships using for the transmission of LRIT information any of the radio communication equipment provided for compliance with the provisions of chapter IV. In such cases, the shipborne equipment should be provided with sources of energy as specified in regulation IV/13.

.6 be tested for electromagnetic compatibility taking into account the recommendations⁴ developed by the Organization.

4.2 In addition to the provisions specified in paragraph 4.1 above, the shipborne equipment should provide the functionality specified in table 1.

TABLE 1

DATA TO BE TRANSMITTED FROM THE SHIPBORNE EQUIPMENT

Parameter	Comments
Shipborne equipment Identifier	The identifier used by the shipborne equipment.
Positional data	<p>The GNSS position (latitude and longitude) of the ship (based on the WGS84 datum).</p> <p><i>Position:</i> The equipment should be capable of transmitting the GNSS position (latitude and longitude) of the ship (based on WGS84 datum) as prescribed by regulation [V/19-1]², without human interaction on board the ship.</p> <p><i>On-demand⁽¹⁾ position reports:</i> The equipment should be capable of responding to a request to transmit LRIT information on demand without human interaction onboard the ship, irrespective of where the ship is located.</p> <p><i>Pre-scheduled⁽²⁾ position reports:</i> The equipment should be capable of being remotely configured to transmit LRIT information at intervals ranging from a minimum of 15 minutes to periods of 6 hours to the LRIT Data Centre, irrespective of where the ship is located and without human interaction on board the ship.</p>
Time Stamp 1	<p>The date and time⁽³⁾ associated with the GNSS position.</p> <p>The equipment should be capable of transmitting the time⁽³⁾ associated with the GNSS position with each transmission of LRIT information.</p>

- Notes:
- ⁽¹⁾ *On-demand position reports* means transmission of LRIT information as a result of either receipt of polling command or of remote configuration of the equipment so as to transmit at interval other than the preset ones.
 - ⁽²⁾ *Pre-scheduled position reports* means transmission of LRIT information at the preset transmit intervals.
 - ⁽³⁾ All times should be indicated as Universal Co-ordinated Time (UTC).

4.3 The shipborne equipment should transmit the LRIT information using a communication system which provides coverage in all areas where the ship operates.

² A number of provisions have been included within square brackets marked with footnote 2. The wording of the provisions so identified needs to be reviewed and decided upon by the Committee, taking into account its decision in relation to the provision, to Contracting Governments, of LRIT information transmitted by ships transiting at a certain distance off the coast of that Contracting Government, but not intending to enter a port located within its territory or a place under its jurisdiction.

⁴ Refer to the Assembly resolution A.813(19) on General requirements for electromagnetic compatibility of all electrical and electronic ship's equipment.

4.4 The shipborne equipment should be set to automatically transmit the ship's LRIT information at 6-hour intervals to the LRIT Data Centre identified by the Administration, unless the LRIT Data User requesting the provision of LRIT information specifies a more frequent transmission interval.

5 Application Service Providers

5.1 Application Services Provider(s) (ASPs) providing services to:

- .1 a National LRIT Data Centre, should be recognized by the Contracting Government establishing the centre;
- .2 a Regional or a Co-operative LRIT Data Centre, should be recognized by the Contracting Governments establishing the centre. In such a case, the arrangements for recognizing the ASPs should be agreed amongst the Contracting Governments establishing the centre; and
- .3 an International LRIT Data Centre, should be recognized by the Committee.

5.2 Contracting Governments should provide to the Organization a list with the names and contact details of the ASPs they recognize together with any associated conditions of recognition and thereafter should, without undue delay, update the Organization as changes occur.

5.3 An ASP function should:

- .1 provide a communication protocol interface between the Communication Service Providers and the LRIT Data Centre to enable the following minimum functionality:
 - .1 remote integration of the shipborne equipment into an LRIT Data Centre;
 - .2 automatic configuration of transmission of LRIT information;
 - .3 automatic modification of the interval of transmission of LRIT information;
 - .4 automatic suspension of transmission of LRIT information;
 - .5 on demand transmission of LRIT information; and
 - .6 automatic recovery and management of transmission of LRIT information;
- .2 provide an integrated transaction management system for the monitoring of LRIT information throughput and routing; and
- .3 ensure that LRIT information is collected, stored and routed in a reliable and secure manner.

5.4 The ASP where used should add the data identified in table 2 to each transmission of LRIT information:

TABLE 2
DATA TO BE ADDED BY AN APPLICATION SERVICE PROVIDER
AND AT THE LRIT DATA CENTRE

Parameters	Comments
Ship Identity ⁽¹⁾	The IMO ship identification number ⁽¹⁾ and MMSI for the ship.
Time Stamp 2	The date and time ⁽²⁾ the position report is received by the ASP (if used).
Time Stamp 3	The date and time ⁽²⁾ the position report is forwarded from the ASP (if used) to the appropriate LRIT Data Centre.
LRIT Data Centre Identifier	The identity of the LRIT Data Centre to be clearly indicated by a Unique Identifier.
Time Stamp 4	The date and time ⁽²⁾ the position report is received by the LRIT Data Centre.
Time Stamp 5	The date and time ⁽²⁾ the position report is forwarded from the LRIT Data Centre to an LRIT Data User.

Notes: ⁽¹⁾ See regulation XI-1/3 and Assembly resolution A.600(15) on IMO ship identification number scheme.

⁽²⁾ All times should be indicated as Universal Co-ordinated Time (UTC).

5.5 In addition to the provisions of paragraph 5.3, Administrations, Contracting Governments and the Committee may establish, in relation to the ASPs seeking their recognition, specific requirements as a condition of recognizing a particular ASP.

6 Communications Service Providers

6.1 Communications Service Providers (CSPs) provide services which link the various parts of the LRIT system using communications protocols in order to ensure the end-to-end secure transfer of the LRIT information. This requirement precludes the use of non-secure broadcast systems.

6.2 A CSP may also provide services as an ASP.

7 LRIT Data Centre

7.1 All LRIT Data Centres should:

- .1 establish and continuously maintain systems which ensure, at all times, that LRIT Data Users are only provided with the LRIT information they are entitled to receive as specified in regulation [V/19-1.7 and V/19-1.11]²;
- .2 collect LRIT information from ships instructed by their Administrations to transmit the LRIT information to the centre;

² A number of provisions have been included within square brackets marked with footnote 2. The wording of the provisions so identified needs to be reviewed and decided upon by the Committee, taking into account its decision in relation to the provision, to Contracting Governments, of LRIT information transmitted by ships transiting at a certain distance off the coast of that Contracting Government, but not intending to enter a port located within its territory or a place under its jurisdiction.

- .3 obtain, when requested to provide LRIT information transmitted by ships other than those which transmit the information to the centre, LRIT information from other LRIT Data Centres through the International LRIT Data Exchange;
- .4 make available, when requested to provide LRIT information transmitted by ships other than those which transmit the information to the centre, LRIT information transmitted to the centre to other LRIT Data Centres through the International LRIT Data Exchange;
- .5 execute requests received from LRIT Data Users for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships transmitting the information to the centre;
- .6 relay, when required, requests received from LRIT Data Users through the International LRIT Data Exchange to the other LRIT Data Centres for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships not transmitting the information to the centre;
- .7 execute requests received through the International LRIT Data Exchange from other LRIT Data Centres for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships transmitting the information to the centre;
- .8 upon request disseminate to LRIT Data Users the LRIT information they are entitled to receive in accordance with the agreed arrangements and notify the LRIT Data User and the Administration when a particular ship stops transmitting LRIT information;
- .9 archive LRIT information from ships which transmit the information to the centre, for at least one year and until such time as the Committee reviews and accepts the annual report of the audit of its performance by the LRIT Co-ordinator. However, the archived LRIT information should provide a complete record of the activities of the centre between two consecutive annual audits of its performance;
- .10 for LRIT information archived within the last 4 days, send the LRIT information within 30 minutes of receiving a request;
- .11 for LRIT information archived between 4 and 30 days previously, send the LRIT information within 1 hour of receiving a request;
- .12 for LRIT information archived more than 30 days previously, send the LRIT information within 5 days of receiving a request;
- .13 ensure using appropriate hardware and software, that LRIT information is backed-up at regular intervals, stored at suitable off-site location(s) and available as soon as possible in the event of disruption to ensure continuity of service;
- .14 maintain a record of the ships which transmit LRIT information to the centre including name of ship, IMO Ship identification number, Call Sign, Maritime Mobile Service Identity (MMSI) [and Unique shipborne equipment identifier transmitted by the ship];

- .15 use a standard protocol for communications with the International LRIT Data Exchange;
- .16 use a standard secure transmission method with the International LRIT Data Exchange;
- .17 use a secure access method with LRIT Data Users;
- .18 use a standard and expandable message format for communicating with the International LRIT Data Exchange;
- .19 use reliable connections (e.g. TCP) to ensure that the LRIT information is successfully received by the LRIT Data Centres; and
- .20 add the appropriate data identified in table 2 to each transmission of LRIT information collect by the centre.

7.2 The performance of all LRIT Data Centres should be audited annually by the LRIT Co-ordinator.

7.2.1 All LRIT Data Centres should co-operate and make available to the LRIT Co-ordinator the information required to enable the satisfactory completion of an audit of their performance.

7.3 Notwithstanding the provisions of paragraph 7.1, all LRIT Data Centres should provide to Search and rescue services (SAR services), LRIT information transmitted by all ships located within the geographic area specified by the SAR service requesting the information so as to permit the rapid identification of ships which may be called upon to provide assistance in relation to the search and rescue of persons in distress at sea. The LRIT information should be provided irrespective of the location of the geographic area and should be provided even if the geographic area is outside the search and rescue region associated with the SAR service requesting the information.

8 National, Regional and Co-operative LRIT Data Centres

8.1 A Contracting Government may establish a National LRIT Data Centre. A Contracting Government establishing such a centre should provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.2 A group of Contracting Governments may establish either a Regional or a Co-operative LRIT Data Centre. The arrangements for establishing such a centre should be agreed amongst the Contracting Governments concerned. One of the Contracting Governments establishing such a centre should provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.3 Upon request, National, Regional and Co-operative LRIT Data Centres may provide services to Contracting Governments other than those establishing the centre.

8.3.1 The arrangements for providing services should be agreed between the LRIT Data Centre and the Contracting Government requesting the provision of the services.

8.3.2 The Contracting Government establishing the National LRIT Data Centre or one of the Contracting Governments establishing the Regional or Co-operative LRIT Data Centre should, if the centre provides services to Contracting Governments other than those which established the centre, provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.4 National, Regional and Co-operative LRIT Data Centres may also serve as a National, Regional or Co-operative Vessel Monitoring System (VMS) and may require, as VMS, the transmission from ships of additional information, or of information at different intervals, or of information from ships which are not required to transmit LRIT information. VMSs may also perform other functions.

8.4.1 If a National, Regional or Co-operative LRIT Data Centre collects additional information from ships, it should transmit only the required LRIT information to the other LRIT Data Centres through the International LRIT Data Exchange.

9 International LRIT Data Centre

9.1 An International LRIT Data Centre recognized by the Committee should be established.

9.2 Contracting Governments not participating in a National, Regional or Co-operative LRIT Data Centre, or Contracting Governments having an interest in the establishment of an International LRIT Data Centre should co-operate, under the co-ordination of the Committee, with a view to ensuring its establishment.

9.3 Ships, other than those which are required to transmit LRIT information to either a National, Regional or Co-operative LRIT Data Centre, should transmit the required LRIT information to the International LRIT Data Centre.

9.4 An International LRIT Data Centre may, upon request, collect additional information from ships entitled to fly the flag of an Administration on the basis of specific arrangements concluded with the Administration concerned.

10 International LRIT Data Exchange

10.1 An International LRIT Data Exchange recognized by the Committee should be established.

10.2 Contracting Governments should co-operate, under the co-ordination of the Committee, with a view to ensuring the establishment of the International LRIT Data Exchange.

10.3 The LRIT International Data Exchange should:

- .1 route LRIT information between LRIT Data Centres using a routing table to determine the correct route;
- .2 be connected to all LRIT Data Centres;
- .3 use a store and forward-buffer to ensure LRIT information is received;
- .4 automatically maintain journal(s) containing message header information only which may be used for:

- .1 invoicing functions and settlement of invoicing disputes; and
- .2 audit purposes;
- .5 archive journal(s), for at least one year and until such time as the Committee reviews and accepts the LRIT Co-ordinator's annual report of the audit of its performance. However, the archived journal(s) should provide a complete record of the activities of the exchange between two consecutive annual audits of its performance;
- .6 prepare, as necessary, performance related statistical information based on the information contained in the journal(s);
- .7 use a standard protocol for communications with LRIT Data Centres;
- .8 use a standard secure access method with the LRIT Data Centres;
- .9 use a standard and expandable message format for communicating with the LRIT Data Centres;
- .10 use reliable connections (e.g. TCP) to ensure that the LRIT information is successfully received by the LRIT Data Centres;
- .11 use agreed protocols to connect to LRIT Data Centres; and
- .12 not archive LRIT information.

11 LRIT Data Distribution Plan

11.1 The Organization should establish and maintain the LRIT Data Distribution Plan.

11.2 The LRIT Data Distribution Plan should include:

- .1 a list of Contracting Governments and Search and rescue services entitled to receive LRIT information, and their points of contact;
- .2 [the boundaries of geographic areas within which each Contracting Government is entitled to receive LRIT information about ships in the area;]²
- .3 [the boundaries of geographic areas within which each Contracting Government has requested LRIT information (which should not be greater than what they are entitled to);]²
- .4 [information supplied by Administrations in relation to the non-provision of LRIT information to specified Contracting Governments;]²

² A number of provisions have been included within square brackets marked with footnote 2. The wording of the provisions so identified needs to be reviewed and decided upon by the Committee, taking into account its decision in relation to the provision, to Contracting Governments, of LRIT information transmitted by ships transiting at a certain distance off the coast of that Contracting Government, but not intending to enter a port located within its territory or a place under its jurisdiction.

- .5 a list of ports and port facilities together with the associated geographic co-ordinates (based on WGS84 datum) located within the territory of each Contracting Government;
- .6 a record of the distance from its coast or a specific port from which each Contracting Government requires LRIT information for ships proceeding to a port located within its territory or a place under its jurisdiction. Alternatively, a Contracting Government may, for each individual ship proceeding to any of the ports located within its territory or places under its jurisdiction, advise the LRIT Data Centre of either the distance from its coast or a specific port or the point in time, from which it requires LRIT information from that ship. However, in the latter case the information need not be provided or included in the LRIT Data Distribution Plan;
- .7 a list of the National, Regional, Co-operative and International LRIT Data Centre(s) and their points of contact; and
- .8 a record indicating which LRIT Data Centre is collecting and archiving LRIT information for each of the Contracting Governments.

12 LRIT system security

12.1 LRIT communications using land-line links should provide for data security using methods such as:

- .1 Authorization: Access should only be granted to those who are authorized to see the specific LRIT information;
- .2 Authentication: Any party exchanging information within the LRIT system should require authentication before exchanging information;
- .3 Confidentiality: Parties running an application server should protect the confidentiality of the LRIT information to ensure that it is not disclosed to unauthorized recipients when it travels across the LRIT system; and
- .4 Integrity: Parties exchanging LRIT information should ensure that the integrity of the LRIT information is guaranteed and that no data has been altered.

13 LRIT system performance

13.1 LRIT information should be available to an LRIT Data User within 15 minutes of the time it is transmitted by the ship.

13.2 On-demand LRIT information reports should be provided to an LRIT Data User within 30 minutes of the time the LRIT Data User requested the information.

13.3 The quality of service:

$$\frac{\text{Number of delivered reports meeting latency requirements}}{\text{Total number of report requests}} \times 100\%$$

should be:

- .1 95% of the time over any 24-hour period; and
- .2 99% over any 1 month.

14 LRIT Co-ordinator

14.1 The LRIT Data Co-ordinator should be appointed by the Committee.

14.2 The LRIT Co-ordinator should assist in the establishment of the International LRIT Data Centre and International LRIT Data Exchange by:

- .1 participating in the development of any required technical specifications taking into account the present Performance standard and any relevant decisions of the Committee;
- .2 issuing requests for the submission of proposals for the establishment and operation of the International LRIT Data Centre and International LRIT Data Exchange;
- .3 evaluating the management, operational, technical and financial aspects of the proposals received taking into account the present Performance standard and any other related decisions of the Committee and submitting its recommendations in this respect for consideration by the Committee; and
- .4 participating in the initial developmental testing of the LRIT system and reporting its findings in this respect for consideration by the Committee.

14.3 The LRIT Co-ordinator should perform the following administrative functions:

- .1 upon request, investigation of disputes and operational, technical and invoicing difficulties and make recommendations for their settlement to the parties concerned;
- .2 participation in the testing for the integration of new LRIT Data Centres into the LRIT system and providing relevant information to the Committee; and
- .3 participation in the testing of new or modified procedures or arrangements for communications between the International LRIT Data Exchange and the LRIT Data Centres and providing relevant information to the Committee.

14.4 The LRIT Co-ordinator should undertake an annual review of the performance of the LRIT system taking into account the provisions of regulation [V/19-1]², the present Performance standard and any related decisions of the Committee and should report its findings to the Committee. In this respect, the LRIT Co-ordinator should:

- .1 review the performance of Application Service Providers (or Communication Service Providers when they act as Application Services Providers) providing services to the International LRIT Data Centre;
- .2 audit the performance of all LRIT Data Centres based on archived information and their fee structures;
- .3 audit the performance of International LRIT Data Exchange and its fee structure, if any; and
- .4 verify that Contracting Governments and Search and rescue services receive the LRIT information they have requested and are entitled to receive.

14.5 The LRIT Co-ordinator should, for purpose of reviewing the performance of the LRIT system:

- .1 be given the required level of access, by the LRIT Data Centres and the International LRIT Data Exchange, to management, charging, technical and operational data;
- .2 collect and analyse samples of LRIT information provided to LRIT Data Users; and
- .3 collect and analyse statistics compiled by LRIT Data Centres and the International LRIT Data Exchange.

14.6 In addition to reporting to the Committee any identified non-conformities, the LRIT Co-ordinator may make recommendations to the Committee, based on an analysis of its findings, with a view to improving the efficiency, effectiveness and security of the LRIT system.

14.7 Neither the Organization nor any of the Contracting Governments should be responsible for making any direct payments to the LRIT Co-ordinator for the services it may provide. However, Contracting Governments may be required to pay fees to LRIT Data Centres for the LRIT information they request and receive which, for example, may contain elements to offset the costs associated with functions performed by the LRIT Co-ordinator.

² A number of provisions have been included within square brackets marked with footnote 2. The wording of the provisions so identified needs to be reviewed and decided upon by the Committee, taking into account its decision in relation to the provision, to Contracting Governments, of LRIT information transmitted by ships transiting at a certain distance off the coast of that Contracting Government, but not intending to enter a port located within its territory or a place under its jurisdiction.

ANNEX 18**MATTERS WHICH NEED TO BE ADDRESSED IN ORDER TO ENSURE
THE ESTABLISHMENT AND FUNCTIONING OF THE LRIT SYSTEM****1 Obligations of Administrations**

1.1 Each Administration should decide to which LRIT Data Centre ships entitled to fly its flag are required to transmit LRIT information.

1.2 Each Administration should provide to the selected LRIT Data Centre the following information for each of the ships entitled to fly its flag which is required to transmit LRIT information:

- .1 Name of ship;
- .2 IMO Ship identification number;
- .3 Call Sign;
- .4 Maritime Mobile Service Identity; and
- .5 [Unique shipborne equipment identifier]¹

1.3 Upon the transfer of the flag of a ship which is required to transmit LRIT information from another State, the Administration should provide, without undue delay, to the selected LRIT Data Centre in addition to the information specified in paragraph 1.2 the following information:

- .1 The effective date and time (UTC) of transfer; and
- .2 The State from which the flag of the ship has been transferred, if known.

1.4 Administrations should, without undue delay, update the LRIT Data Centre as and when changes to the information they have provided under 1.2 and 1.3 occur.

1.5 Upon the transfer of the flag of a ship which is required to transmit LRIT information to another State or when the ship is to be taken permanently out of service, the Contracting Government of the State whose flag the ship was entitled to fly hitherto should provide, without undue delay, to the LRIT Data Centre the following information:

- .1 Name of ship;
- .2 IMO Ship identification number;

¹ A number of delegations expressed the view that the Unique shipborne equipment identifier was an essential identifier in the establishment and for the functioning of the LRIT system. However, at the same time, a number of delegations, although acknowledging the importance of the identifier indicated that it would not be practically possible for Administrations to collect the related information from the ships entitled to fly their flag.

- .3 The effective date and time (UTC) of the transfer, or when the ship was, or will be, taken permanently out of service; and
- .4 The State to which the flag of the ship has been transferred, if known.

2 Obligations of Contracting Governments

2.1 Each Contracting Government should:

- .1 obtain the LRIT information to which it is entitled from the LRIT Data Centre designated under section 1. Contracting Governments which have no ships entitled to fly their flag may receive LRIT information from any one of the LRIT Data Centres but should select one LRIT Data Centre from which they wish to receive the information;
- .2 if it wishes to receive LRIT information transmitted by individual ships proceeding to a port facility located within its territory or to a place under its jurisdiction, indicate to the LRIT Data Centre the name and the IMO Ship identification number of the particular ship and either:
 - .1 the distance from its coast; or
 - .2 the distance from a port; or
 - .3 a point in time;

from when it requires the provision of LRIT information transmitted by the ship. If so decided the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information. If the standing order is a distance from a port, the Contracting Government also has to inform the centre of the name of the port each ship is proceeding to;

- .3 co-operate with a view of resolving any issues in connection with which flag a particular ship is entitled to fly;
- .4 ensure the protection of the confidentiality of the LRIT information it requests and receives and should protect these from unauthorized access or disclosure; and
- .5 ensure either the destruction of all received LRIT information which is no longer in use or their archiving in a secure and protected manner.

3 Obligations of Search and rescue services

3.1 Search and rescue services should provide information when requested by the LRIT Co-ordinator to enable the holistic review of the performance of the LRIT system and for the investigation of any disputes.

ANNEX 19**TERMS OF REFERENCE OF AN *AD HOC* LRIT ENGINEERING TASK FORCE**

The *Ad Hoc* LRIT Engineering Task Force should, taking into account the provisions of SOLAS regulation V/19-1 and the draft Performance standards and functional requirements for long-range identification and tracking of ships, develop and submit to the [Committee][MSC 82] for approval:

- .1 technical specifications for the International LRIT Data Exchange;
- .2 technical specifications for the International LRIT Data Centre;
- .3 technical specifications for communications within the LRIT System network (i.e. between the LRIT Data Centres and International LRIT Data Exchange); and
- .4 protocols for the development testing of the LRIT System and for testing the integration into the system of new LRIT Data Centres.

ANNEX 20

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GUIDE TO RECOVERY TECHNIQUES

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], with a view to providing specific guidance to seafarers on recovery techniques, approved the Guide on recovery techniques prepared by the Sub-Committee on Radiocommunications and Search and Rescue at its tenth session (6 to 10 March 2006), as set out in the annex.

2 Member Governments and international organizations in consultative status are invited to bring the annexed guide to the attention of all concerned, in particular distribution to seafarers.

3 Member Governments, international organizations and others concerned are encouraged to enhance the attached Guide with pictorial and other relevant information, as appropriate.

ANNEX

GUIDE TO RECOVERY TECHNIQUES

1 INTRODUCTION: YOUR PART IN RECOVERY AT SEA

1.1 As a seafarer, you may suddenly be faced with having to recover people in distress at sea. This might be a person overboard from your own ship – a fellow crew member, or a passenger – or your ship might be responding to someone else’s emergency; for example a ship abandoned because of flooding, fire or a ditched aircraft.

1.2 You may have to prepare, with little or no notice, to recover people – maybe very many people. Whoever they are, their lives may be in your hands.

1.3 In many areas of the world, especially when out of range of shore-based Search and Rescue (SAR) facilities, your ship may be the first, or the only, rescue unit to reach them. Even if you are joined by specialized units, you will still have a vital role to play, especially in a major incident. If you are required to recover people in distress, it is your capability and your ship that matters. You may have to find a unique solution to a unique lifesaving problem. To ensure that you can respond safely and effectively, you need to think about the general issues *beforehand*.

1.4 The recovery process is often far from simple. For example, it may be complicated by:

- .1 difference in size between your ship and the survival craft: survivors may have to climb or be lifted considerable distances to get into your ship;
- .2 differences in relative movement between your ship and the survival craft alongside: it may be difficult to keep the survival craft alongside and for survivors to get onto ladders etc or in through shell openings; or
- .3 physical capability of those to be recovered: if they are incapacitated, they may be able to do little or nothing to help themselves.

1.5 This guide discusses some of these underlying problems, as well as some of the solutions. It suggests some practical recovery techniques which have been used successfully to recover people in distress.

2 AIMS OF THIS GUIDE

2.1 This guide focuses on recovery and the work you may have to do to achieve it. The need for recovery is rare, and your ship may not be designed for the task. However, you may find yourself faced with having to attempt it.

2.2 This guide is intended to be used as a reference document. You should read it now and you should refer to it again while proceeding to the scene of the emergency, as part of your preparation for the recovery operation.

2.3 The guide’s principal aims are to help *you* – as master or crew of a responding ship – to:

- .1 **ASSESS** and decide upon appropriate means of recovery aboard your own vessel;

- .2 **TRAIN** in the use of these means of recovery, in general preparation for emergencies; and
- .3 **PREPARE** yourselves and your vessel when actually responding to an emergency.

2.4 This guide supports the recovery guidance in Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, 'MOBILE FACILITIES', which should be available on board. Additional guidance is also in the Appendix to this guide.

2.5 Recovery – getting people in distress into your ship – is just a part of the overall rescue operation. For guidance on SAR operations as a whole you should refer to the IAMSAR Manual.

2.6 For simplicity, this guide refers to lifeboats, liferafts, etc. as 'survival craft'. It is also possible that you will be recovering people from other small craft such as: small SAR units; directly from small vessels in distress such as yachts or fishing boats; or from the water, etc. In general the same recovery principles apply throughout.

3 THE TASK OF RECOVERY: POSSIBLE PROBLEMS

3.1 When proceeding to the scene of an emergency at sea, it is likely that you will only have limited information about what you will find when you get there. What you may well find are people in survival craft or in the water. You should prepare for their recovery.

3.2 Unless it is properly prepared for, the recovery process may be a difficult and dangerous operation. The following list covers some of the problems which you may have to face.

- .1 Recovery from survival craft is not simple – see below.
- .2 In a rapid or uncontrolled abandonment, when not everybody has been able to get into survival craft, you may also find people in the water, or clinging to floating wreckage, etc. These people are less likely to be able to help themselves than if they were in survival craft. Nor will they survive so long.
- .3 People may still be aboard the craft in distress and direct recovery may be required without the intermediate use of survival craft.
- .4 Small craft are especially vulnerable if they are in close proximity to your ship. Their masts, rigging or other gear may become entangled and there is the danger of crushing or other damage as the two vessels move in the seaway.
- .5 People may need to be recovered from other places which they have reached before your arrival (rocks, reefs, sandbanks, shorelines only accessible from the sea, navigational marks, moored vessels, etc.).
- .6 In addition to recovering people yourself, you may have to receive people from other SAR units such as rescue boats or helicopters. These units may wish to transfer people to your ship rather than take them directly ashore, so that they can return to pick up others more quickly. Many of the problems associated with recovering people from survival craft also apply to the transfer of people from (small) rescue boats into (large) ships.

- .7 Transfer from helicopters has its own special requirements, including training and preparation on board – see IAMSAR Volume III Section 2: ‘Helicopter Operations’.

3.3 There are likely to be further complications, even after a controlled evacuation in which people have entered survival craft successfully.

- .1 Types of survival craft vary.
 - .1 Powered survival craft may be able to manoeuvre themselves alongside the recovering ship (your ship), but those without power cannot do so.
 - .2 Many survival craft are covered and these covers may not be removable. Covers assist survival while waiting for help to arrive, but they can get in the way during the recovery process. Getting out of enclosed survival craft may be difficult when the craft is in a seaway, particularly if the exit points are small and difficult to negotiate.
 - .2 Those awaiting recovery may lack the ability to help themselves or to help others to help them. This may be because of injury, illness (including seasickness after a period in a survival craft), the effects of cold or heat, age (whether elderly or very young) or infirmity.
 - .3 It is likely that people awaiting recovery will have little or no experience of transferring between small craft like their survival craft and larger ones such as your ship. For example, stepping onto a pilot ladder and then climbing it is not difficult for a fit person used to doing so, but this may be effectively impossible for others.
 - .4 There may be language difficulties. If instructions are not properly understood, the consequences may be dangerous. You may not have a language in common with the person to be recovered and, even when you do, they may not understand your instructions.
 - .5 There may be a large number of people to recover. In the case of a passenger ship, this number may amount to hundreds or even thousands of people. This possibility brings additional problems with it, including:
 - .1 **SCALE:** the sheer size of the problem can be daunting and the stress of the situation may lead you to lose focus and efficiency.
 - .2 **PRIORITY:** who should be recovered first? It is clear that people in the water should take priority over those in survival craft. It is less clear whether the injured or infirm should take priority over the more capable, who can be recovered more quickly.
 - .3 **RESOURCES:** facilities aboard your ship may become overwhelmed. Survivors will need shelter and, subsequently, warmth, water, food and, probably, some medical attention.
 - .4 **PEOPLE:** you will need sufficient numbers of people to navigate your ship, to operate the means of recovery and to escort those recovered to shelter.

4 PLANNING FOR RECOVERY

4.1 The circumstances you find when you arrive at the scene will differ from incident to incident; but *general* planning can, and should, be done.

4.2 In planning how best to bring people aboard your ship, you should consider:

- .1 who will be required for the recovery process;
- .2 who will manage the ship in the meantime;
- .3 what can be done to help people *prior* to recovery;
- .4 the means of recovery available to you;
- .5 where on the ship the survivors should be taken after recovery;
- .6 how they will be looked after once they are aboard; and
- .7 how you will keep your own crew and passengers informed of what's going on.

4.3 Effective recovery of survivors will only occur through planning and preparation:

- .1 have a plan;
- .2 make sure everyone understands the plan and their own place in it;
- .3 be prepared; and
- .4 have everyone ready, with all the equipment they need, before commencing the recovery operation.

4.4 You may not have much time to think about details when the emergency happens; but if you have thought about your capabilities beforehand and you have trained to use them effectively – in short, if you are *prepared* – you will not need much time.

4.5 Remember that plans are of no use unless you know how to put them into effect. This requires training, and the testing of both plans and training by exercise.

5 PROVIDING ASSISTANCE PRIOR TO RECOVERY

5.1 People can still die after you have found them but before you can get them on board. Recovery takes time – and those in distress may not have much time, especially if they are in the water, unprotected and/or unsupported. You should be ready to help them stay alive until you are able to recover them.

5.2 Depending on how long the recovery is likely to take, they may need:

- .1 **BUOYANCY AIDS** – lifebuoys, lifejackets, a liferaft;

- .2 **DETECTION AIDS** – high-visibility/retro-reflective material, lights, a SART, an EPIRB;
- .3 **SURVIVAL AIDS** – shelter, clothing, drink, food, first aid supplies; and
- .4 **COMMUNICATIONS EQUIPMENT** – a handheld radio, for example.

5.3 The simpler buoyant items – lifebuoys in particular – can be dropped or thrown to those in distress on an early pass by the ship. If possible, contact should be established by messenger – rocket line, rescue throw-line, or heaving line – and the items passed under control. Remember that not all lines are buoyant, and that you will need to get them very close to those in distress if they are to have a chance of seeing and getting hold of them.

5.4 Buoyant items may be veered down to those in distress while the ship stands clear, by drifting them down on lines made fast to a lifebuoy, for example, or by towing them into a position where those in distress can get hold of them.

5.5 If the recovery operation looks like it might be protracted, one or more of your own liferafts can be deployed. Remember, however, that a liferaft might drift faster than those in distress can swim. You will need to guide it to the people you are assisting, and this means making a line fast to the raft before deploying it: do not rely on the raft's own painter, which may tear away.

5.6 You can also help those in distress while you ready your ship for the recovery operation by making a lee for them or – if contact can be established by line – by towing them out of immediate danger such as that posed by the wreck itself or by spilt hazardous cargo, or by a lee shore.

6 THE RECOVERY PROCESS

6.1 During the recovery process itself, there will be three basic tasks to complete:

- .1 bringing people to the side of the ship so that they can be recovered;
- .2 getting people into the ship; and
- .3 dealing with them once they are aboard.

6.2 Some food for thought on each of these tasks is given below. Think carefully about each of them in your planning and preparation. If you have done so, the recovery process should be easier when you have to carry it out.

- .1 **PREPARE** your means of recovery before you arrive at the scene;
- .2 **PREPARE** yourself and your crew before you arrive at the scene. Everyone should know their duties and stick to them as much as possible;
- .3 **PREPARE** on-board communications, so that lookouts and the recovery team will be able to communicate readily with the Bridge team;

- .4 **THINK** about the approach before making it:
 - .1 **DETERMINE** what will be the most significant factor in creating a lee for the casualty – wind, sea or swell;
 - .2 **ASSESS** navigational hazards on scene;
 - .3 **DECIDE** on which side you want to make the lee, bearing in mind your own ship's manoeuvring characteristics;
 - .4 **CONSIDER** running by the casualty first, if time permits, to help you make your assessment;
 - .5 **CONSIDER** stopping well short of the casualty during the final approach, to get the way off your vessel and to assess the effects of wind, sea and swell when stopped/at slow speeds;
 - .6 **APPROACH** with the significant element (wind, sea or swell) fine on the weather bow and your recovery target fine on the lee bow; and
 - .7 as you come up to the craft or person in the water, turn away from the weather and stop to create the lee, with your recovery target close on your lee side;
- .5 **ENSURE** that you have sufficient lookouts who can communicate with the Bridge. Remember that during the final approach to a survival craft or a person in the water they may not be visible from the Bridge;
- .6 **ENSURE** that the lookouts know their duties; and
- .7 **BE READY** to receive craft and/or people alongside, with boat ropes rigged and other equipment (including safety lines and buoyant equipment) ready to hand.

7 BRINGING PEOPLE TO THE SIDE OF THE SHIP

7.1 If people in survival craft or in the water cannot put themselves in a position from which they can be brought safely aboard the recovering ship, someone (or something) has to go and get them.

7.2 Manoeuvring a large ship in a seaway to come alongside, and then remain alongside, a small target like a survival craft or a person in the water will be difficult.

- .1 The main danger in this case is that of running over and/or crushing the target.
- .2 It is also possible to over-compensate for that risk, so that the survival craft or person will be missed because still too far away.
- .3 Both your ship and the target are likely to be affected, unequally, by wind, sea state, and water currents.

7.3 There may be other factors which make this task more difficult still. Be prepared for them. For example:

- .1 Room to manoeuvre may be limited by nearby navigational hazards, or there may be more than one survival craft in the area: you may have to avoid some while manoeuvring alongside another.
- .2 Beware of running down people in the water (who may be very hard to see) while making your approach to your chosen target. Post good lookouts with direct communications to the Bridge while in the incident area.
- .3 Although powered survival craft may be able to get themselves (and other units they are towing) alongside your ship and keep themselves there, this can be difficult in a seaway. In rough seas, the survival craft or the people aboard them may be damaged if thrown against the ship's side. Have boat ropes ready, and fenders if you have them.
- .4 People in the water may be able to swim (over short distances) to get to the ship's side. It is possible that people will enter the water from survival craft in order to do so as you approach, although they should be told not to if possible – at least until you are ready to recover them.

7.4 Overcoming the problems of manoeuvring is a matter of seamanship – and of preparation. Manoeuvring your own ship at slow speed, judging its movement and that of the survival craft or person in the water, is a skill. Appropriate training should be encouraged by owners and operators of all ships.

7.5 However, it may be unsafe – or simply impossible – to bring the survival craft or the people in the water alongside your ship directly. You may have to find another way of reaching them. One way to do this is to launch a rescue craft from your own ship, *if this can be achieved safely*.

7.6 Launching a rescue craft will serve three purposes:

- .1 it will make the final approach to the target easier;
- .2 primary recovery (into the rescue craft) will be easier, because of the rescue craft's lower freeboard and similar motion to that of the target; and
- .3 completing the recovery by returning to the ship and being lifted back aboard using the rescue craft's own recovery system should also be easier – always provided that it can be done safely.

7.7 Only limited numbers of people can be brought aboard on each occasion, but this may be a safer option than direct recovery. It also introduces a number of control measures, allowing more time for dealing with those who have been recovered once they are aboard the ship.

7.8 The best lee for launching and recovery of rescue craft is likely to be obtained by putting the sea on a quarter, steaming slowly ahead, and doing the boat work on the opposite side.

7.9 For most ships, however, launching rescue craft may only be an option in reasonably good weather conditions. In moderate sea conditions or worse, launch and recovery may be too hazardous, putting your own crew into danger and making an already difficult situation worse.

7.10 The use of your own rescue craft must be for the master to decide, depending on the particular circumstances of the incident. Factors to consider include:

- .1 **the severity of the risk to those in distress:** can they be left where they are until more suitable help arrives (supported in other ways by the assisting ship in the meantime – see below) or are alternative means of recovery available;
- .2 **on scene weather conditions:** particularly sea state, but also wind strength and direction, ambient temperatures and visibility;
- .3 **the capability of the rescue craft:**
 - .1 the efficiency of the rescue craft launch and recovery equipment;
 - .2 the competence and experience of the rescue craft's crew;
 - .3 the availability of personal protective equipment for the rescue craft's crew;
 - .4 the effectiveness of communications between the rescue craft and the recovery ship;
 - .5 the proximity of navigational hazards to the rescue craft; and
 - .6 the rescue craft's ability to navigate, whether independently or conned from the ship, so as to avoid hazards and to locate the person(s) in distress;
- .4 **the manoeuvrability of the recovering ship:** can you get into a position to launch and recover the rescue craft safely; and
- .5 **the proximity of navigational hazards:** limiting your ability to manoeuvre or to provide alternative help to those in distress.

7.11 An alternative to sending out a rescue craft is to pass lines to those needing recovery, so that they may be pulled alongside the ship. Rocket lines, rescue throw-lines and heaving lines may be used for this purpose, and all should be made available for use: lines will be needed in any event for securing survival craft alongside, etc.

7.12 Buoyant appliances such as lifebuoys or an inflated liferaft may be veered down to those in distress on secure lines, and then pulled back to the ship.

7.13 Streaming lines astern is another option, preferably with buoyancy and means of attracting attention to them attached – lifebuoys, for example, with lights at night. The ship should then be manoeuvred around those in distress so that they may take hold of the streamed line. Once this is done the ship may stop and those in need of recovery pulled alongside.

8 GETTING PEOPLE ABOARD THE SHIP: FACTORS TO CONSIDER

8.1 Once people are in a position from which they can be recovered, the next part of the task is to get them aboard the ship. This will depend on:

- .1 the prevailing weather and sea conditions;
- .2 the condition of the people to be recovered;
- .3 the size of your ship;
- .4 your ship's design;
- .5 the equipment available; and
- .6 the competency of those using it.

8.2 Weather and sea conditions on scene will be important, particularly the sea state.

- .1 How is the recovery target moving in relation to your ship?
 - .1 In a seaway a large ship moves very differently to a small craft (or person) alongside her. The smaller target tends to react to every sea and swell wave, while the large ship does not.
 - .2 The recovery target in the water may be run down, crushed, capsized or swamped by your ship, or it may be left behind.
 - .3 It may be very difficult to transfer from a small craft onto your ship as the two move vertically relative to each other.
 - .4 Your ship and the recovery target will be subject to leeway in different ways. Ship and target may be blown together or apart. Water currents may also have different effects on your ship and the target.
- .2 Your ship's own movements will also be a factor.
 - .1 As the ship moves in sea and swell, people may be swung against the ship's side as they climb or are lifted to an embarkation point.
 - .2 As people climb or are lifted into your ship, the craft they have just left may rise on a wave, striking or trapping them against the ship's side.
 - .3 People may swing away from the side and collide with another hazard, including the craft they have just left.

8.3 You should attempt to minimize the difficulties caused by rough seas. Consider the following when planning recovery operations:

- .1 Try to keep sufficiently off the wind to reduce the ship's roll and pitch and to create a lee. Find by experiment (if time permits) the position in which the recovery target lies most easily alongside.
- .2 Steaming slowly ahead with the recovery target secured alongside and the weather on the opposite quarter should ease differential movement, although it does introduce other risks. Craft may be damaged, lines may part, or people may fall into the water during the recovery operation, and drift astern.
- .3 Try to secure survival craft alongside if possible, to prevent them being blown away or left behind.
- .4 When lifting people, control lines should be rigged to the hoist and tended in an effort to minimize swinging.
- .5 Safety lines should always be used to secure the casualty in case he/she is injured and/or falls.
- .6 If the differential movement is too violent, you will need to consider other options.
- .7 It may be possible to transfer those to be recovered to an intermediate platform such as a liferaft veered down to them, or acting as a fender against the ship's side.
- .8 It may be necessary to have them enter the water, suitably equipped with flotation aids and safety lines from the ship, to be pulled across a safety gap between the ship and the survival craft.
- .9 Ultimately, however, the only option may be to abandon the attempt at recovery and to stand by the target, supplying whatever assistance you can until a more capable recovery unit arrives or conditions ease.

8.4 The condition of the people to be recovered is another critical factor. When responding to an emergency, you will usually not know the condition of those needing recovery until you arrive.

- .1 People's condition at recovery can range from the fit and healthy to the entirely helpless who, through injury, infirmity, hypothermia, or fear can do nothing to assist in their own recovery.
- .2 This wide range of capability may be found across a group of people to be recovered, so that some of the group will be able to climb unaided into the recovering ship while others will need assistance. It may be found in an individual: even the fit and experienced seafarer's capability will erode over time, and may erode quickly. Weather conditions – ambient temperatures in particular – and the level of protection available prior to recovery are critical.

- .3 You may find that people in distress are able to help themselves (and others). You may find that you will have to do all the work yourself because they cannot, or can no longer, help themselves. You are likely to find a mix of these conditions.
- .4 Fear is a factor deserving attention. Many of those awaiting recovery will be able to deal with it; others may not. The latter may try to be recovered first or (if afraid for missing friends or family members, for example, or if simply afraid of the recovery process itself) they may *resist* recovery. In either case they may act dangerously. Be as ready as you can for such unpredictable behaviour, including having extra lifesaving equipment to hand in case someone ends up in the water. The aim is to retain control of the recovery process overall: loss of control by individuals can be tolerated unless it directly affects others' safety.

8.5 Be ready to deal with each of these possibilities. You should plan ahead, so far as is practicable.

- .1 It may be best to bring at least some of the more capable survivors aboard first. You will probably be able to recover more capable people more quickly than you can recover the incapable, and, once aboard, they may be able to help you, by looking after other survivors for example. On the other hand, some of the most capable should also be among the last to be recovered, as you will need them to help prepare the incapable for recovery.
- .2 Communications with those awaiting recovery are therefore very important. A controlled and correctly prioritized recovery process should be established and maintained.

8.6 The size of your ship, relative to your recovery target, will affect differential movement, as discussed above.

8.7 It will also determine how far those being recovered have to climb or be lifted; which, in turn, may affect:

- .1 how long recovery takes;
- .2 how many people can be recovered;
- .3 whether they are exposed to additional risks such as swinging against the ship's side; and
- .4 how anxious they are about the operation.

8.8 The ship's design may make recovery simpler. A high-sided ship may be able to use low freeboard areas or openings in her hull such as pilot, bunkering, or cargo doors.

8.9 The best point of entry into the ship should be assessed with the prevailing conditions in mind. The questions to be considered include:

- .1 Where can ladders or other climbing devices be rigged?

- .2 Where can lifting devices be used? What are the power sources and leads for such devices?
- .3 Are there any low freeboard areas? Can they be safely accessed in bad weather or difficult sea conditions? Can the means of recovery be rigged there? Can those recovered be safely removed from there to shelter?
- .4 Are there any hull openings? Can they be safely accessed and opened in bad weather or difficult sea conditions? Can the means of recovery be rigged there? Can those recovered be safely removed from there to shelter?
- .5 If thinking of using accommodation ladders sited aft, is there a danger of survivors or craft near the foot of the ladder being trapped under the hull as it tapers to the stern?
- .6 Is there belting along the ship's sides? If so this is a particular hazard to small craft, with significant danger of the craft being trapped beneath it. Recovery points should be at any breaks in the belting.

8.10 The equipment available and the number of people competent to operate it are also key factors. If there aren't enough people trained to operate all available means of recovery, or if the recovering ship has plenty of people but hasn't prepared adequate recovery equipment, efficiency of recovery will obviously be impaired.

- **ASSESS** your equipment
- **PLAN** its use
- **ASSIGN** people to operate it
- **ENSURE** that they know how to operate it

9 GETTING PEOPLE ABOARD THE SHIP: CLIMBING AND LIFTING

9.1 The methods of recovery discussed in this guide are *in addition to* purpose-built means of recovery carried aboard the ship. They are methods that seafarers have used successfully in the past. Consider which ones can be used aboard your ship; or whether you can devise others.

9.2 You may have to use these methods in the absence of purpose-built means of recovery; or in their place if they cannot be deployed in the prevailing circumstances. You may also need to use these methods as extra means of recovery if there are many people needing to be picked up – especially if recovery time is limited by likely survival times, or by the onset of darkness or bad weather, for example.

9.3 The following climbing devices should be considered:

- .1 pilot ladders and lifts;
- .2 accommodation ladders;

- .3 your own survival craft embarkation ladders; and
- .4 other ladders and nets.

9.4 Some or all of these may be rigged, in most cases whatever the conditions. The following points should be borne in mind:

- .1 *Lifting* survivors is preferable to having them climb a ladder or net – see below.
- .2 Ladders and nets should be so rigged as to minimize the climb; that is, where the freeboard is lowest or at suitable openings in the ship's side.
- .3 They should be rigged on the flat sides of the ship, away from bow and stern.
- .4 Their lower ends should be weighted so as to hang about two metres below the water level, enabling people in the water to get onto them.
- .5 If possible, rig nets and jacob's ladders so that they hang clear of the ship's side, to enable people to grasp the rungs or cross-ropes more readily.
- .6 Pilot ladders – or, if they can be rigged safely in the prevailing conditions, accommodation ladders – are preferable to nets and jacob's ladders.
- .7 All ladders and nets should be tended.
- .8 Safety lines should be deployed alongside them, with rescue strops or loops in the end for the casualty's use. These safety lines should be correctly secured and tended.
- .9 A liferaft can be deployed at the foot of the ladder or net, to act as a transfer platform.
- .10 People may not be able to make the climb. In such circumstances a crew member from the recovering ship, wearing personal protective equipment and a safety line, may have to go down to assist.
- .11 If people are incapable of making the climb, the ladder or net may have to be recovered with them secured to it. For individual survivors, this may be possible manually. Alternatively a winch or other power source will have to be used.

9.5 In general, lifting survivors is preferable to having them try to climb ladders or nets. The following lifting devices should be considered:

- .1 cranes (including stores cranes etc), gantries, derricks;
- .2 davits;
- .3 windlass, winches; and
- .4 proprietary recovery devices.

9.6 The following points should be borne in mind:

- .1 Lifting devices should be rigged so that those recovered can be lifted clear of hazards and landed on deck in a safe area.
- .2 So far as possible, lines led from windlass or winches should be rigged so that the casualty can be lifted above the deck edge.
- .3 Control lines should be rigged to the lower end of the lift, so that swinging against the ship's side can be limited.
- .4 The lower end of the lift should be equipped with at least a rescue strop or a secure loop.
- .5 A purpose-built or improvised rescue basket, or a proprietary recovery device, is usually better than strops and loops.
- .6 People who have been in the water, the injured and the incapable, should be lifted in a horizontal or near-horizontal position if possible (for example, in a basket, or in two strops; one under the arms, the other under the knees). This minimizes the risk of shock induced by sudden transfer from the water and possible hypothermia.
- .7 A crew member from the recovering ship, wearing personal protective equipment and a safety line, may be able to go down with the lift to assist those incapable of helping themselves into the strop, loop, basket or other device.

9.7 The **rescue basket** mentioned above is a particularly useful recovery tool. It may be possible to improvise such a basket; but it is not an expensive piece of equipment and it is recommended that a purpose-built unit be carried on board.

9.8 The rescue basket usually takes the form of a metal frame with floats/fenders around its perimeter and the lifting hook made fast to the top of the frame, clear of people inside. The basket floats partially submerged, so that people can easily enter it or be pulled into it. The floats double as fenders during the lift, should the basket swing against the ship's side. Some baskets are designed to fold for ease of stowage. The size of the basket, and how many people it can lift at once, largely depends on the ship's lifting capability.

9.9 The control lines mentioned above – usually rigged fore and aft along the ship's side, and tended during the lift in order to steady the lift and minimize swinging – may be supplemented by a line to the survival craft. This line serves two functions. It may be tended by those still aboard the survival craft as an additional means of controlling the hoist's lateral movements. It also serves to maintain contact with the survival craft throughout, so that the hoist may be brought back more easily to the survival craft for the next lift.

9.10 Your own ship's Survival Equipment may be used for recovery purposes.

- .1 Liferafts and lifeboats, left on the falls, may be used as lifts in relatively good conditions. Lowering these units to water level enables people to be transferred from survival craft and lifted to the recovering ship's embarkation deck. It should be noted that:

- .1 Any quick-release gear should be disabled.
- .2 Care will be needed not to overload davit winches not normally designed to recover craft with more than their own crew aboard: people can usually only be recovered in small numbers by this method.
- .2 Ships fitted with marine evacuation systems of the slide type can deploy them and recover people by pulling them up the slide.
 - .1 Light ladders may be carried for deployment down the slide, to enable people to climb it unaided: this will usually be easier than climbing a ladder up the vertical ship's side.
 - .2 Winches can be rigged so that people may be hauled up the slide on lines, secured by rescue strops or loops.

9.11 A further option to consider, if winch-fitted Helicopters are on scene, is to use them as transfer lifts. People can be winched from survival craft directly onto the recovering ship – which is a quicker operation than taking them into the helicopter's cabin first. The helicopter is effectively used as a crane.

10 STANDING BY WHEN PEOPLE CANNOT BE RECOVERED

10.1 There will be times when recovery cannot be attempted or completed without unduly endangering the ship, her crew or those needing recovery. Only the assisting ship's master can decide when this is the case.

10.2 Assistance can still be given to those in distress, even if you cannot recover them. Standing by until other help arrives or conditions improve will:

- .1 give comfort to the survivors, especially if communications can be established;
- .2 assist the Rescue Co-ordination Centre, as you will be able to provide updated and detailed reports on the situation; and
- .3 assist other SAR facilities:
 - .1 your ship is easier for them to locate than a survival craft;
 - .2 you can provide updated and detailed reports; and
 - .3 units such as helicopters will be able to transfer casualties to you even when you cannot recover them directly.

10.3 But, as discussed above, more direct help can also be given.

- .1 Your own lifesaving appliances – liferafts in particular – can be deployed so that those in distress, particularly people in the water, can use them.

- .2 If lines can be passed to survival craft, they may be kept out of immediate danger; towed to a position where conditions are easier and recovery may be attempted; or even towed to a nearby place of safety.
- .3 You can provide a lee for survival craft, protecting them from the worst of the conditions, and making life a little easier for those aboard.
- .4 You may be able to supply more direct aid, passing supplies, including medical supplies, to the survival craft – by floating them down on lines fast to a lifebuoy, for example, or by towing them into a position where those in distress can get hold of them.

11 IMMEDIATE CARE OF PEOPLE RECOVERED

11.1 Recovery does not end when the survivor sets foot on your deck. He or she still needs immediate help – and is still at some risk, in a strange environment and having been under great stress.

11.2 People recovered will need simple directions, and preferably an escort, to shelter, out of harm's way. You should decide beforehand where you wish survivors to go aboard your ship, how they are going to get there, who will take them, and who will look after them once they arrive. This should include provision for people who are disorientated and perhaps unable to understand instructions. It should also include provision for those who are physically incapable of moving about the ship.

11.3 Remember in particular the risk of shock induced by sudden transfer from the water and possible hypothermia. People, who have been in the water, the injured and the incapable, should, if possible, be taken from the water horizontally and should be carried in a horizontal or near-horizontal position. They should be placed in the unconscious position as quickly as possible and kept this way. Refer to guidance on the treatment of hypothermia.

11.4 You should also decide what you are going to do with the dead. Bodies may be recovered, or people recovered alive may die aboard your ship. Some immediate action should be taken, if it is only to remove them from the place where you are sheltering the living. Attention is drawn to guidance on the treatment of hypothermia and, in particular, to the advice that people suffering from hypothermia may *appear* to be dead, yet can still be resuscitated. Ask for medical advice.

11.5 Further guidance on the care of people recovered may be found IAMSAR Volume III ('Mobile Facilities') Section 2 'Care of Survivors'. As this further care is post-recovery, it is beyond the scope of this guide. You are recommended to refer to the IAMSAR Manual for help with the next stage of the rescue operation.

12 CONCLUSIONS

12.1 If you find yourself answering a distress call and faced with the prospect of recovering people at sea, it is certain that the circumstances will be unique – and it is possible that your response will have to be so too.

12.2 It helps to consider the possibilities beforehand: possible problems and possible solutions. It helps to plan and to prepare – and preparation means assessing the recovery options aboard your ship, and training in their use.

12.3 It could save a life (even yours!). It could save many lives.

- .1 **ASSESS** the recovery options aboard your ship;
- .2 **TRAIN** in their use; and
- .3 **PREPARE** to save lives.

APPENDIX

ADDITIONAL INFORMATION BASED ON VOLUME III OF THE IAMSAR MANUAL

GENERAL

1 The following additional information is provided, which is based on Volume III of the IAMSAR Manual. Volume III should be referred to for further guidance, for example on the transfer of survivors from helicopters and on the immediate care of survivors once successfully recovered.

RECOVERY OF SURVIVORS BY ASSISTING VESSELS

2 Seafarers should consider how to recover survivors into their own vessels under various environmental conditions. Recovery methods include:

- .1 using throwing rockets or heaving lines to pass lifebuoys and/or lines to survivors;
- .2 streaming a rope, with lifebuoys or other flotation attached;
- .3 rigging pilot ladders, jacob's ladders or nets, preferably clear of the ship's side, with safety lines. If survivors are unable to climb, ladders or nets may have to be recovered with the survivors secured to them. Where practicable:
 - .1 rig ladders or nets from pilot doors or other low openings;
 - .2 deploy safety lines with rescue strops or loops;
 - .3 use suitably equipped crew members to assist survivors directly; and
 - .4 deploy a liferaft with the ladder or net to act as a transfer platform;
- .4 pulling survivors up suitable marine evacuation systems;
- .5 deploying liferafts or lifeboats for survivors to hold onto, or climb into;
- .6 using rafts or boats as lifts, leaving them on the falls if conditions permit;
- .7 lifting survivors using gantries, cranes, davits or derricks, with lines rigged to minimize swinging against the ship's side;
- .8 deploying purpose-built or improvised recovery baskets;
- .9 rigging a boat rope for boats and survival craft to secure alongside; and
- .10 lowering embarkation ladders.

3 Any lights in use must not be directed towards helicopters operating in the area.

4 Survivors in the water should be lifted in a horizontal or near-horizontal position if possible (for example, in two strops; one under the arms, the other under the knees) to minimize the risk of shock induced by sudden transfer from the water and possible hypothermia.

5 Assisting vessels should also be prepared to receive survivors from helicopters.*

6 When the risks involved in recovery operations outweigh the risks of leaving the survivors in life saving appliances, consider the following actions:

- .1 using the ship to provide a lee for the survivors;
- .2 deploying life-saving appliances from the assisting vessel;
- .3 maintaining visual and communications contact with the survivors;
- .4 updating the co-ordinating authority; and
- .5 transferring essential survival and medical supplies.

* Refer to IAMSAR Volume III Section 2: 'Helicopter Operations'.

ANNEX 21

DRAFT MSC CIRCULAR

GUIDELINES ON THE PROVISION OF EXTERNAL SUPPORT AS AN AID TO INCIDENT CONTAINMENT FOR SAR AUTHORITIES AND OTHERS CONCERNED

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], with a view to providing specific guidance on the provisions for providing external support as an aid to incident containment for SAR Authorities and others concerned, approved the Guidelines on the provision of external support as an aid to incident containment for SAR Authorities and others concerned prepared by the Sub-Committee on Radiocommunications and Search and Rescue at its tenth session (6 to 10 March 2006), as set out in the annex.

2 Member Governments and international organizations in consultative status are invited to bring the annexed guidance to the attention of SAR Authorities and others concerned.

ANNEX

GUIDELINES ON THE PROVISION OF EXTERNAL SUPPORT AS AN AID TO INCIDENT CONTAINMENT FOR SAR AUTHORITIES AND OTHERS CONCERNED

1 Introduction

1.1 In addition to the services that SAR Authorities provide in accordance with the SAR Convention, other emergency support can be provided or arranged in order to assist the ship to remain habitable. While there is no obligation on SAR Authorities to provide such services, they may be best-suited to assist if appropriate plans and resources to do so are developed.

2 Types of external support

2.1 The following types of externally supplied assistance and support may be available to those remaining on board:

.1 Fire-fighting personnel and equipment

Teams of shore-based fire-fighters, suitably trained and equipped for incidents at sea, may be brought to the ship in distress by helicopter and/or by surface craft, to advise and assist the ship's crew in tackling and/or containing fires, smoke, and/or chemical hazards arising from spilled, leaking or burning materials. Fire and/or salvage teams may also be able to bring additional equipment to the ship to assist in dealing with such hazards.

.2 Extrication of trapped persons

Fire and/or salvage teams may be brought to the ship with suitable equipment to rescue, or assist with the rescue of, persons trapped in machinery, etc., or by wreckage, flooding, fire, smoke or other environmental hazard, or in conditions of list restricting or preventing the use of stairs and walkways.

.3 Salvage personnel and equipment

It is axiomatic that lifesaving takes precedence over salvage – but saving the ship may also be the best means of saving her passengers and crew. Salvage teams, trained, equipped and experienced in dealing with incidents at sea can, as part of or in addition to their normal salvage work, assist with lifesaving by, for example, helping to keep a ship afloat, upright and stable.

.4 Emergency towing

Provision of a vessel capable of establishing and maintaining a tow on a disabled ship may also be a lifesaving measure if, for example, the ship is thereby kept clear of navigational hazards. Towing may also be a rescue measure if the ship can be brought to a place of safety with her people still aboard.

.5 Damage control equipment

Equipment may be brought to the ship to prevent further damage, control flooding, restore stability, and/or to enable (temporary) repairs to be undertaken, thus enabling the ship to reach a place of safety under her own power or under tow.

- .6 **Engineering support**
In cases of breakdown of main propulsion systems or other key equipment, the provision of extra engineering personnel and equipment in support of ship's staff may enable the ship to keep her people aboard until she reaches a place of safety.
- .7 **Medical assistance**
Medical teams, equipment and/or supplies may be brought to the ship to assist ship's staff with triage and initial treatment of illness or injury, stabilizing patients so that they can be kept on board until a place of safety is reached rather than being exposed to the additional risk and trauma of being taken ashore by helicopter or boat.
- .8 **Decontamination teams**
In cases where the ship is contaminated (whether by accident or by deliberate release), specialist decontamination teams and equipment may be brought to the ship to contain the damage and treat those affected. In addition to the usual aim of rescuing those directly affected, this procedure may also be necessary in order to protect other people – including the crews of SAR facilities and responding personnel at the place of safety – and equipment: the loss of a SAR unit because of contamination will have serious consequences for further SAR work, for example.
- .9 **Welfare support**
In addition to medical assistance, it may be necessary to provide other basic humanitarian services to the ship to prevent her having to be evacuated. Such services may include temporary shelter, water, food, heating, clothing and additional or replacement lifesaving equipment. Trained personnel may also be required to assist the ship's staff, particularly in the care of passengers.
- .10 **Security support**
Additional specialist support may be required according to the circumstances of the incident. Amongst such specialists are security personnel (police, military, etc.) who may be brought aboard to deal with or contain a specific security threat, or to assist in the control of passengers.
- .11 **Extra communications**
The provision of extra communications equipment and personnel to assist ship's staff will not in itself remove the need for evacuation, but should be arranged in support of other responses noted above.
- .12 **SAR liaison support**
Extra personnel and specialist equipment may be needed aboard ships engaged in responding to an incident, usually to assist with on scene co-ordination and/or with communications and logistics. Again, provision of this resource alone will not prevent evacuation, but it may be of assistance in support of other responses noted above.
- .13 **Other specialist support**
Other specialists whose support may be required are marine pilots and other staff from the coastal State, and additional or replacement ship's staff, especially if members of the original crew are incapacitated.

3 Identifying sources of external support

3.1 The SAR Co-ordinator* of each Member State should seek to identify potential sources of external support of the types listed in paragraph 2 above and should discuss with each potential source the possibility of utilizing it for rescue purposes at sea.

3.2 In seeking to identify potential sources of support, the SAR Co-ordinator should consider all emergency response resources available in the SAR Region, including salvage and counter-pollution resources, shoreside emergency services such as fire and rescue services, medical services, and security services, and the availability of seagoing tugs, and damage control and decontamination equipment.

3.3 The SAR Co-ordinator should also liaise, where practicable, with Companies** operating in the SAR Region (and particularly with passenger ship Companies) as to the support arrangements the Company has made in accordance with its responsibilities under the ISM Code.

3.4 The SAR Co-ordinator should develop and maintain a register of the specialized services available within each SAR Region which can provide external assistance and support.

4 Provision of external support

4.1 It is recommended that memoranda of understanding should be agreed by the SAR Co-ordinator and providers of external support services. Such memoranda of understanding should include details of the service available; any limitations on its use; how it will be alerted, tasked and transported to and from the scene; lines of command, control and co-ordination; communication arrangements; and any financial arrangements, including cost recovery.

4.2 The register of support services available, together with relevant contact details and details of memoranda of understanding or other agreements, should be available to the RCC.

5 Co-ordination of support arrangements with the Company

5.1 Companies and SAR services should co-ordinate their support arrangements when planning for emergency response. Relevant memoranda of understanding or other agreements should be brought to the attention of both parties.

5.2 In the event of an incident, the RCC and the Company should make early contact and establish reliable communications, so as to ensure, *inter alia*, that the support arrangements they are setting in place are co-ordinated with each other.

5.3 Which party is leading the response should also be made clear from the outset and kept under review. In general, the Company will lead in incidents that do not amount to distress, with SAR service support as necessary. In distress situations the roles will usually be reversed. In both cases, however, it will usually be for the ship's master to assess his on-board support needs, and for the Company and the SAR services to act in his support.

* "One or more persons or agencies within an Administration with overall responsibility for establishing and providing SAR services and ensuring that planning for those services is properly co-ordinated" (as defined in the IAMSAR Manual).

** As defined in the International Safety Management (ISM) Code.

5.4 Both at the planning stage and during an incident it should be agreed by both parties whether or not a resource is being used for rescue (i.e., as part of the lifesaving response in an incident amounting to distress). It is likely that other operations will be taking place in addition to SAR (counter-pollution and/or salvage operations, for example) and prioritization and co-ordination of these different parts of the overall response is important.

5.5 If costs are accrued as part of the external support function, it should be clear to both parties where those costs will fall.

6 Maritime Assistance Services (MAS)

6.1 Assembly resolution A.950(23) deals with the establishment and duties of the Maritime Assistance Service (MAS) – the point of contact between ships and the coastal State for incidents which do not amount to distress, and distinguishes between the MAS and Rescue Co-ordination Centres (RCC) in this regard.

6.2 While the MAS does not have a rescue function, and does not necessarily supply support services itself, close contact with it should be established by the SAR Co-ordinator and maintained by the RCC in order to aid communication and co-ordination. As recommended in resolution A.950(23)*, consideration should be given to having the MAS function carried out by the RCC. The RCC will then have direct knowledge of, and contact with, the services that may be available to support SAR, including external support services. An additional benefit to this arrangement is that there is then a single point of contact for the coastal State for a ship with an emergency to report.

6.3 In any event it is important that, in incidents involving other responses in addition to SAR, the priorities are clear to all involved. The safety of life takes priority over protection of the environment and the salving of property. Operations must be carefully co-ordinated so as to ensure that this is the case. This includes the use of support services whose roles may include responsibilities in more than one area of operations.

7 Conclusion

7.1 The safety of those involved in an emergency remains the chief priority at all times. If a ship remains habitable following an emergency, the SAR Authorities and others concerned should seek to provide support as an aid to containing the emergency and specifically to reduce the need for evacuation.

* “The allocation of MAS functions to an MRCC could from a practical viewpoint be an advantageous and effective solution but would require the personnel to be well trained in distinguishing between circumstances causing a ship to find itself in a distress situation and circumstances placing a ship in a difficult situation but not in distress as defined in the SAR Convention and procedures arising therefrom” (resolution A.950(23), Annex 2, paragraph 1.2).

ANNEX 22

DRAFT AMENDMENTS TO THE IAMSAR MANUAL

1 In chapter 7 of Volume II of the IAMSAR Manual, the following new paragraph is added at the end of the chapter:

“7.8 External support for ships

7.8.1 In addition to the services that SAR Authorities provide in accordance with the SAR Convention, other emergency support can be provided or arranged in order to assist the ship to remain habitable. While there is no obligation on SAR Authorities to provide such services, they may be best-suited to assist if appropriate plans and resources to do so are developed.

7.8.2 If a ship can be maintained as habitable following an emergency at sea, an evacuation might be avoided or delayed, and consequential rescue efforts might be avoided or made more effective.

7.8.3 The following are some types of externally supplied assistance and support that SAR Authorities may be able to provide or arrange from governments and emergency response resources:

- .1 fire-fighting personnel and equipment;
- .2 extrication of persons entrapped in compartments or machinery, or hampered by smoke or other environmental hazards;
- .3 salvage personnel and equipment;
- .4 emergency towing;
- .5 damage control equipment;
- .6 engineering support;
- .7 de-contamination teams;
- .8 medical assistance and other humanitarian services;
- .9 security;
- .10 communications capabilities; and
- .11 other specialist support.”

ANNEX 23**CRITERIA FOR WHAT CONSTITUTES
AN AREA REMOTE FROM SAR FACILITIES**

1 The following criteria are considered relevant in determining what constitutes an area remote from SAR facilities:

- .1 the number of people at risk;
- .2 the nature of the risk and whether containment strategies can mitigate its effects – in particular, whether the effects of the incident can be so contained as to enable those at risk to remain on board until rescued, or for a period prior to eventual evacuation, thus extending the time to recover;
- .3 the availability of SAR facilities and other resources which may be deployed in order to contain the incident and keep those at risk on board until rescued, or for a period prior to eventual evacuation, thus extending the time to recover;
- .4 the total recovery capacity of SAR facilities available to reach the scene and recover those who have taken to survival craft within the five day “time to recover” parameter and/or within survival times;
- .5 any shortfall between the number to be recovered and the capacity of those SAR facilities available;
- .6 the distance (in time) between individual SAR facilities’ start points and the scene of the emergency;
- .7 the prevailing sea conditions, both on scene and encountered by SAR facilities proceeding;
- .8 the prevailing weather conditions, both on scene and encountered by SAR facilities proceeding;
- .9 any restrictions on SAR facility deployment which limit or remove their ability to respond even if theoretically within reach of the scene of the emergency;
- .10 the ability of those at risk to survive in the prevailing weather and sea conditions until they can be recovered (that is, for a maximum of five days according to the “time to recover” parameter);
- .11 the ability of available SAR facilities to recover those at risk in the prevailing weather and sea conditions;*

* The continuing work on developing functional requirements for SOLAS ships on systems used to recover persons from survival craft and from the water should be noted in this regard. It is intended that SOLAS ships will, in future, be better able to recover people in such circumstances.

- .12 any shortfall between the time taken to recover those at risk and the five day “time to recover” parameter and/or survival times in the prevailing conditions;
- .13 availability and quality of communications; and
- .14 effective co-ordination of search and rescue response.

ANNEX 24

DRAFT MSC CIRCULAR

**ENHANCED CONTINGENCY PLANNING GUIDANCE FOR PASSENGER SHIPS
OPERATING IN AREAS REMOTE FROM SAR FACILITIES**

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], with a view to providing enhanced guidance for passenger ships operating in areas remote from SAR facilities, approved the Enhanced contingency planning guidance for passenger ships operating in areas remote from SAR facilities prepared by the Sub-Committee on Radiocommunications and Search and Rescue at its tenth session (6 to 10 March 2006), as set out in the annex.

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

ANNEX

ENHANCED CONTINGENCY PLANNING GUIDANCE FOR PASSENGER SHIPS OPERATING IN AREAS REMOTE FROM SAR FACILITIES

1 In accordance with the relevant provisions of the SOLAS and SAR Conventions and the ISM Code, contingency plans for passenger ships should be prepared for operating in areas considered to be remote from SAR facilities. Factors which may make an area remote from SAR services may include:

- .1 the number of people potentially at risk as the result of an accident in the area;
- .2 the total recovery capacity of SAR facilities available to reach the scene of the accident and recover those at risk within survival times (including all additional SAR facilities likely to be available, as well as designated SAR units); and
- .3 whether there is any shortfall between the number to be recovered and the capacity of those SAR facilities available.

2 SAR co-operation planning arrangements should be enhanced for ships operating in areas remote from SAR facilities, as follows:

- .1 the Company should give reasonable notice of the arrival of its ship in the remote area to the relevant RCC;
- .2 if not already doing so, the Company should arrange direct exchange of the ship's SAR co-operation plan with the relevant SAR services;
- .3 the relevant SAR services may request a copy of the relevant part of the Company's emergency plan, in addition to the basic SAR co-operation plan, in order to assist their own contingency planning; and
- .4 the Company should keep the RCC informed as to the ship's position and intentions while the ship is operating in the remote area.

3 The risks of remote area operation should be assessed and planned for. The following enhancements should be among those considered:

- .1 voyage 'pairing'; i.e., mutual exchange of information that may be available to the SAR Authority or the vessel operator with reference to other passenger ships operating in the same area, so that, if two or more passenger ships are operating in the same general area at the same time, each can be used as a SAR facility in case of accident to another;
- .2 the carriage of enhanced lifesaving appliances;
- .3 the provision of additional lifesaving resources; and
- .4 other sources of assistance that may be available in the area.

APPENDIX

**CRITERIA FOR DETERMINING WHAT CONSTITUTES
AN AREA REMOTE FROM SAR FACILITIES**

1 The following criteria are considered relevant in determining what constitutes an area remote from SAR facilities:

- .1 the number of people at risk;
- .2 the nature of the risk and whether containment strategies can mitigate its effects – in particular, whether the effects of the incident can be so contained as to enable those at risk to remain on board until rescued, or for a period prior to eventual evacuation, thus extending the time to recover;
- .3 the availability of SAR facilities and other resources which may be deployed in order to contain the incident and keep those at risk on board until rescued, or for a period prior to eventual evacuation, thus extending the time to recover;
- .4 the total recovery capacity of SAR facilities available to reach the scene and recover those who have taken to survival craft within the five day “time to recover” parameter and/or within survival times;
- .5 any shortfall between the number to be recovered and the capacity of those SAR facilities available;
- .6 the distance (in time) between individual SAR facilities’ start points and the scene of the emergency;
- .7 the prevailing sea conditions, both on scene and encountered by SAR facilities proceeding;
- .8 the prevailing weather conditions, both on scene and encountered by SAR facilities proceeding;
- .9 any restrictions on SAR facility deployment which limit or remove their ability to respond even if theoretically within reach of the scene of the emergency;
- .10 the ability of those at risk to survive in the prevailing weather and sea conditions until they can be recovered (that is, for a maximum of five days according to the “time to recover” parameter);
- .11 the ability of available SAR facilities to recover those at risk in the prevailing weather and sea conditions;*

* The continuing work on developing functional requirements for SOLAS ships on systems used to recover persons from survival craft and from the water should be noted in this regard. It is intended that SOLAS ships will, in future, be better able to recover people in such circumstances.

- .12 any shortfall between the time taken to recover those at risk and the five day “time to recover” parameter and/or survival times in the prevailing conditions;
- .13 availability and quality of communications; and
- .14 effective co-ordination of search and rescue response.

ANNEX 25

DRAFT AMENDMENTS TO SOLAS CHAPTER III

PART B

Requirements for ships and life-saving appliances

SECTION I – PASSENGER SHIPS AND CARGO SHIPS

1 After regulation 17, the following new regulation 17-1 is added:

“Regulation 17-1*Recovery arrangements for rescuing persons*

1 All ships shall be equipped with a system to recover persons from the water and/or survival craft and rescue craft. Ships built before [date of implementation] shall install the system by the first intermediate or renewal survey after the implementation date.

2 The recovery system shall have a rate of recovery for persons in the water of at least 10 persons per hour in conditions of 3 m significant wave height* or in conditions equivalent to the significant wave height which may normally be expected in the area of the ship’s operation, whichever is greater, commencing at the time at which the persons in distress are in a position from which they may be recovered.**

3 The number of recovery systems to be fitted shall be determined by the Administration based on the guidelines developed by the Organization.**

4 The means of recovery shall be capable of recovering people who are incapacitated. This may include deploying a member of the recovering ship’s crew to assist. In this case the crew member shall be equipped with personal protective equipment including side impact helmet, lifejacket and, if necessary, immersion suit or anti-exposure suit and shall be secured to the means of recovery.

5 The recovery system shall be operable by the crew available and there shall be a sufficient number trained for this purpose.

6 Use, or continued use, of the means of recovery shall be at the discretion of the master of the recovering ship, in accordance with the provisions of regulation V/33.

7 The capability of the recovery system shall be type approved under the conditions in accordance with the minimum requirements set out in paragraphs 2, 3 and 4.”

* ‘Significant wave height’ is the mean height of the highest one third of wave heights.

** Refer to the standards to be developed by the Organization.

ANNEX 26

DRAFT MSC CIRCULAR

GUIDE TO COLD WATER SURVIVAL

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], with a view to providing enhanced guidance for passenger ships operating in cold water areas, approved the Guide to cold water survival prepared by the Sub-Committee on Radiocommunications and Search and Rescue at its tenth session (6 to 10 March 2006), 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.

ANNEX

GUIDE TO COLD WATER SURVIVAL

1 Introduction

1.1 The purpose of this guide is to examine the hazards of cold exposure that may endanger your life, and to provide you with advice on how to prevent or minimize those dangers. A thorough understanding of the information contained in this booklet may some day save your life.

1.2 The sinking of the Titanic in 1912 provided a dramatic example of the effects of cold water immersion. Partially due to a lack of preparedness with protective clothing, of adequate flotation equipment, and of knowledge of survival procedures, none of the 1,489 persons immersed in the 0°C water was obviously alive when rescue vessels arrived one hour and 50 minutes after the sinking.

1.3 Countless lives could have been saved had the survivors and the rescuers known more of how to cope with cold water: almost all of the people in the lifeboats were alive.

1.4 During the Second World War the Royal Navy of the United Kingdom alone lost about 45,000 men at sea, of whom it is estimated 30,000 died from drowning and hypothermia. Many of those who drowned did so because of incapacitation due to cold. Even today the pattern is similar.

1.5 It is important to realize that you are not helpless to effect your own survival in cold water. Body heat loss is a gradual process, and research shows that in calm water at 5°C a normally dressed person has a 50% chance of surviving three hours. Simple self-help techniques can extend this time, particularly if the person is wearing a lifejacket. You can make the difference; this pamphlet is intended to show you how.

2 Your body

2.1 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 in your struggle to stay alive in the event of cold water exposure.

2.2 Imagine your body to consist of an inner core and an outer layer. Your body produces a great deal of heat as a result of normal body functions, such as physical exercise and digesting your food.

2.3 Nature requires that your body core be kept to an ideal temperature of 37°C. A network of blood vessels running through the core and the outer layer of your body picks up the heat produced, and distributes it throughout the body. Nature also gives your body a very accurate system to regulate automatically the core temperature at 37°C. For example, if the temperature around you is high, as on a warm day or in a hot boiler room, the blood vessels near the skin of your body will enlarge, allowing more blood to flow to the outer layer and increase body heat loss. This will keep you comfortable and keep the core temperature from rising. If the surroundings are cool, your body will narrow the blood vessels in the outer layer and keep that valuable body heat from being lost too rapidly.

2.4 This regulatory system strives to keep the core temperature of the body constant despite variations in ambient temperature around you. The body can only do this within certain limits. There are levels of cold exposure when the body must have help in maintaining the core temperature at nature's choice of 37°C. You must give it that help by taking correct actions and wearing protective clothing.

3 Body heat loss and insulation

3.1 The body usually loses heat to the surroundings in the following ways:

- .1 Transfer of heat by direct contact with cold water or other materials. Heat passes from your body, which is at a relatively high temperature, to a substance which is lower in temperature. Certain substances are better conductors of heat than others. Water conducts heat more than twenty times faster than air.
- .2 Transfer of heat by air or water currents: moving air is far cooler to the body than still air. Cooling by wind is known as the 'wind-chill' effect. Similarly disturbed or moving water around your body is more chilling than still water at the same temperature.

3.2 In almost all parts of the world, man cannot survive without the aid of clothes. Clothes by themselves do not warm the body; the body is actually warmed by its own heat production. The body heat warms the layer of air trapped between the skin and clothing. It is this layer of air that provides insulation. If the layer of air is lost, then the insulation is diminished. This layer of trapped air between skin and clothing may be disturbed by movement or displaced by water. In either case, valuable warm air is displaced and skin temperature will fall. Heat from the body core will then be used in an endeavour to maintain skin temperature. If heat loss from the skin remains unchecked, the body core temperature will fall.

4 Hypothermia

4.1 The loss of body heat is one of the greatest hazards to the survival of a person at sea. The rate of body heat loss depends on the:

- .1 water and air temperature;
- .2 wind speed;
- .3 sea conditions;
- .4 length of time spent in the water;
- .5 protective clothing worn;
- .6 body type of the survivor;
- .7 mental and health status of the survivor;
- .8 level of alcohol and certain drugs in the survivor's body; and
- .9 manner in which the survivor conducts himself.

4.2 An abnormally low body core temperature can be recognized by a variety of symptoms. Very early during exposure, the body tries to combat the excessive heat loss both by narrowing its surface blood vessels (to reduce heat transfer by blood to surface) and by shivering (to produce more body heat). However, if the exposure is severe, the body is unable to conserve or produce enough heat. Body core temperature begins to fall. When the body core temperature is below 35°C, the person is suffering from ‘hypothermia’.

4.3 By then, discomfort, tiredness, poor coordination, numbness, impaired speech, disorientation, and mental confusion are well established. As the internal temperature falls further, unconsciousness may occur, shivering is replaced by muscle stiffness, and the pupils of the eyes may be enlarged. The heartbeat becomes irregular, slow and weak and the pulse is barely detectable. Although death may occur at any stage of hypothermia, when a person’s temperature is very low it is difficult to understand, if the person is alive or dead. Death by hypothermia is then defined as a failure to revive on rewarming.

5 Ship abandonment

5.1 Ships may sink in less than 15 minutes. This affords little time to formulate a plan of action, so careful planning is essential to be ready in an emergency. Here are some sound pointers for you to remember when abandoning a ship:

- .1 Put on as many layers of warm clothing as possible, including foot protection, making sure to cover head, face, neck, hands and feet. Fasten, close and/or button up clothing to prevent cold water flushing through the clothing.
- .2 If an immersion suit is available, put it on over the warm clothing.
- .3 If the immersion suit does not have inherent flotation, put on a lifejacket and be sure to secure it correctly before immersion. In cold water you will lose full use of your fingers immediately.
- .4 If time permits all persons should, before boarding the survival craft or in any case immediately after boarding, take some recommended anti-seasickness medicine. Seasickness will interfere with your survival chances as vomiting removes precious body fluid, and seasickness in general makes you more prone to hypothermia and impairs your will to survive.
- .5 Avoid entering the water if possible, e.g. board davit-launched survival craft on the embarkation deck or by the marine escape system. If davit-launched survival craft, a marine escape system or other means of dry-shod embarkation are not available, use over-side ladders or, if necessary, lower yourself by means of a rope or fire hose.
- .6 Stay out of the water as long as possible! Try to minimize the shock of sudden cold immersion. A sudden plunge into cold water can cause rapid death, or an uncontrollable rise in breathing rate may result in an intake of water into the lungs. 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. Avoid jumping onto the liferaft canopy or jumping into the water astern of a liferaft, in case the ship has some remaining headway.

- .7 Once in the water, whether accidentally or by ship abandonment, orient yourself and try to locate the ship, lifeboats, liferafts, 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 shivering and great pain. These are natural body reflexes that are not dangerous. You do, however, need to take action as quickly as possible before you lose full use of your hands: button up clothing, turn on signal lights, locate whistle, etc.
- .8 While afloat in the water, do not attempt to swim unless it is to reach a nearby craft, a fellow survivor, or a floating object on which you can lean or climb. Unnecessary swimming will 'pump' out any warm water between your body and the layers of clothing, thereby increasing the rate of body heat loss. In addition, unnecessary movements of your arms and legs send warm blood from the inner core to the extremities (arms and legs) and thus to the outer parts of the body. This can result in very rapid heat loss. Stay calm and take up a good position to prevent drowning.
- .9 The body position you assume in the water is also 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 the front of your lifejacket. This position minimizes the exposure of the body surface to the cold water. Try to keep your head and neck out of the water.
- .10 Try to board a lifeboat, raft, or other floating platform or object as soon as possible in order to shorten the immersion time. Remember: you lose body heat many times faster in water than in air. Since the effectiveness of your insulation has been seriously reduced by water soaking, you must now try to shield yourself from wind to avoid a wind-chill effect. If you manage to climb aboard a lifeboat, shielding can be accomplished with the aid of a canvas cover, a tarpaulin, or an unused garment. Huddling close to the other occupants of the lifeboat or raft will also conserve body heat.
- .11 Keep a positive attitude of mind about your survival and rescue. This will improve your chances of extending your survival time until rescue comes. Your will to live does make a difference!

6 Treatment of the immersion survivor

6.1 The treatment for hypothermia will of course depend on both the condition of the survivor and the facilities available. Generally speaking, survivors who are rational and capable of recounting their experiences, although shivering dramatically, merely require removal of all wet clothes and replacement with dry clothes or blankets. If possible, they should be taken from the water horizontally and carried this way, or else be returned to the horizontal (or, better still, to the unconscious position) as quickly as possible and kept this way. Hot sweet drinks should be given but only if the victim is fully conscious with gag and cough reflexes. Rest in a warm environment not exceeding 25°C (normal room temperature) is also recommended. Do not allow alcohol or smoking, or massaging or rubbing of the cold skin. However, always bear in mind that even conscious survivors can collapse and become unconscious shortly after rescue. They should therefore be kept resting horizontally, with their legs slightly elevated (the 'shock position'), and be watched until core rectal temperature has exceeded 35°C.

6.2 In more serious cases, where the survivor is not shivering and is semi-conscious, unconscious, or apparently dead, immediate first-aid measures will be necessary to preserve life while awaiting medical advice on more detailed management procedures. This advice should be sought as soon as possible and first-aid measures should not be delayed while advice is being sought. The recommended first-aid measures for such an immersion survivor are as follows:

- .1 On rescue, always check the survivor's breathing and carotid pulse for one minute each side of the neck.
- .2 If the survivor is not breathing, make sure the airway is clear (remove dentures, if any), tilt the head back, lift the chin and start artificial respiration immediately (mouth-to-mouth or mouth-to-nose). If the heart appears to have stopped beating then cardiac compressions may be applied. However, you should be certain that there is no pulse at all (remember that hypothermia slows and weakens the pulse greatly) and, once started, it must be continued properly until the patient is either fully rewarmed or delivered to a hospital.
- .3 If the survivor is breathing but unconscious, lay him in the unconscious position. This is necessary to ensure that the person's breathing is not obstructed by his tongue or by vomit.
- .4 Avoid all manhandling which is not necessary to determine whether there are any serious injuries; do not even remove wet clothes; do not massage.
- .5 Prevent further heat loss through evaporation and from exposure to the wind. Carefully wrap the patient in blankets and/or a casualty bag or large plastic bag and transfer immediately to a (wind-) sheltered area or below decks to a compartment at normal room temperature, keeping him horizontal, slightly head down.
- .6 Advice on rewarming and decisions regarding further treatment should normally be given only by a doctor. If no medical advice is immediately available, continue to apply the essential life-saving procedures given in paragraphs 1 to 5 above. In addition, even if the rescued person is cold and appears dead, or if he deteriorates and/or the pulse and breathing are lost, resuscitation attempts should not be ended before patient has been rewarmed. In a sheltered warm room the person's clothing can be cut and removed with a minimum of disturbance. Then wrap the person in blankets to reduce further heat loss. The best method of 'active' rewarming is the use of forced warm air (maximum 40°C), which has to be blown under the blankets covering the rescued person. Alternatively use heated blankets or sheets (about 40°C, but not hotter). Never use a hot bath or hot shower!
- .7 'Passive' methods of warming are not very effective. Do not attempt to warm the person by vigorous actions. Apply heating pads or hot water bottles under the blanket, to the person's head, neck, chest and groin – but never place these warm objects against the bare skin as cold skin is easily burned.

6.3 If above mentioned methods of warming are not available then apply body warmth by direct body-to-body contact with the rescued person. In addition wrap a blanket around both the rescued person and the person or persons supplying the warmth. In all cases try to monitor the pulse and breathing.

6.4 The above basic guidelines on first aid treatment for the unconscious person could be illustrated diagrammatically.

START

(Recover in a more or less horizontal position whenever possible)

IS PERSON BREATHING?

YES

1. Insulate to prevent further heat loss through evaporation and exposure to wind. Avoid unnecessary manhandling – leave wet clothes on and enclose in blankets and/or plastic bag. Move to sheltered location.
2. Lay down in the unconscious position whenever possible.
3. Oxygen should be given if available.
4. If water was inhaled, encourage deep breathing and coughing.
5. Request medical assistance.
6. Watch person closely until shivering starts. In the absence of medical advice rewarm the person by either the ‘active’ or ‘passive’ method described in paragraph 6.

No

1. Clear airway, check carotid pulse.
2. Start artificial respiration immediately (mouth-to-mouth, mouth-to-nose). If a pulse cannot be detected, commence cardiac resuscitation.
3. Insulate to prevent further heat loss through exposure to wind. Avoid unnecessary manhandling – leave wet clothes on and enclose in blankets and/or plastic bag. Monitor pulse, breathing and consciousness of victim and actively rewarm if the person appears dead or if the person’s condition deteriorates.
4. Seek medical advice. If medical advice is not available, continue resuscitation until the patient is either fully rewarmed* or delivered to a hospital.

* Note: In the context of hypothermia a person cannot be presumed dead until he is rewarmed and shows no bodily functions.

A person with cardiac arrest caused by severe hypothermia has a very good chance of surviving if artificial respiration and cardiac resuscitation is carried out until rewarming is finished. Mouth-to-mouth ventilation over a long period of time is very difficult and exhausting. Doing conventional cardiac resuscitation is a hard physical activity. As soon as possible use medical aids to make resuscitation more bearable for the helper and more effective for the brain and the heart of the rescued person, who is lacking oxygen: use a ventilation bag, Guedel-airway, oxygen-delivery device, Combitube-airway (which enables the helper to do rescue breathing directly into a pipe positioned in or at the entrance of the trachea), etc. The chest and the muscles of a hypothermic person are stiff. The pumping effect of chest compression can be improved by using a handheld medical device equipped with a suction cup to actively lift the anterior chest during decompression. Instruction in advance is necessary to use these mechanical devices more effectively in basic life support.

7 Summing up

7.1 We have briefly explained how your body responds to cold, what you can do to help ward off the harmful effects of cold and, finally, how to administer aid to an immersion survivor. We will now sum up the story with a number of important reminders. Follow them for your life may depend on them.

1. **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, lifeboat, or raft? How would you quickly get to your foul weather gear, insulated clothing, insulated gloves?
2. **Know how your survival equipment works.** The time of the emergency is not the time to learn.
3. Even in the tropics, before abandoning ship, **wear many layers of clothing** to offset the effects of cold. Wear an immersion suit if available.
4. **Put on a lifejacket** as soon as possible in an emergency situation.
5. When abandoning ship, **try to board the lifeboat or raft dry** without entering the water. Take anti-seasickness medicine as soon as possible.
6. If immersion in water is necessary, **try to enter the water gradually.**
7. Swimming increases body heat loss. **Swim only to a safe refuge nearby.**
8. To reduce your body heat loss, **try to float in the water with your legs together, elbows to your side, and arms across your chest.**
9. In a survival situation, you must **force yourself to have the will to survive.** This will make the difference between life and death.

7.2 In conclusion, advance planning, preparation and thought on your part can be the most significant factors in your struggle with cold water immersion and in your survival. Familiarize yourself with the contents of this booklet.*

* Reference information is available on online at www.sarrrah.de.

APPENDIX 1

CHECKLIST FOR COLD WATER SURVIVAL

WHAT CAN I DO FOR SURVIVING A LONGER STAY IN COLD WATER, EVEN FOR SEVERAL HOURS?

PREPARATION IN ADVANCE:

- Hardy to cold.
- Fitness.
- Emergency rescue training.
- Knowledge of cold water survival.
- Have a plan!

IN A DISTRESS ALERT SITUATION:

- Put on as many layers as possible, alternating thin/close-meshed and thick/wide-meshed! The outer layer should be as watertight as possible. Fasten, close and/or button-up clothing to prevent cold water flushing through the clothing.
- Cover head, neck and face.
- Wear robust, laced boots (better than Wellingtons)!
- Put an immersion suit over the warm clothing!
- Drink a lot (warm tea is best, no alcohol: that reduces chances of survival in cold water!)
- Take anti-seasickness tablets as soon as possible.
- Be sure that all your clothing, life jacket and lifebelt are secured correctly! In cold water you will lose full use of your fingers immediately. Check each other!

SHIP ABANDONMENT:

- Avoid entering the water for as long as possible!
- Automatic life vests should be manually activated before you enter the water and after you leave the interior of your ship.
- Enter the water as late as possible and as slowly (step by step) as possible to prevent cold shock!
- Do not jump into the water (danger of cold shock)!
- If falling into the water, keep your elbows to your sides and cover your nose and mouth with one hand, holding the wrist or elbow firmly with the other hand!
- Be prepared that the first contact with the cold water will stress your circulation, breathing and nervous system.
- Within a few minutes of minimum movement the “pain” of your skin will become more tolerable

IN THE WATER:

- Float on your back with a minimum of leg movement!
- Stay calm. Float as still as possible, legs together, elbows close to your side, and arms folded across the front of your lifejacket.
- Keep as much skin as possible out of the water!
- Huddling close to others will conserve body heat.

- Keep a positive attitude of mind. You will be the lucky one to be rescued! You can survive a long time in cold water, even in deep hypothermia, even when unconscious. Rescuers are searching for you! This positive attitude helps your body to keep its core temperature.
- Do not drink or inhale sea water!

APPENDIX 2

CHECKLIST FOR RESCUERS

FIRST AID AFTER COLD WATER IMMERSION:

- Do search long enough! Survival is possible, even after many hours in cold water. Ask MRCC for advice; whether to give up or not.
- Do not expect any kind of assistance from a person in need of rescue! A full and coordinated use of fingers and arms will be not possible. Lifting an arm for taking hold of a rope can induce the sinking and drowning of the victim.
- If circumstances allow, the rescued person should always be transferred in a horizontal body position including when being lifted from the water.
- A person with hypothermia should lie down and be kept still (immobile).
- Cover the person thoroughly with blankets or plastic sheets/bags against risk of further cooling down, including head, neck and as much face as possible!
- Remove wet clothing once the person is in a warm room (20-25C). Use scissors to ensure minimum movement of the body!
- Prevent the person from standing up, unless the rectal temperature is more than 36°C.
- Give warm sweet drinks – no alcohol – no caffeine.
- Keep continuous watch over the victim.
- Ask for telemedical consultation.
- Give oxygen, if available.

PERSON IS UNCONSCIOUS

- Put into the recovery position. Observe breathing and pulse!
- Observe for vomiting and be prepared to clear airway.
- Be prepared for a sudden cardiac and breathing arrest.
- Give CPR only if you do not feel any pulse or breathing for more than two minutes. Remember that in hypothermia blood pressure is very low. Pulse and breathing are very slow. Any mechanical irritation of the body in that stage can cause cardiac arrest.

PERSON IS NOT BREATHING AND HAS NO PULSE FOR MORE THAN TWO MINUTES:

- If you are not sure that the person has been in cardiac arrest for more than one hour and if there are no signs of irreversible death (injuries, decomposition), a successful resuscitation could be possible.
- Bring oxygen to the brain! Immediately start with rhythmic cardiac compression. If available use a chest suction device for more efficiency.
- Blow air into the lungs. Use an artificial airway device, if available (e.g. combitube), otherwise ventilation bag/mask or mouth-to-mouth.
- Follow the guidelines you have learned in your CPR training. Do not stop until you get medical advice to do so.

WHAT DO YOU NEED TO BE PREPARED:

- You attend training in the theory of hypothermia/drowning, First Aid and CPR and update this regularly to include the latest operation procedures!
- You know the procedures and the equipment on board for rescuing a person from the water!

ANNEX 27

DRAFT MSC CIRCULAR

**GUIDELINES ON THE TRAINING OF SAR SERVICE PERSONNEL
WORKING IN MAJOR INCIDENTS**

1 The Maritime Safety Committee, at its [eighty-first session (10 to 19 May 2006)], with a view to providing guidance on the training of search and rescue service personnel working in major incidents, approved the Guidelines on the training of SAR service personnel working in major incidents prepared by the Sub-Committee on Radiocommunications and Search and Rescue at its tenth session (6 to 10 March 2006), as set out in the annex.

2 Member Governments and international organizations in consultative status are invited to bring the annexed guidelines to the attention of all parties concerned.

ANNEX

GUIDELINES ON THE TRAINING OF SAR SERVICE PERSONNEL WORKING IN MAJOR INCIDENTS

1 INTRODUCTION

1.1 Successful interaction and mutual understanding between those who will have to work closely together during a major emergency are of fundamental importance to its being handled successfully. The human element and relevant training for all who may be involved are key factors in this context.

1.2 Major incidents are, fortunately, rare. However, they must be planned and prepared for, and this preparation includes an additional element of training. SAR service personnel are generally used to handling relatively small-scale incidents; but the rarity of major incidents means that they cannot gain the same levels of direct experience in dealing with emergencies on this scale. The need for specific training therefore increases commensurately.

1.3 It is the purpose of these guidelines to highlight some of the considerations that should be borne in mind by those planning and delivering major incident training for SAR personnel.

1.4 These guidelines should be read in conjunction with the guidance on mass rescue operations in the IAMSAR Manual, Volume I, Section 6.5, and especially Volume II, Section 6.15.*

2 DEFINITIONS

2.1 In these guidelines the term ‘major incident’ means an incident which requires special arrangements to be put in place in order to deal with it. That is, the incident is above and beyond what may be regarded as routine SAR work.

2.2 ‘SAR service personnel’ is taken here to include all those who provide, or may provide, a SAR service. This should be taken to include:

- .1 SAR Co-ordinators (as defined in the IAMSAR Manual, Volume I);
- .2 SAR Mission Co-ordinators;
- .3 On Scene Co-ordinators;
- .4 Aircraft Co-ordinators;
- .5 SAR unit commanders and their crews; and
- .6 ships’ masters and their crews – because they may be involved as additional SAR facilities, or as On Scene Co-ordinators when no more suitable unit is present.

* This guidance was added to the IAMSAR Manual by MSC/Circ.1173 and entered into force on 1 June 2006.

3 FUNDAMENTAL CONCERNS

Particular attention is drawn to the following aspects of major incident preparedness:

- .1 the structure and synergy of the wider SAR ‘team’ – which, in a major incident, will include members who are not used to working together as part of the ‘everyday’ response;
- .2 the crucial importance of effective communications at all levels;
- .3 the additional pressures placed on SAR service personnel during major incidents, and particularly in mass rescue operations;
- .4 the usefulness of major emergency exercises and simulations; and
- .5 the usefulness of familiarization visits and exchanges, and joint training initiatives.

4 TRAINING NEEDS

4.1 There are a number of training needs associated with the additional challenges of major incident response. It is necessary to develop SAR personnel’s knowledge of the special arrangements required to deal with the incident so that they will be implemented successfully. Training and exercise are vital to this development because very few SAR service personnel (even front-line SAR professionals) will accrue that knowledge by direct major incident experience.

4.2 The level of training required by different types of SAR service personnel will vary according to need. However, a measure of understanding of each of the items discussed below will be of use to all SAR personnel.

5 ASPECTS OF MAJOR INCIDENT TRAINING

5.1 A list of the aspects of emergency response which present additional challenges during major incidents is given below. The guidance on mass rescue operations in the IAMSAR Manual should also be referred to (see paragraph 1.4 above). Training in these aspects should be developed for SAR personnel according to individual need.

5.2 It should be noted that very few of the items listed are specific to major incident response. Most will occur in most SAR cases. While the response processes will remain broadly the same in major incidents, the difference is one of scale – and one of the most important concerns for training for SAR service personnel working in major incidents is that they should be enabled to respond effectively to the incident *despite* its scale.

5.3 The list of additional challenges in major incidents is provided below. Neither the list itself nor the outline notes against each item are exhaustive.

5.3.1 Recognizing that a major incident has, in fact, occurred

5.3.1.1 This is sometimes obvious (for example, when a known large passenger ship declares herself in distress and abandoning) but often is not. All SAR service personnel should be trained to recognize a major incident and know how to respond appropriately. There is evidence of cases in which the response was delayed because those involved failed to recognize, or simply could not believe, that this was 'the big one'.

5.3.1.2 This understandable failing has to be overcome by training. SAR personnel should be clear on the procedure for major incident declaration: who is empowered to make the declaration; how the decision is promulgated; and what individual responses are required in consequence.

5.3.2 Survival time

5.3.2.1 Casualties will have limited survival time (because of lack of, or limited, life-saving appliances, for example, or on-scene conditions – particularly the cold) so their rescue has to be arranged within that time. However, what may be possible in cases where small numbers of people are at risk will become a much greater challenge with large numbers of people, even if all other parameters are the same. One helicopter, say, may be able to recover five people from the water within their expected survival time; but it will not recover five hundred.

5.3.2.2 This problem is exacerbated in mass rescue operations – particularly in passenger ship incidents – by the fact that many of those requiring rescue will not be particularly fit to begin with, regardless of any injuries they may have suffered during the incident. They will not be professional seafarers. They may include a large proportion of the elderly, the very young, the disabled, the unwell and/or the generally unfit. Passengers in general will be subject to the additional stress of having only the most basic idea of what to do in an emergency. All of these factors will tend to reduce survival time.

5.3.3 SAR facility availability

5.3.3.1 By definition, no SAR service has sufficient dedicated SAR facilities to be able to deal with a major incident: all will require additional facilities to undertake the task. These facilities have to be found.

5.3.3.2 Professional SAR service personnel – in particular the State's SAR Co-ordinator and the SAR Mission Co-ordinator (SMC) at the time of the incident – have to be able to address this problem. The SAR Co-ordinator should include it at the strategic planning stage; the SMC has to be able to think beyond the parameters which are sufficient for his/her everyday co-ordination work – and has to be able to do this perhaps just once in his or her career.

5.3.4 Working with strangers

5.3.4.1 SAR service professionals in any particular area will be used to working together and will have built up, by training, exercise and incident experience, the necessary mutual awareness, knowledge and respect. Crucially, they will be able to communicate with each other efficiently.

5.3.4.2 But this will not be the whole picture when it comes to responding to a major incident. In addition to the usual team there will be SAR units responding from further a field and there will be additional facilities – ships, etc. – responding to the emergency because they happen to be in the area. Many of the SAR service personnel thrown together by the incident will thus be unfamiliar with each other; and they are likely to be even less familiar with the other agencies joining in as part of the response to the major incident ashore. This is unavoidable in practical terms – but suitable training will help to alleviate the problem.

5.3.5 **Mutual awareness**

5.3.5.1 As already noted, those SAR service personnel who work together on an everyday basis will already have the necessary awareness of each other's roles, responsibilities and capabilities – but the additional personnel joining in as part of the major incident response will not. This is particularly true of the masters and crews of ships and other additional facilities which just happen to be in the area at the time of the incident.

5.3.5.2 Again, practically, this is a problem which cannot be completely overcome – the SMC and each of the SAR facility commanders involved in a major incident cannot all know each other personally, despite the fact that this is so beneficial to effective communication – but it can be alleviated by training. Understanding the principles of SAR as set out in the IAMSAR Manual and participating together in SAR seminars and/or tabletop exercises are examples of improving mutual awareness.

5.3.6 **Co-ordination**

5.3.6.1 Co-ordinating the response, and being a part of a co-ordinated response, are, again, aspects of everyday SAR which are familiar to SAR professionals. But the challenge of efficient co-ordination of SAR efforts rises exponentially in a major incident, simply because there will be so much more to co-ordinate. Training to deal with this problem is essential. Expecting those involved to just 'move up a gear' when faced with a major incident is inadequate.

5.3.6.2 Training therefore begins with the SAR Co-ordinator, who needs to be able to assess major incident co-ordination requirements so as to ensure that the SMC has sufficient facilities available to enable him or her to carry out the task. The SMC too requires specific major incident training, especially as regards the much more complicated co-ordination task that he or she will be faced with.

5.3.7 **On scene co-ordination**

5.3.7.1 Similarly, although at a less extensive level than for the SMC, those who may have to take on the roles of On Scene Co-ordinator or Aircraft Co-ordinator in a major incident require training in preparation.

5.3.7.2 All those who may become involved, particularly as SAR facility commanders, require an understanding of the essential co-ordination structure so that they can more easily and efficiently take their place within it.

5.3.8 Information/lack of information

5.3.8.1 Information, especially in a major incident, is a two-edged sword. There will be a great deal of it to be sought, transmitted, received, assimilated, assessed and acted upon. The more complex the incident, the more the quantity and complexity of the information required. Those involved have to know what information they require (and what they don't) for their own particular part in the response; how to acquire it; how to prioritize and evaluate it; and what to do with it. 'Information overload' is a problem, and SAR service personnel should be trained in how to avoid it.

5.3.8.2 But the other edge of the sword is the *lack* of information. This problem is most obvious in the early stages of a major incident but is at least latent throughout. All responders will have information needs at the outset, and these needs will differ as the different responders' priorities differ. Provision of information (assuming that the information is available to be provided and is not fundamentally lacking because unobtainable) will itself have to be prioritized to avoid overloading individuals and communications facilities. Many are therefore likely to suffer an identifiable (and frustrating) lack of information as the response gets under way.

5.3.8.3 A more insidious risk as the incident develops is the lack of *updated* information. SAR facilities may be operating on old information which is no longer correct: they have, in effect, an unidentified lack of information. SAR personnel have to be trained to recognize these risks and in the procedures that will ease information flow.

5.3.9 Communications

5.3.9.1 Although 'buried' in this list, the task of ensuring efficient and effective communications is absolutely crucial to successful emergency response. The problem of inadequate communications in major incident response is widespread and well-recognized. What is less widespread is the training that will enable responders to overcome – or at least alleviate – the problem.

5.3.9.2 The problem is multifarious. There may be physical difficulties to overcome – the lack of communications systems, for example, leaving SAR facilities unable to communicate directly with each other. Even if such systems are available, there may be insufficient numbers of trained, experienced people to operate them: the most sophisticated communications equipment is only of any use if there is someone available who (a) knows how it works and (b) knows what to say while using it. If there are both sufficient systems and people available, there will still be the problems of mutual awareness and information delivery discussed above, unless these problems too have been addressed and training provided in how to overcome or alleviate them. Having a state-of-the-art communications system and a mass of relevant information to hand is of limited use if you do not know who needs that information because you do not understand others' roles in the response network, or you cannot prioritize information delivery.

5.3.9.3 A good, clear, positive and effective communications plan is needed, to ensure control and efficiency. Everybody does not need to talk to everybody. The plan needs to be quick to implement and easy for all to understand. It therefore must be simple. It should cover the co-ordination of communications between those on scene and the RCC, using intermediaries such as the On Scene Co-ordinator and Aircraft Co-ordinator. It should also cover communications with and between shoreside emergency responders, with the RCC as the focal point.

5.3.9.4 Major incident communications planning is firstly the responsibility of the SAR Co-ordinator. Establishment of the plan is the responsibility of the SMC. All SAR service personnel have to understand their place within it.

5.3.10 **Language difficulties**

5.3.10.1 This problem may be subdivided in two: a lack of (sufficient) mutual understanding of a common language; and a lack of mutual understanding of technical jargon. Both can destroy effective communication.

5.3.10.2 Two SAR responders who cannot speak each other's language, or enough of a common third language, simply cannot communicate non-visually (and only in a limited way even if face-to-face: sign language has its limitations). Less obviously, technical jargon can impede communication even between two people who share a language: understanding the basic words doesn't necessarily equate with understanding their meaning. The person using the jargon thinks he is being understood; the person listening may, in fact, 'understand' something quite different.

5.3.10.3 SAR personnel need to be trained to recognize these problems and in the ways of overcoming them, whether as regards setting up systems at the SAR Co-ordinator level (the provision of interpreting services, for example) or in using those systems at the responder level.

5.3.11 **Planning and plans**

5.3.11.1 SAR professionals have (or should have) major incident plans to refer to. Because of the 'add-on' nature of major incident response, and in keeping with the principles of integrated emergency response, the content of such plans should build on procedures already in place, and in everyday use, for 'normal' incidents. However, the plans themselves are specific to the major incident response.

5.3.11.2 There are three common dangers to be acknowledged and avoided. The first is not to plan at all, or not to plan adequately. The second is to 'over-plan', producing a plan so complicated that its use in practice is difficult – and therefore may not happen at all. The third is not to train in and exercise the plan sufficiently, with the result that the plan gathers dust on the shelf – remaining there even when the major incident occurs.

5.3.11.3 All SAR service personnel need appropriate training in this respect, whether in planning (usually at the SAR Co-ordinator level) or in implementing the plan as a leader (the SMC) or an operator (SAR facility commanders, for example).

5.3.12 **Prioritization**

5.3.12.1 We have already discussed prioritization of information flow – itself a skill requiring training – but there is also prioritization of action to consider: another skill to be developed. In a major incident particularly, there will be many responders with differing individual priorities – SAR, counter pollution, and salvage are obvious examples in the maritime context.

5.3.12.2 At a more detailed level, there will be other questions of priority. For example, as a SAR unit commander arriving at the scene, do you turn your attention immediately to recovering survivors in the liferafts you can see, or do you first search for people in the water who, currently, you can't? Do you recover the injured or disabled first, taking all the time that will involve, or the larger numbers of able-bodied? And so on. Decisions have to be made according to the circumstances on the day – but the essentials of the problem can be considered beforehand.

5.3.13 **Recovery**

5.3.13.1 The recovery of people from survival craft or from the water, or directly from the vessel in distress, can be a severe problem even with small numbers involved. The larger the number of those requiring recovery, the larger the problem. In a mass rescue operation, as discussed above, many of those requiring recovery may be less able to use recovery systems that require their active participation simply because of their general level of (un)fitness or their unfamiliarity with the systems provided. A non-seafarer may be theoretically capable of climbing a rope ladder, to take a simple example, in terms of the physical strength necessary to the task, but, through lack of experience, may yet be unable to do so in practice.

5.3.13.2 SAR service personnel need systems capable of overcoming such problems – and the training to enable them to use these systems.

5.3.14 **Counting**

5.3.14.1 It is a simple fact, observed from experience that counting those recovered is problematic (probably because it is not the rescuer's primary concern). Accounting for all involved in the incident therefore becomes the more difficult. In addition, those recovered are likely to be in many different places, and to be moved as the incident progresses.

5.3.14.2 Systems have to be developed to deal with these related problems and, again, SAR personnel have to know how to use such systems.

5.3.15 **Dealing with survivors**

Survivors brought aboard SAR facilities will have many needs which should, if possible, be attended to while en route to a place of safety. Such needs might include medical assessment and attention, shelter, warmth, clothing, food and drink, reassurance, etc. Survivors will have their own information needs (the whereabouts of other members of their party, for example, or what will happen to them next). They may also themselves hold information of use to the ongoing response operation. All of this requires careful handling (including prioritization of needs) which, in turn, requires training.

5.3.16 **Dealing with the injured**

Those injured during the emergency, together with those with pre-existing medical needs, form a special category of survivors whose needs must be carefully assessed and prioritized, using a simple triage process, for example, with further assistance being sought if necessary. Such assistance might take the form of airlifting priority cases from the surface unit which first recovered them, in order to expedite their arrival at suitable medical facilities; or, where possible, it might involve the transfer of medical teams to the recovering unit in order to assist the unit's crew. Triage is an additional skill, requiring training.

5.3.17 **Dealing with the dead**

5.3.17.1 If bodies are recovered, or people aboard SAR facilities die of their injuries, arrangements should be put in hand to ensure their appropriate handling – including consideration of the effects on survivors and others on board (possibly including relatives or friends of the deceased).

5.3.17.2 Information questions also arise. Even the dead may provide information of use to the response; and information about the dead will need to be relayed, as sensitively as possible.

5.3.18 **Places of safety**

5.3.18.1 Maritime SAR facilities, whether surface or air, will have to deliver those they have recovered – uninjured, injured and the dead – to a place of safety, usually ashore. Again this presents extra difficulties in a mass rescue operation. It is important to ensure that shoreside facilities are ready for them – reception centres for the uninjured, medical facilities for the injured, mortuary facilities for the dead – and that individual facilities are not overloaded.

5.3.18.2 The process of delivery to a place or places of safety must therefore be co-ordinated, both among the units bringing people to land, and with the shoreside authorities who will be taking over their care. As these authorities too are likely to be implementing major incident response plans, the SMC in particular must have a sound knowledge of communications procedures with them, and of any locally agreed arrangements (pre-planned landing sites, for example). Pre-planning is, of course, part of the SAR Co-ordinator's remit.

5.3.19 **News media interest**

5.3.19.1 Although the local news media are likely to be interested in any SAR 'story', news media interest will multiply exponentially in the event of a major incident – and a mass rescue operation in particular. The media's response will be rapid, intense and unremitting. It is likely to be international, and around the clock.

5.3.19.2 The SAR service response to this interest should be positive, and must be sufficient to avoid interference with the response to the incident itself. Response to the news media should be co-ordinated with that of other organizations involved. While this responsibility should be removed from personnel directly involved in the SAR response to be handled by specialists (press officers, etc.), SAR personnel at all levels may encounter the news media and must know how to deal with their enquiries – even if only how to pass them on to the specialists.

5.3.20 **Friends and families**

5.3.20.1 Relatives and friends of those involved in the incident as casualties (as well as people who only *think* their loved ones may be involved) will naturally be seeking information and the earliest opportunity to be reunited.

5.3.20.2 This difficult and sensitive work tends to fall to shoreside authorities as regards making arrangements for the collation and dissemination of casualty information and setting up reception centres, etc. for people travelling to coastal areas near the scene or to landing sites. Nevertheless, SAR service personnel may be approached directly, especially by those seeking information, and must know how to deal correctly with such requests.

5.3.21 **Logistics**

5.3.21.1 The support required by those responding to a major incident is complex. It will include additional trained staff, back-up SAR facilities and maritime assistance resources, land transport, welfare provision, reception and emergency accommodation facilities, additional medical facilities, etc. The logistical task will also involve individuals and organizations planning and working together who do not normally do so in everyday incidents.

5.3.21.2 While only a part of this process relates to the SAR service, SAR personnel have to know their part and how it relates to the whole. The SAR Co-ordinator has to plan with equivalent authorities in the shoreside services. SAR commanders at the strategic level have to have a clear understanding of resource availability and deployment, and how to co-ordinate this activity. Other SAR service personnel have to know how logistical support can be arranged. All these are training issues.

5.3.22 **Politics: who's in charge?**

5.3.22.1 This is a problem which tends to be specific to major incidents and is generated by the higher profile of such incidents as compared to everyday SAR work. Everyday SAR arrangements may be clear, but the high profile incident attracts the attention of senior people who are not normally involved.

5.3.22.2 The problem can take two broad forms: the actual engagement of political leaders who feel that they will be held responsible for the success or failure of the response operation; and/or inter-agency disagreement on co-ordination and, crucially, which organization should lead the response. The latter problem is exacerbated if, in fact, the incident is multi-faceted – if, for example, it involves security and/or pollution responses as well as SAR.

5.3.22.3 Solutions to this particular problem should be found at the planning stage: at the time of the incident will be too late. The SAR Co-ordinator should be able to recognize the potential problems, and to plan with others to avoid them by ensuring that the response is undertaken only by those fully competent to do so, and that priorities are agreed across the board. The training of other SAR service personnel should include an understanding of these plans.

5.3.23 **Fatigue**

5.3.23.1 Major incidents are very likely to have a longer duration than the everyday SAR incident, and SAR personnel are likely to become fatigued in consequence. This problem is exacerbated by the extra stress generated by the scale of the incident, and the natural desire to continue to assist – especially if relief personnel are not clearly available. The problem extends from those on the front line of the SAR effort – SAR unit crews, the crews of assisting ships, etc. – to the SMC and his/her team and strategic support personnel. It is particularly prevalent in commanders: junior staff can be ordered to rest, but the ship's captain, the On Scene Co-ordinator, the SMC and strategic commanders may come to see themselves as irreplaceable, and will consequently work beyond efficient limits.

5.3.23.2 These risks have to be recognized, both at the planning and the action stages, organizationally and individually, and measures to counteract them built in and applied.

5.3.24 **Stress**

5.3.24.1 Related to, but different from, the question of fatigue is the problem of stress – or more particularly, the problem of individuals becoming over-stressed during the course of an incident, possibly because of emotional involvement or because they are otherwise unprepared to deal with the complexities of the case and the many competing priorities and demands made upon them.

5.3.24.1 The tendency to make mistakes under pressure must be recognized and managed. The signs of individuals becoming over-stressed must also be known and guarded against. The need for post-incident support for all those involved must also be recognized and provided for.

5.3.25 **Training and exercises**

5.3.25.1 Training in all the *additional* aspects of major incident response outlined above should be planned for and provided as appropriate for all SAR service personnel. While this may seem an onerous undertaking at first glance, it should be borne in mind that, for all concerned, major incident training is an extension of their basic training for the ‘everyday’ eventuality. This applies to ships’ masters and their crews, whose training for on-board emergencies will underpin the additional training for their part in major incident response, as it does to SAR professionals at all levels.

5.3.25.2 Training methods of all types may be used to prepare for major incident response. This includes formal courses, seminars and workshops, published guidance and simulations. This training, as well as emergency plans and procedures, should be tested in exercises – and exercises too can be of all types, depending on their aims and objectives. Full-scale live major incident exercises are complicated and costly to arrange, but provide the best overall tests of the system. Smaller-scale live exercises may be used to test specific segments of the response. ‘Command post’ or ‘co-ordination’ exercises test inter-communication and awareness without the added difficulties of resource deployment. ‘Tabletop’ exercises, whether discursive or using simulations, are similarly valuable.

5.3.26 **Lessons learned**

Major incidents are, fortunately, very rare. This has implications for the training necessary to prepare for them, as discussed. That training (not to mention emergency planning) will be improved by the collation and wide dissemination of lessons learned from major incident and major incident exercise experience. So this is the final training aspect in this outline list – the identification of lessons that can be learned, and of those to whom they will be of interest, is a skill in itself; and a process of disseminating the lessons learned effectively – within one’s own organization and to partner organizations locally, regionally, nationally and internationally – should be established by managers and by the SAR Co-ordinator.

ANNEX 28

CRITERIA FOR “TIME TO RESCUE”

1 The criteria listed below are considered to be necessary to the validation of the time to rescue. They are neutral with regard to whether they have a favourable or adverse effect.

2 As explained by MSC 79 and amended by the correspondence group:

- .1 *Time to recover* is the length of time beginning with the completion of the ship abandonment and ending when all persons have been recovered from survival craft into a ‘place of safety’ or a ‘temporary place of safety’, where:
- .2 *Place of safety* is a location where rescue operations are considered to terminate; where survivors’ safety of life is no longer threatened; where their basic human needs (such as food, clothing, accommodation, and communications and medical needs) can be met; and from where transportation arrangements can be made for their next or final destination; and
- .3 *Temporary place of safety* is a location where persons are protected from hazards to life and health and provided with basic humanitarian services such as shelter from the elements, warmth, first aid medical treatment, food, water and sanitation; where communications with the RCC and a means of accounting for and identifying surviving persons are provided; and from which the survivors may be safely transferred to a place of safety as described above. All of these conditions shall be maintained until such transfer takes place, if necessary by the provision of external support.

3 The validation criteria are grouped under five headings, but are not listed in any particular order of importance. Any of them may have a significant effect on the actual “time to recover” achieved.

4 SAR service capability should be such as to allow for a reduction in the “time to recover” due to adverse circumstances pertaining at the time of the incident. It should not be based on an assumption that the full period will always be available.

5 The validation criteria are as follows:

5.1 **Geographical factors**

- .1 Location of incident.
- .2 Accuracy of position.
- .3 Accessibility of location by available SAR facilities.
- .4 Proximity of designated SAR units to the scene of the incident.

- .5 Proximity of shipping lanes, fishing grounds, offshore oil and gas operations, and/or other areas of maritime activity, and hence the proximity of additional SAR facilities to the scene of the incident.
- .6 Proximity of additional support for SAR facilities (for example, medical and/or welfare support) which may enable such facilities to become at least temporary places of safety.
- .7 Proximity of navigational hazards (presenting hazards to drifting casualties and/or SAR facilities).
- .8 Proximity of landing sites.
- .9 Proximity of shoreside support facilities constituting places of safety as described in paragraph 2 above.
- .10 Proximity of temporary places of safety as described in paragraph 2 above.

5.2 Environmental factors

- .1 Visibility conditions at the scene of the incident (day/night/twilight; horizontal visual/radar visibility; cloud bases).
- .2 Weather conditions at the scene of the incident (wind force and direction; air temperature and wind chill/effects of sunlight and heat)*.
- .3 Sea conditions at the scene of the incident (sea temperature; sea and swell wave height and period; confused seas; effects of breakers; tidal and/or sea current effects)*.
- .4 Forecast weather conditions at the scene of the incident, including visibility and sea state.
- .5 Weather conditions encountered by SAR facilities en route to the scene and/or to places of safety, actual and forecast.

* As sea state and ambient temperature (particularly air temperature for those aboard survival craft) are considered to be key factors affecting recovery, the following simple categorization is proposed as an aid to determining its effect:

Category 1: benign – sea state and/or temperature are such that they do not adversely affect persons while aboard survival craft nor their transfer into recovering units.

Category 2: difficult – sea state and/or temperature are such that, without threatening life, they cause discomfort to persons while aboard survival craft and, over time, may degrade their ability to care for themselves or others; and/or such as to render their transfer into recovering units difficult.

Category 3: dangerous – sea state and/or temperature are such that the ability of persons aboard survival craft to care for themselves or others will be quickly degraded and they may suffer injury or death; and/or such as to render their transfer into recovering units dangerous.

- .6 Sea conditions encountered by SAR facilities en route to the scene and/or to places of safety.
- .7 Presence of hazardous marine life.

5.3 **Communications and co-ordination factors**

- .1 Time taken to alert the SAR authorities.
- .2 Time taken to despatch SAR facilities.
- .3 Time taken to despatch or divert any additional support to SAR facilities.
- .4 SAR co-ordination effectiveness.
- .5 Effectiveness of communications systems and procedures.
- .6 Adequacy of plans and preparedness to implement them fully.

5.4 **Capability of SAR facilities and support to SAR facilities**

- .1 Number of people to be recovered.
- .2 Condition of people to be recovered (see below).
- .3 SAR facility availability in the prevailing conditions: availability will be affected by weather and navigational factors, particularly proximity of navigational hazards, sea state, and (for surface units) depth of water on scene.
- .4 Any restrictions on SAR facility deployment limiting or removing their ability to respond even if theoretically within reach of the scene; for example non-operational status or need to respond to other emergencies.
- .5 Total SAR facility survivor capacity (uninjured, 'walking wounded', stretcher cases: this is a matter of both space aboard and SAR facility crew numbers available to tend to the injured).
- .6 Total SAR facility capability to recover persons in the prevailing conditions: sea state, proximity of navigational hazards, and condition of persons to be recovered may all significantly alter individual SAR facilities' recovery capabilities.
- .7 Training and experience of SAR facility crews.
- .8 Rate of recovery achievable in the prevailing conditions by individual SAR facilities.
- .9 Number of SAR facilities which can conduct recovery operations simultaneously: this will be affected by proximity of navigational hazards, proximity and manoeuvrability of other SAR facilities, and the effects of SAR facilities on each other and on target survival craft, etc. – for example, the effects of helicopter downdraft.

- .10 Effects of fatigue and critical incident stress on SAR facility crews.
- .11 Ability of SAR facility crews to sustain the rate of recovery.
- .12 Ability of SAR facility crews to attend to the needs of those recovered, and to sustain that attention.
- .13 Availability in the prevailing conditions of additional external support to SAR facilities (for example, medical and/or welfare support which may enable such facilities to become at least temporary places of safety), and any restrictions on their deployment.
- .14 Capability of external support teams; including training, experience, effects of fatigue and stress, and availability of resources necessary to their undertaking their work.
- .15 Ability of SMC, OSC and ACO to co-ordinate SAR facilities and any support teams and resources efficiently.
- .16 Availability of necessary tactical and strategic support to the SMC and hence the operation as a whole.
- .17 Co-ordination with shoreside emergency responders and other authorities at landing sites to enable recovery units to return to the scene for further loads.
- .18 Rate at which persons recovered can be transferred to places of safety or temporary places of safety to enable recovery units to return to the scene for further loads.
- .19 SAR facility refuelling opportunities.
- .20 SAR facility crew relief opportunities.

5.5 Casualty vessel and condition of persons requiring recovery

- .1 Type of vessel in distress.
- .2 Type, number and condition of survival craft.
- .3 Quality of the casualty vessel's contingency plan, especially as regards evacuation.
- .4 Quality of the actual evacuation (controlled or uncontrolled – partly a function of the casualty vessel's ability to remain afloat and upright during evacuation, partly of the crew's ability to retain control and of the passengers to follow instructions).
- .5 Whether dry-shod evacuation is achieved and, if not, whether people are in the water or have entered survival craft from the water.

- .6 Whether people are being recovered:
 - .1 directly from the casualty vessel;
 - .2 from the water;
 - .3 from survival craft with ready access;
 - .4 from survival craft with restricted access; and
 - .5 a mixture of two or more of these.
- .7 Condition of survivors:
 - .1 general physical fitness, including ability to assist with their own recovery;
 - .2 fatigue, seasickness, effects of cold/heat, etc., including ability to assist with their own recovery;
 - .3 injury, including ability to assist with their own recovery;
 - .4 psychological attitude: 'will to survive', whether calm and competent, able/willing to follow instructions;
 - .5 personal survival equipment (lifejacket, exposure suit);
 - .6 suitable clothing;
 - .7 detection equipment, whether personal or aboard survival craft (radios, emergency beacons, transponders, lights, flares, whistles, etc.) and whether this is correctly used;
 - .8 availability of supplies aboard survival craft or individually (water, food, first aid kits, seasickness tablets, blankets, etc.).

ANNEX 29

**PRELIMINARY DRAFT PERFORMANCE STANDARDS FOR
SURVIVAL CRAFT AIS SEARCH AND RESCUE TRANSMITTER (AIS-SART)**

1 INTRODUCTION

The ~~9 GHz SAR transponder (SART)~~ AIS Search and Rescue Transmitter (AIS-SART), in addition to meeting the requirements of the relevant ITU-R Recommendation and the general requirements set out in resolution A.694(17)*, should comply with the following performance standards.

2 GENERAL

The AIS- SART should be capable of indicating the location of a unit in distress on the assisting units ~~radars~~ AIS by means of a ~~series of equally spaced dots (see resolution A.530(13))~~. visual indication on the Minimum Keyboard and Display (MKD) or other navigational equipment capable of processing and displaying AIS information such as ECDIS, radar or an integrated navigation system available on board the ship.

2.1 The AIS- SART should:

- .1 be capable of being easily activated by unskilled personnel;
- .2 be fitted with means to prevent inadvertent activation;
- .3 be equipped with a means which is either visual or audible, or both visual and audible, to indicate correct operation ~~and to alert survivors to the fact that a radar has triggered the SART;~~
- .4 be capable of manual activation and deactivation; provision for automatic activation may be included;*
- .5 ~~be provided with an indication of the stand-by condition;~~ be capable of withstanding without damage drops from a height of 20 m into water;
- .6 ~~be capable of withstanding without damage drops from a height of 20 m into water;~~ be watertight at a depth of 10 m for at least 5 min;
- .7 ~~be watertight at a depth of 10 m for at least 5 min;~~ maintain water tightness when subjected to a thermal shock of 45°C under specified conditions of immersion;
- .8 ~~maintain watertightness when subjected to a thermal shock of 45°C under specified conditions of immersion;~~ be capable of floating if it is not an integral part of the survival craft;

* IEC 60945

* If an on board test is performed using a shipborne 9 GHz radar, activation of the SART should be limited to a few seconds to avoid harmful interference with other shipborne radars and excessive consumption of battery energy.

- .9 ~~be capable of floating if it is not an integral part of the survival craft; be equipped with buoyant lanyard, suitable for use as a tether, if it is capable of floating;~~
- .10 ~~be equipped with buoyant lanyard, suitable for use as a tether, if it is capable of floating; not be unduly affected by seawater or oil;~~
- .11 ~~not be unduly affected by seawater or oil; be resistant to deterioration in prolonged exposure to sunlight;~~
- .12 ~~be resistant to deterioration in prolonged exposure to sunlight; be of a highly visible yellow/orange colour on all surfaces where this will assist detection;~~
- .13 ~~be of a highly visible yellow/orange colour on all surfaces where this will assist detection; have a smooth external construction to avoid damaging the survival craft; and~~
- .14 ~~a smooth external construction to avoid damaging the survival craft; and be provided with an arrangement compatible with the antenna pocket in a survival craft in order to bring the AIS-SART and its antenna to a level of at least 1 metre above sea level, together with illustrated instructions.~~
- .15 ~~be provided with a pole or other arrangement compatible with the antenna pocket in a survival craft in order to comply with 2.4, together with illustrated instructions; be capable of transmitting with an repetition rate of 1 minute;~~
- .16 ~~be capable of updating its position with an update rate of maximum 5 minutes.~~
- .17 ~~be capable of being tested for all functionalities by means of a test button.~~

2.2 The AIS-SART should have sufficient battery capacity to operate ~~in the stand-by condition for 96 h and, in addition, following the stand-by period, to provide transponder transmissions for 8 h when being continuously interrogated with a pulse repetition frequency of 1 kHz.~~ within a temperature range of -20°C to +55°C, and to provide for testing of the functions on the equipment.

2.3 The AIS-SART should be so designed as to be able to operate under ambient temperatures of -20°C to +55°C. It should not be damaged in stowage throughout the temperature range of -30°C to ~~+65°C~~ +70°C.

2.4 The height of the installed AIS-SART antenna should be at least 1 m above sea-level.

2.5 ~~The vertical polar diagram of the antenna and hydrodynamic characteristics of the device should permit the SART to respond to search radars under heavy swell conditions. The polar diagram of the antenna should be substantially omnidirectional in the horizontal plane. Horizontal polarization should be used for transmission and reception. The AIS-SARTs should be detectable at a distance of at least 5 nautical miles by an AIS complying with resolution MSC.74(69), with an antenna height of 15 meters. AIS-SARTs should also be detectable by airborne AIS at a distance of up to 50 nautical miles, at a height of 3,000 ft.~~

~~2.6 The SART should operate correctly when interrogated at a distance of up to at least 5 nautical miles by a navigational radar complying with resolutions A.477(XII) and A.222(VII), with an antenna height of 15 m. It should also operate correctly when interrogated at a distance of up to 30 nautical miles by an airborne radar with at least 10 kW peak output power at a height of 3,000 ft. If an on-board test is performed using shipborne AIS, the test should be limited to a minimum number of sequences.~~

~~2.7 The AIS-SART should continue transmission even if the position and time synchronization from the positioning system is lost or fails.~~

3 TECHNICAL CHARACTERISTICS

Technical characteristics of the AIS-SART should be in accordance with ~~Recommendation ITU-R M.628-2,~~ relevant ITU recommendations.

4 LABELLING

In addition to the items specified in resolution A.694(17) on general requirements, the following should be clearly indicated on the exterior of the equipment:

- .1 brief operating instructions; and
- .2 expiry date for the primary battery used.

ANNEX 30

**DRAFT AMENDMENTS TO RESOLUTION A.802(19) ON PERFORMANCE
STANDARDS FOR SURVIVAL CRAFT RADAR TRANSPONDERS
FOR USE IN SEARCH AND RESCUE OPERATIONS**

Amend section 2, paragraph 2.5 as follows:

“2.5 Horizontal polarization or circular polarization* should be used for transmission and reception.”

* New text.

ANNEX 31

LIAISON STATEMENT TO ITU-R WP.8B

AIS SEARCH AND RESCUE TRANSMITTER (AIS-SART)

The IMO Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), whilst considering the use of AIS technology for locating survival and SAR craft, developed preliminary draft performance standards for AIS-SART, which are attached.

The COMSAR Sub-Committee kindly requests WP.8B to provide comments on the matter with a view to start developing technical specifications in accordance with the functional requirements as described in the preliminary draft performance standards, which should be adopted in October 2007.

ANNEX 32

LIAISON STATEMENT TO IALA

AIS SEARCH AND RESCUE TRANSMITTER (AIS-SART)

The IMO Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), at its tenth session (6 to 10 March 2006), whilst considering the use of AIS technology for locating of survival and SAR craft, developed preliminary draft performance standards for AIS-SART, which are attached.

The COMSAR Sub-Committee wishes to bring this matter to the attention of IALA for appropriate comments and proposals and would appreciate if such comments could be submitted to IMO in time for proper consideration at COMSAR 11 scheduled to take place in February 2007.

ANNEX 33

**DRAFT PROPOSED AMENDMENTS TO SOLAS CHAPTER III – LIFE-SAVING
APPLIANCES AND ARRANGEMENTS AND SOLAS
CHAPTER IV – RADIOCOMMUNICATIONS**

CHAPTER III**Regulation 6***Communications*

Amend paragraph 2.2 as follows:

“2.2 ~~Radar transponders~~ **Search and rescue locating devices**

At least one ~~radar transponder~~ **search and rescue locating device** shall be carried on each side of every passenger ship and of every cargo ship of 500 gross tonnage and upwards. At least one ~~radar transponder~~ **search and rescue locating device** shall be carried on every cargo ship of 300 gross tonnage and upwards but less than 500 gross tonnage. Such ~~radar transponders~~ **search and rescue locating devices** shall conform to performance standards not inferior to those adopted by the Organization.* The ~~radar transponders~~ **search and rescue locating devices**** shall be stowed in such location that they can be rapidly placed in any survival craft other than the liferaft or liferafts required by regulation 31.1.4. Alternatively one ~~radar transponder~~ **search and rescue locating device** shall be stowed in each survival craft other than those required by regulation 31.1.4. On ships carrying at least two ~~radar transponders~~ **search and rescue locating devices** and equipped with free-fall lifeboats one of the ~~radar transponders~~ **search and rescue locating devices** shall be stowed in a free-fall lifeboat and the other located in the immediate vicinity of the navigation bridge so that it can be utilized on board and ready for transfer to any of the other survival craft.”

CHAPTER IV**Regulation 7***Radio equipment: General*

Amend subparagraph 1.3 as follows:

“3 a ~~radar transponder~~ **search and rescue locating device** capable of operating either in the 9 GHz band **or on frequencies dedicated for AIS**, which:”

* Refer to the Performance standards for survival craft radar transponders for use in search and rescue operations adopted by the Organization by resolution A.802(19), **as amended by the Performance standards for survival craft AIS transmitter.**

** One of these search and rescue locating devices ~~radar transponders~~ may be the ~~radar transponder~~ search and rescue locating device required by regulation IV/7.1.3.

ANNEX 34**TERMS OF REFERENCE OF THE SUB-COMMITTEE
AS APPROVED BY THE COMMITTEES**

1 Under the direct instructions of the Maritime Safety Committee and as may be requested by the Marine Environment Protection Committee, the Sub-Committee on Radiocommunications and Search and Rescue (COMSAR), in order to improve life saving and ensure effective maritime search and rescue, including maritime distress and safety mobile radiocommunications and procedures, will consider matters related to the following subjects, including the development of any necessary amendments to relevant conventions and other mandatory and non-mandatory instruments, as well as the preparation of new mandatory and non-mandatory instruments, guidelines and recommendations, taking into account the role of such measures in the protection of the marine environment, for consideration by the Committees, as appropriate:

- .1 any technical and operational measures and recommendations on the worldwide implementation of, and amendments to, as appropriate:
 - .1 the International Convention on Maritime Search and Rescue, 1979, as amended;
 - .2 development and maintenance of the Global SAR Plan;
 - .3 the Global Maritime Distress and Safety System (GMDSS), in particular, matters relating to the GMDSS Master Plan;
 - .4 the provisions of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual in co-operation with the International Civil Aeronautical Organization; and
 - .5 operational communications related to maritime security;
- .2 proposed measures related to chapters III, IV and V of the 1974 SOLAS Convention, as appropriate, in particular:
 - .1 operational safety measures related to maritime mobile radiocommunications and security;
 - .2 revision or development of relevant radiocommunication equipment performance standards, maintenance requirements and relevant procedures;
 - .3 revision of relevant search and rescue equipment performance standards, maintenance requirements and relevant procedures; and
 - .4 any technical measures with respect to the implementation of SOLAS chapters III, IV and V, as amended;

- .3 ITU maritime mobile radiocommunication matters and liaison with ITU technical bodies on the issues;
- .4 revision or development of relevant operational guidelines relating to maritime mobile radiocommunications, search and rescue, maritime security and associated matters; and
- .5 any other relevant issues referred to it by the Maritime Safety Committee or other technical bodies of the Organization.

ANNEX 35

**PROPOSED REVISED WORK PROGRAMME OF THE SUB-COMMITTEE
AND PROVISIONAL AGENDA FOR COMSAR 11**

		Target completion date/number of sessions needed for completion	Reference
1	Global Maritime Distress and Safety System (GMDSS)		COMSAR 9/19, section 3 COMSAR 10/16, section 3
	.1 matters relating to the GMDSS Master Plan	Continuous	COMSAR 9/19, paragraphs 3.1 to 3.3 COMSAR 10/16, paragraphs 3.1 to 3.4
	.2 exemptions from radio requirements	Continuous	COMSAR 4/14, paragraphs 3.38 to 3.41
2	Promulgation of maritime safety information (MSI) (in co-operation with ITU, IHO, WMO and IMSO)		
	.1 operational and technical co-ordination provisions of maritime safety information (MSI) services, including review of the related documents	Continuous	COMSAR 9/19, paragraphs 3.4 and 3.5 COMSAR 10/16, paragraphs 3.5 to 3.29
3	ITU World Radiocommunication Conference matters	Continuous	COMSAR 9/19, paragraphs 4.5, 4.6 and 4.12 to 4.16 COMSAR 10/16, paragraphs 4.3 to 4.6 and 4.13 to 4.20
4	Radiocommunication ITU-R Study Group 8 matters	Continuous	COMSAR 9/19, paragraphs 4.1 to 4.4 and 4.8 to 4.11 COMSAR 10/16, paragraphs 4.1, 4.2 and 4.9 to 4.12

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- Notes:**
- 1 "H" means a high priority item and "L" means a low priority item. However, within the high and low priority groups, items have not been listed in any order of priority.
 - 2 The struck-out text indicates proposed deletions and the shaded text shows proposed additions or changes.
 - 3 Items printed in bold letters have been selected for the provisional agenda for COMSAR 11 shown in annex 2.

		Target completion date/number of sessions needed for completion	Reference
5	Satellite services (Inmarsat and COSPAS-SARSAT)	Continuous	COMSAR 9/19, section 5 COMSAR 10/16, section 5
6	Matters concerning search and rescue, including those related to the 1979 SAR Conference and the implementation of the GMDSS		
.1	harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters	2006 2007	COMSAR 9/19, paragraphs 7.1 to 7.5 and 7.8 to 7.13 COMSAR 10/16, paragraphs 6.1 to 6.16
.2	plan for the provision of maritime SAR services, including procedures for routing distress information in the GMDSS	Continuous	COMSAR 9/19, paragraphs 7.14 to 7.20 COMSAR 10/16, paragraphs 6.27 to 6.41
.3	revision of the IAMSAR Manual	Continuous	MSC 71/23, paragraph 20.2; COMSAR 9/19, section 9 COMSAR 10/16, section 8
.4	medical assistance in SAR services	2006 2007	MSC 75/24, paragraph 22.29; COMSAR 9/19, paragraphs 7.23 to 7.27 COMSAR 10/16, paragraphs 6.42 to 6.49
7	Casualty analysis (co-ordinated by FSI)	Continuous	MSC 70/23, paragraphs 9.17 and 20.4; MSC 78/26, paragraph 24.8
H.1	Amendments to SOLAS chapter IV pursuant to the criteria set out in resolution A.888(21)	3 sessions	MSC 72/23, paragraph 21.33.1.2
H.2	Developments in maritime radiocommunication systems and technology	2006 2007	MSC 74/24, paragraph 21.25.1; COMSAR 9/19, section 8 COMSAR 10/16, section 7

		Target completion date/number of sessions needed for completion	Reference
H.3	Measures to enhance maritime security	2006	MSC 75/24, paragraph 22.9; COMSAR 9/19, section 12
H.4	Review of the SPS Code (co-ordinated by DE)	2007	MSC 78/26, paragraph 24.9
H.5 H.3	Revision of the performance standards for SART	2007	MSC 78/26, paragraph 24.26 COMSAR 10/16, section 12
H.6	Passenger ship safety	2006	MSC 78/26, paragraph 4.45; MSC 79/23, paragraph 4.12; COMSAR 9/19, section 13

PROPOSED PROVISIONAL AGENDA FOR COMSAR 11*

- Opening of the session
- 1 Adoption of the agenda
 - 2 Decisions of other IMO bodies
 - 3 Global Maritime Distress and Safety System (GMDSS)
 - .1 matters relating to the GMDSS Master Plan
 - .2 operational and technical co-ordination provisions of maritime safety information (MSI) services, including review of the related documents
 - 4 ITU maritime radiocommunication matters
 - .1 Radiocommunication ITU-R Study Group 8 matters
 - .2 ITU World Radiocommunication Conference matters
 - 5 Satellite services (Inmarsat and COSPAS-SARSAT)
 - 6 Matters concerning search and rescue, including those related to the 1979 SAR Conference and the implementation of the GMDSS
 - .1 harmonization of aeronautical and maritime search and rescue procedures, including SAR training matters
 - .2 plan for the provision of maritime SAR services, including procedures for routing distress information in the GMDSS
 - .3 medical assistance in SAR services
 - 7 Developments in maritime radiocommunication systems and technology
 - 8 Revision of the IAMSAR Manual
 - 9 Revision of the performance standards for SART
 - 10 Work programme and agenda for COMSAR 12
 - 11 Election of Chairman and Vice-Chairman for 2008
 - 12 Any other business
 - 13 Report to the Maritime Safety Committee

* Agenda item numbers do not necessarily indicate priority.

ANNEX 36**STATEMENT BY THE DELEGATION OF PANAMA**

Chairman,

My country and its maritime administration are dismayed at the magnitude of this disaster and its impact on the lives of so many families. Vice-president Arosemena was in Egypt last week presenting our condolences in person to the Egyptian authorities at the highest level.

Since the accident, we have been collaborating with the Egyptian authorities on the investigation, under the rules approved by this international organization.

As we have stated to the IMO Secretary-General, it is our hope that the investigation will be effective, impartial and transparent, and of the shortest possible duration, enabling the Governments involved to submit for IMO's consideration conclusions and recommendations that will prevent a reoccurrence of these events.

In this regard, the effectiveness of the co-operation between the Egyptian authorities and my country's maritime administration must be emphasized. From the very outset, direct channels of communication were established, and these were then augmented by the creation of a joint investigatory board comprising members of both maritime administrations as well as international experts, thus ensuring the above-mentioned impartiality and transparency.

I should like to highlight the welcome and speedy responses given by the governments concerned and by IMO, thanks to the efforts of its Secretary-General, who has been responsible for co-operation among the interested parties and has facilitated the provision of the resources to ensure an effective and transparent investigation.

Lastly, I cannot omit to commend all those involved in the search and rescue operations and all those who have tried to mitigate the consequences of this terrible tragedy.

Thank you.

ANNEX 37**STATEMENT BY THE DELEGATION OF TURKEY****Regarding the establishment of a new coast station in Northern Cyprus**

The new coast station in Northern Cyprus has been established with a view to increasing navigational safety and ensuring the well-being of all seafarers in the region. In this context, the International NAVTEX Co-ordinating Panel has been informed accordingly and has been requested to provide necessary broadcasting codes and times for the new station.

It should be underlined that the establishment of such a multifunctional station will not only contribute to the enhancement of navigational safety in the Eastern Mediterranean but also serve to address the needs of those who may fall under distress in the region. It goes without mentioning that the operation of this new coast station will make the region a safer and more secure environment for all vessels and seafarers.

In this context, it should be emphasized that the decision to establish a coast station in Northern Cyprus has been taken merely with humanitarian motives and purposes, namely to contribute to the improvement of navigational safety in real life in the area.

As such, Turkey expects the request regarding the broadcasting codes and times to be considered in this manner and within its own merits.

In light of the foregoing, Turkey strongly rejects all irrespective and groundless claims asserted by certain parties which obviously aimed to distract and politicize the matter and regrets that such an issue of humanitarian concern has unfortunately been sacrificed to the political exploitation of these parties.

Turkey would also like to communicate its resentment regarding the approach of the International Maritime Organization towards the issue. IMO as a specialized agency of the United Nations would have normally been expected to refrain from any political judgements which will impair its impartiality.

Yet, Turkey will continue to pursue the issue in the relevant platforms.

ANNEX 38**STATEMENT BY THE DELEGATION OF THE REPUBLIC OF CYPRUS****Made under agenda item 3 in relation to
paragraph 2.1.1.1 of document COMSAR 10/3/2**

Regarding the issue at hand, we have the following questions to ask:

- (a) Has the application by the Republic of Turkey to establish a NAVTEX station in the territory of the Republic of Cyprus been declined?

In our view, it has and this is confirmed by the position taken by the competent body. Having said that, we wish to set on record that the appropriate authorities of the Republic of Cyprus have not been informed about this application as stipulated in the agreed procedures; and

- (b) Does the Organization accept applications from one Member State to set up a NAVTEX station in the territory of another Member State?

If the application of the Republic of Turkey to set up a NAVTEX station in Cyprus has been rejected then we would like to make no further comments on the issue.

It is our view that the Organization, as a Specialized Agency of the United Nations, should respect and uphold the relevant decisions taken by the United Nations; which of course it does; and hence respect the status and representation of the Republic of Cyprus.

The Republic of Cyprus does not wish to open political discussions with the Republic of Turkey within the Organization as such discussions are neither prudent nor contributing to the peaceful solution of the Cyprus problem. In addition, they are counterproductive to the aims of the Organization. We strongly believe that when it comes to the safety of life at sea, a clearly humanitarian issue, and the prevention of pollution of the marine environment, political differences should be set aside for the benefit of the maritime community.

The insistence of the delegation of the Republic of Turkey to raise political issues with reference to “Northern Cyprus” obliges us to respond by stating that it suffices in this respect to any actions by Turkey aiming to promote the illegal entity in the occupied part of Cyprus is contrary to international law, the instruments establishing the Republic of Cyprus and the United Nations Security Council resolutions S/Res/541(1983) and S/Res/550(1984), declaring the subordinate to Turkey illegal secessionist entity in the occupied areas of Cyprus as “legally invalid”.

It was not our intention to include any statements on this issue in the Report of the Sub-Committee to the Maritime Safety Committee, but following the decision by the delegation of the Republic of Turkey to include their statements in the report, we have no other alternative but to ask for our statement to be also included in the report.

ANNEX 39**STATEMENTS BY THE DELEGATION OF THE REPUBLIC OF CYPRUS****Made under agenda item 5 in relation to
figure 3 and paragraph 5 of document COMSAR 10/5/2***Statement 1*

Thank you Mr. Chairman,

We thank COSPAS-SARSAT for their comprehensive report.

The delegation of the Republic of Cyprus welcomes the establishment by the Republic of Turkey of a Turkish Mission Control Centre (Turkish MCC), as we envisage that it will be beneficial, without any discrimination, to safety of lives at sea in the region. However, we have major reservations with regard to the area of coverage and we would like to make the following statement:

The boundaries of the proposed new Turkish MCC include a major part of the Republic of Cyprus' FIR and Search and Rescue Region (SRR). In addition, the Cypriot Search and Rescue Point of Contact is included in the list of SPOCs, supported by the Italian Mission Control Centre (ITMCC) and not the TRMCC. It is, therefore, impliedly claimed by Turkey that the northern part of the Cypriot SRR, – included in the map attached to the Turkish MCC documentation, – is Turkish, contrary to international law, the instruments establishing the Republic of Cyprus signed and guaranteed by the Republic of Turkey, and the United Nations Security Council resolutions S/Res/541(1983) and S/Res/550(1984), declaring the subordinate to Turkey illegal secessionist entity in the occupied areas of Cyprus as “legally invalid”.

It should be noted in this regard, that the SRR of the Republic of Cyprus was notified to the Organization on 29 July 1994 with the deposit of the Instrument of Accession of the Republic of Cyprus to the 1979 SAR Convention with the Secretary-General which contains a declaration to this effect. Therefore, we submit the kind request that the Organization communicates to the COSPAS-SARSAT the SRR of the Republic of Cyprus, deposited with the Organization since 1994.

The Government of the Republic of Cyprus has made it clear, well in advance, to all competent international organizations and bodies, including this principled Organization, that we would like the Cypriot SRR to remain within the service area of the ITMCC and that the competent Government (the Republic of Cyprus) has never given its consent to such an inclusion of the Cypriot SRR, or any part thereof, in the Turkish MCC Service Area. The Republic of Cyprus also has never agreed with the Turkish responsible national authorities, for the latter to provide COSPAS-SARSAT alert or SAR data to the Cypriot JRCC, as provided for in the COSPAS-SARSAT Data Distribution Plan, Issue 4-Revision 8, dated November 2005, Chapter 2.3 (Operational Document C/S A.001). Nor has Turkey ever made such a request or proposal.

The Government of the Republic of Cyprus strongly protests against any change of the existing arrangements, unilateral or unauthorized by the competent Government. It suffices in this regard to recall the Council's decision (CSC 9/OPN/SR/3.12.5) that: ““when *no agreement could be reached on the definition of the new service areas, the document C/S A.001(DDP) would follow the previous service area definition of the MCC, already commissioned into the COSPAS-SARSAT system*’. *The new MCC service area would then be limited to the search and rescue regions (SRR's) where that country assumes SAR responsibilities*”.

The Republic of Cyprus reiterates its firm position that it would like the Cypriot SRR to remain within the service area of the ITMCC and will not accept the persistent practice of Turkey to unilaterally change the area of competence of our SRR or to present its subordinate illegal secessionist entity in the occupied areas of Cyprus and the airspace above these areas as entitled to FIR and SRR or any other international responsibilities pertaining exclusively to States recognized by the United Nations and the other international organizations with jurisdiction on the issue at hand. This practice encroaches upon international law at large and resolution of the Security Council of the United Nations.

In concluding, we strongly believe that no change to the Cyprus' SRR should take place, that it should remain within the service area of the ITMCC, and that the necessary corrections should be made to the TRMCC service area map.

We would appreciate the present statement by the Republic of Cyprus to be duly reflected in the final report of the meeting.

Thank you Mr. Chairman.

Statement 2

Point of order raised by the delegation of the Republic of Cyprus in response to comments made by the delegation of the Republic of Turkey

Mr. Chairman,

Diplomatic courtesy dictates avoidance of any terminology not acceptable by the international organizations dealing with the issue. Yet, when a specific delegation persistently violates such an ethical and procedural rule, by referring to the Delegation of the Republic of Cyprus as the Greek Cypriot Delegation, then the delegation provoked is left without option but to respond accordingly. Before responding to such a provocation, I kindly ask Mr. Chairman to instruct delegations to respect proper reference to Member States, otherwise, we will be obliged to respond and our delegation will not be responsible for the consequences that will follow.

Thank you Mr. Chairman.

ANNEX 40**STATEMENT BY THE DELEGATION OF GREECE****Regarding document COMSAR 10/5/2**

Concerning the matter raised by the Delegation of the Republic of Cyprus on the boundaries of the TRMCC, Greece expresses its full support for the concerns raised by Cyprus and considers that the TRMCC Service Region, which includes a large part of the Republic of Cyprus, is a direct challenge to its sovereignty and contravenes the relevant UN Security Council Resolutions. We must be careful not to legitimize, through seemingly technical matters, actions condemned by the UNSC.

Greece also has a problem with the TRMCC Service Area in so far as its western boundaries divide the Athens FIR into two separate parts and include land, sea and airspace areas under Greek sovereignty, and in any case arbitrarily attempt to modify the boundaries of MCC areas in the region without the consent of the countries chiefly concerned.

Greece considers that the procedure followed regarding the determination of the boundaries of the TRMCC Service Area was inappropriate. Furthermore, the inclusion of part of the Athens FIR in the TRMCC Service Area and the resulting overlapping with the ITMCC Service Area is contrary to ICAO Rules and Decisions and incompatible with IMO recommendations. Greece has formally expressed its reservations both to IMO and ICAO in detail.

For all the above reasons, Greece has expressed reservations as to the boundaries for the TRMCC Service Area. Greece will, therefore, endeavour to resolve this irregularity within the framework of COSPAS-SARSAT. In any case, Greece reserves its right to refer the matter to the IMO and requests that its reservations be noted in the Report to the MSC.

ANNEX 41**STATEMENT BY THE DELEGATION OF TURKEY****Regarding the Turkish Mission Control Centre in the COSPAS-SARSAT System**

In accordance with long-standing COSPAS-SARSAT Program Management Policy, matters such as establishment and service areas of Mission Control Centres (MCC) in the System are discussed and decided upon in the competent COSPAS-SARSAT governing bodies.

In this regard, all the decisions concerning the establishment, operation and service area of the Turkish MCC were taken and endorsed in accordance with COSPAS-SARSAT rules and procedures by the competent COSPAS-SARSAT platforms, namely the Joint Committee and the Council of the Organization.

COSPAS-SARSAT Secretariat reaffirmed this fact in their letter of 21 December 2005 addressed to all COSPAS-SARSAT Parties, MCC's and MCC manufacturers. Accordingly, the Turkish MCC continues to function successfully at Full Operational Capability in her service area as agreed in the 35th Session of the COSPAS-SARSAT Council.

In line with the foregoing, it is strange that certain delegations sought to challenge the given decisions of the COSPAS-SARSAT Council regarding the service area of the Turkish MCC which are already in effect. In this context, statements alleging that the Turkish MCC's service area was defined "arbitrarily without the consent of the relevant parties" are obviously far from reflecting the truth as the decisions regarding the issue were agreed upon in the competent COSPAS-SARSAT bodies in consultation with the relevant existing MCC's.

It should be underlined that Turkey perceives search and rescue issues merely from a technical and humanitarian point of view. It goes without mentioning that in accordance with international law the definition of service areas within the context of COSPAS-SARSAT has no connection whatsoever with any sovereignty issues. Thus, claims aiming to establish a linkage between MCC service areas and sovereignty matters are simply considered as a futile attempt to reverse the already taken decisions of the COSPAS-SARSAT Council regarding the service area of the Turkish MCC.

Moreover, the Hamburg Convention of 1979 stipulates that each search and rescue region shall be established by agreement among Parties concerned. In this regard, it should be emphasized that such delimitation of search and rescue regions based on agreements among relevant parties does not exist in the concerning area. Therefore, any claim that the service area of the Turkish MCC intrudes the unilaterally declared search and rescue regions of other parties is unfounded.

Yet, it must further be noted that the Sub-Committee on Radio Communications and Search and Rescue (COMSAR) is not the appropriate body to consider or address matters related to service areas of Mission Control Centres (MCC) in the COSPAS-SARSAT System.

ANNEX 42**STATEMENT BY THE DELEGATION OF THE UNITED STATES**

The United States' analysis of the IMO and IMSO Conventions concludes that, insofar as liability of member governments for oversight functions and oversight of GMDSS is concerned, the status of IMO and IMSO are similar. The United States believes that articles 1(a), 2, and 28 of the IMO Convention implicitly authorize the IMO to carry out such oversight functions through its Maritime Safety Committee. Indeed, that is precisely what the Maritime Safety Committee is doing today. As to liability of IMO or its Contracting Governments, the situation is also similar to IMSO. Under the IMO Convention, the IMO's immunity is governed by the UN's General Convention on Privileges and Immunities of the Specialized Agencies (although the U.S. is not a party to that convention). The IMO Convention Article 65 and appendix II, requires member states to accord privileges and immunities to it. The situation with respect to IMSO is similar. With respect to liability of member states for oversight functions of IMO or IMSO, such liability is governed by principles of sovereign immunity and domestic laws of the member state. The United States believes that member states are unlikely to be held liable for oversight functions of either organization under principles of sovereign immunity. Because of this conclusion as respects no liability for oversight of either Organization, or its member states for oversight functions, the United States believes that it is not a necessity to apply that "clean break" principle between IMO and IMSO. In fact, it would be ill-advised to incorporate such principle into the amended resolution.
