

MARITIME SAFETY COMMITTEE
88th session
Agenda item 23

MSC 88/23/9
23 August 2010
Original: ENGLISH

WORK PROGRAMME

IMO/WMO Worldwide Met-ocean Information and Warning Service

Submitted by the World Meteorological Organization (WMO)

SUMMARY

<i>Executive summary:</i>	This document proposes a new Assembly resolution regarding the provision of Meteorological Information and Warnings, as part of the GMDSS
<i>Strategic direction:</i>	1.1, 5.2
<i>High-level action:</i>	1.1.2, 5.2.4, 5.2.5
<i>Planned output:</i>	1.1.2.7, 5.2.4.3, 5.2.5.1, 5.2.5.2, 5.2.5.4
<i>Action to be taken:</i>	Paragraph 24
<i>Related documents:</i>	MSC 85/9, COMSAR 12/3/2, resolutions A.705(17) and A.706(17)

Introduction

1 The World Meteorological Organization (WMO) proposes the introduction of a new Assembly resolution to address the provision of met-ocean information as required under SOLAS regulation V/5.

Background

2 SOLAS regulation V/5 requires Contracting Governments:

- "2.1 to warn ships of gales, storms and tropical cyclones by the issue of information in text and, as far as practicable graphic form, using the appropriate shore-based facilities for terrestrial and space radiocommunications services.
- 2.10 to endeavour to obtain a uniform procedure in regard to the international meteorological services already specified, and as far as practicable, to conform to the technical regulations and recommendations made by the World Meteorological Organization, to which Contracting Governments may refer, for study and advice, any meteorological question which may arise in carrying out the present Convention.

- 4 Forecasts, warnings, synoptic and other meteorological data intended for ships shall be issued and disseminated by the national meteorological service in the best position to serve various coastal and high seas areas, in accordance with mutual arrangements made by Contracting Governments, in particular as defined by the World Meteorological Organization's System for the Preparation and Dissemination of Meteorological Forecasts and Warnings for the High Seas under the Global Maritime Distress and Safety System (GMDSS)."

3 Currently, whilst IMO Assembly resolution A.705(17) as amended, (on the Promulgation of Maritime Safety Information) outlines the principles of the provision of maritime safety information, which is enacted by the Joint IMO/IHO/WMO Manual on Maritime Safety Information, and IMO Assembly resolution A.706(17) as amended, outlines the methodology for the provision of the navigation warnings component of maritime safety information, there is no similar resolution which outlines the provision of met-ocean information.

Scope of the proposal

4 This proposal addresses the introduction of an Assembly resolution outlining the World-Wide Met-Ocean Information and Warning Service to meet the requirements of SOLAS regulation V/5.4 and to ensure consistency with other components of maritime safety information.

5 The World Meteorological Organization (WMO) proposes that a new Assembly resolution be adopted to ensure compliance with SOLAS regulation V/5. A draft resolution is shown at annex.

Need or compelling need

6 The Global Maritime Distress and Safety System (GMDSS) is the international system which uses terrestrial and satellite technology and ship-board radio-systems to ensure the efficient provision of safety information to vessels at sea. Within the GMDSS the maritime safety information service is the internationally and nationally co-ordinated network of broadcasts containing information which is necessary for safe navigation, received in ships by equipment which automatically monitors the appropriate transmissions, displays information which is relevant to the ship and provides a print capability.

7 The World Meteorological Organization (WMO) considers that, in order to ensure consistency in the provision of maritime safety information, it would be beneficial to introduce an appropriate IMO resolution to describe the provision of the meteorological component of maritime safety information

Analysis of the issues involved

8 MSC 85 adopted a series of amendments to IMO resolution A.705(17), on the promulgation of Maritime Safety Information. Paragraph 5.2 of the annex to MSC.1/Circ.1287 states that:

"Meteorological information shall be provided in accordance with the World Meteorological Organization (WMO) technical regulations and recommendations, monitored and reviewed by the Expert Team on Maritime Safety Services of the Joint WMO/IOC Commission for Oceanography and Marine Meteorology (JCOMM)."

9 The World Meteorological Organization (WMO) considers that to support this it would be beneficial to introduce an appropriate resolution to ensure that the methodology for applying the content of the above paragraph is consistent with the methodology adopted for the provision of Navigational Warnings through resolution A.706(17), as amended.

Cost(s) to the maritime industry

10 As maritime safety information is already provided, and appropriate carriage requirements are already in place, no additional cost is anticipated.

Associated legislative and/or administrative burden

11 None.

Benefits which would accrue from the proposal

12 The World Meteorological Organization (WMO) is of the view that the adoption of the proposed resolution will ensure greater consistency and management in the provision of met-ocean data within the GMDSS.

Priority and target completion date

13 It is proposed that the item be assigned a completion date of 2011.

Specific indication of the action required

14 The proposed draft resolution is shown at annex.

Is the subject of the proposal within the scope of IMO's objectives?

15 Yes.

Is the proposed item related to the scope of the Strategic Plan for the Organization and fits into the High-level Action Plan?

16 Strategic Plan: Yes, items SP 1.1 and SP 5.2.

17 High-level Action Plan: Yes, items HLAP 1.1.2, 5.2.4 and 5.2.5.

Do adequate industry standards exist?

18 Not applicable.

Do the benefits justify the proposed action?

19 Yes: see paragraphs 3, 7 and 11.

Committee and/or subsidiary bodies essential to complete the work

20 Responsible Committee: Maritime Safety Committee.

21 Lead Sub-Committee: Sub-Committee on Radiocommunications and Search and Rescue.

Estimation of the number of sessions needed to complete the work

22 Number of sessions: One.

23 Preferred Start Session: MSC 88.

Action requested of the Committee

24 The Committee is invited to:

- .1 consider the draft resolution on the IMO/WMO World-Wide Met-Ocean Information and Warning Service, as set out in annex;
- .2 approve the draft resolution and forward to Assembly for adoption; and
- .3 consider the above proposed item for inclusion in the biennial agenda of the Sub-Committee on Radiocommunications and Search and Rescue.

ANNEX

DRAFT ASSEMBLY RESOLUTION

**ADOPTION OF THE IMO/WMO WORLD-WIDE MET-OCEAN INFORMATION AND
WARNING SERVICE**

THE ASSEMBLY,

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

NOTING the International Convention for the Safety of Life at Sea (SOLAS), 1974, in particular Chapter V (Safety of Navigation), Regulation 5 (Meteorological Services and Warnings) of the 2001 amendments,

BEARING IN MIND the decisions of the 62nd Council of the World Meteorological Organization,

RECOGNIZING that the existing WMO GMDSS Marine Broadcast System, as amended, is an integral part of the IMO/WMO Worldwide Met-ocean Information and Warning Service (WWMIWS) and further recognizing that the WMO GMDSS Marine Broadcast System also needs to be fully in harmony with the IMO/IHO Worldwide Navigational Warning Services, and to respond to requirements for maritime safety services expressed by IMO,

NOTING the provisions made for the promulgation of maritime safety information by the 1988 amendments to the International Convention for the Safety of Life at Sea, 1974, concerning radio communications for the global maritime distress and safety system,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its [...] session,

1 ADOPTS the IMO/WMO Worldwide Meteorological Information and Warning Service – Guidance Document, as set out in annex 1 to the resolution;

2 RECOMMENDS Governments to implement the Worldwide Meteorological Information and Warning Service;

3 AUTHORIZES the Maritime Safety Committee to keep the annexed Guidance under review and update them as necessary in light of experience gained in their application.

ANNEX

IMO/WMO WORLDWIDE MET-OCEAN INFORMATION AND WARNING SERVICE

GUIDANCE DOCUMENT

1 Introduction

1.1 The International Convention for the Safety of Life at Sea (SOLAS), 1974, Chapter V (Safety of Navigation), Regulation 4 (Meteorological Services), as amended, states:

"(b) In particular, the Contracting Governments undertake to co-operate in carrying out, as far as practicable, the following meteorological arrangements:

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

1.2 IMO resolution A.705(17) on promulgation of maritime safety information, adopted by IMO/MSC 85 (2008), sets out the organization, standards and methods which should be used for the promulgation and reception of maritime safety information, including navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships, as documented in the International Convention for the Safety of Life at Sea (SOLAS). The WMO Executive Council, at its sixty-first session (June 2009), requested WMO to establish and develop, in collaboration with the IMO, terms of reference for an IMO/WMO Worldwide Met-ocean Information and Warning Service (WWMIWS), to complement the existing IMO/IHO Worldwide Navigational Warning Services (WWNWS, IMO resolution A.706(17)). In this context, this document is intended to provide specific guidance for the promulgation of internationally coordinated meteorological information, forecast and warnings services, which does not apply to purely national services.

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

1.4 Future amendments to this guidance document will be considered formally and approved by both WMO and IMO. Proposed amendments shall be evaluated by the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) Expert Team on Maritime Safety Services, which includes an *ex-officio* representative of the IMO Secretariat, prior to any extensive WMO and IMO consideration.

2 Definitions

For the purposes of meteorological information, the following definitions apply:

- .1 *Coastal and off-shore area* applies to areas for which Member States issue weather and sea bulletins, governed by the procedures in WMO-No.558 – Manual on Marine Meteorological Services.
- .2 *HF NBDP* means High Frequency narrow-band direct-printing, using radio telegraphy as defined in Recommendation ITU-R M.688.
- .3 *International NAVTEX service* means the coordinated broadcast and automatic reception on 518 kHz of maritime safety information by means of narrow-band direct-printing telegraphy using the English language.
- .4 *International SafetyNET service* means the coordinated broadcasting and automated reception of maritime safety information via the Inmarsat Enhanced Group Call (EGC) system, using the English language, in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended.
- .5 *Maritime Safety Information (MSI)* means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships.
- .6 *METAREA* means a geographical sea area established for the purpose of coordinating the broadcast of marine meteorological information. The term METAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.
- .7 *METAREA Coordinator* means the authority charged with coordinating Maritime Safety Information broadcasts by one or more National Meteorological Services acting as Preparation or Issuing Services within the METAREA.
- .8 *National NAVTEX service* means the broadcast and automatic reception of maritime safety information by means of narrow-band direct-printing telegraphy using frequencies other than 518 kHz and languages as decided by the Administration concerned.
- .9 *National SafetyNET service* means the broadcasting and automated reception of maritime safety information via the Inmarsat EGC system, using languages as decided by the Administration concerned.
- .10 *NAVAREA* means a geographical sea area established for the purpose of coordinating the broadcast of navigational warnings. The term NAVAREA followed by a roman numeral may be used to identify a particular sea area. The delimitation of such areas is not related to and should not prejudice the delimitation of any boundaries between States.

- .11 *NAVTEX coordinator* means the authority charged with operating and managing one or more NAVTEX stations broadcasting maritime safety information as part of the International NAVTEX service.
- .12 *Sub-Area* means a sub-division of a METAREA in which a number of countries have established a coordinated system for the promulgation of meteorological information. The delimitation of such areas is not related to and shall not prejudice the delimitation of any boundaries between States.
- .13 In the operating procedures *coordination* means that the allocation of the time for data broadcast is centralized, the format and criteria of data transmissions are compliant as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information and that all services are managed as set out in IMO resolution A.705(17), as amended.

3 Meteorological Information Broadcasts

3.1 Guidance for handling and formatting meteorological information is given in the Joint IMO/IHO/WMO Manual on Maritime Safety Information, as approved by IMO under MSC.1/Circ.1310, the NAVTEX Manual, the International SafetyNET Manual and the Manual on Marine Meteorological Services (WMO-No. 558), and is summarized as follows:

3.2 Methods

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

- .1 *NAVTEX*: broadcasts to coastal and offshore waters; and
- .2 *SafetyNET*: broadcasts which cover all the waters of the globe except for sea area A4, as defined by resolution A.801(19), Annex 3, paragraph 4, as amended.

3.2.2 Information shall be provided for unique and precisely defined sea areas, each being served only by the most appropriate of the above systems. Although there will be some duplication to allow a ship to change from one system to another, the majority of messages will only be broadcast on one system.

3.2.3 NAVTEX broadcasts shall be made in accordance with the standards and procedures set out in the NAVTEX Manual.

3.2.4 SafetyNET broadcasts shall be made in accordance with the standards and procedures set out in the International SafetyNET Manual.

3.2.5 HF NBDP may be used to promulgate maritime safety information in areas outside Inmarsat coverage (SOLAS regulation IV/7.1.5).

3.2.6 In addition, Administrations may also provide maritime safety information by other means.

3.3 Scheduling

3.3.1 Automated methods (NAVTEX/SafetyNET)

3.3.1.1 Meteorological warnings shall be broadcast as soon as possible or as dictated by the nature and timing of the event. Normally, the initial broadcast should be made as follows:

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

3.3.1.2 Meteorological warnings shall be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and International SafetyNET Manual as appropriate.

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

3.3.2 Schedule changes

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

3.3.2.2 Times of scheduled broadcasts under the international SafetyNET service are coordinated through the IMO SafetyNET Coordinating Panel.

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

3.4 Language

3.4.1 All meteorological information shall be broadcast only in English in the International NAVTEX and SafetyNET services.

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

4 Meteorological Information

4.1 General

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

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

4.1.3 There are three types of marine meteorological information: forecasts and warnings for the High Seas, forecasts and warnings for Coastal and Offshore areas and services for Ports & Harbour areas. The Marine Meteorological Information guidance and coordination are involved with only two of them:

- .1 Services for the High Seas, which will comprise:
 - (a) Warnings of gales and storms;
 - (b) Weather and sea bulletins, which shall include, in the order given hereafter:
 - Part I – Storm Warnings;
 - Part II – Synopsis of major features of the surface weather chart and, to the extent possible, significant characteristics of corresponding sea-surface conditions; and
 - Part III –Forecasts.
- .2 Services for Coastal and Offshore Areas, which will comprise Warnings, Synopses and Forecasts.

4.1.4 Operational guidance for handling and formatting meteorological information is given in detail in the Annex IV of the WMO Technical Regulations (Manual on Marine Meteorological Services – WMO-No. 558). It is summarized in the following paragraphs 4.2 and 4.3.

4.2 Services for the High Seas

Services for the High Seas shall consist of:

4.2.1 Warnings

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

- (a) Type of warning;
- (b) Date and time of reference in UTC;
- (c) Location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;
- (d) Extent of affected area; and
- (e) Wind speed or force and direction in the affected areas.

4.2.1.2 Warnings for other severe conditions such as poor visibility, severe sea states (swell, risk of abnormal waves), ice accretion, etc., shall also be issued, as necessary.

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

4.2.2 Synopses

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

- (a) Date and time of reference in UTC;
- (b) Synopsis of major features of the surface weather chart; and
- (c) Direction and speed of movement of significant pressure systems and tropical disturbances.

4.2.3 Forecasts

4.2.3.1 The forecasts given in Part III of weather and sea bulletins shall have the following content and order of items:

- (a) The valid period of forecast;
- (b) Name or designation of forecast area(s) within the main MSI area; and
- (c) A description of:
 - (i) Wind speed or force and direction;
 - (ii) Sea state;
 - (iii) Visibility when forecast is less than five nautical miles; and
 - (iv) Ice accretion, where applicable.

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

4.3 Services for the Coastal and Offshore Areas

Services for the Coastal and Offshore Areas shall consist of:

4.3.1 Warnings

4.3.1.1 When included, warnings shall be placed at the beginning of the bulletin.

4.3.1.2 Warnings shall be given for:

- (a) Tropical cyclones (hurricanes in the North Atlantic and eastern North Pacific, typhoons in the Western Pacific, cyclones in the Indian Ocean and cyclones of similar nature in other regions);

- (b) Gales (Beaufort force 8 or 9) and storms (Beaufort force 10 or over); and
- (c) Ice accretion.

4.3.2 Synopses and Forecasts

4.3.2.1 Synopses and Forecasts should have the following content:

- (a) A synopsis of major features of the surface weather chart;
- (b) The valid period of forecast;
- (c) Name or designation of forecast area(s); and
- (d) A description of:
 - (i) Wind speed or force and direction;
 - (ii) Visibility when forecast is less than five nautical miles;
 - (iii) Ice accretion, where applicable; and
 - (iv) Sea and swell.

5 Issuing and Preparation Services

5.1 Issuing Service

5.1.1 An Issuing Service is a National Meteorological Service which has accepted responsibility for ensuring that meteorological forecasts and warnings for shipping are disseminated through the Inmarsat SafetyNET and NAVTEX services to the designated area for which the Service has accepted responsibility under the broadcast requirements of the GMDSS. The forecasts and warnings for broadcasts may have been prepared solely by the issuing service, or by another preparation service, or a combination of both, on the basis of negotiations between the services concerned, or otherwise, as appropriate. The issuing service is responsible for composing a complete broadcast bulletin on the basis of information input from the relevant preparation services and for broadcasting this in accordance with the guidelines contained within the International SafetyNET Manual and the International NAVTEX Manual. The issuing service is also responsible for monitoring the broadcasts of SafetyNET information to its designated area of responsibility.

NOTES:

- (1) For some METAREAS there may be only one preparation service, which will be the same National Meteorological Service as the issuing service (e.g., United Kingdom for area I, Argentina for area VI and Australia for area X).
- (2) An appropriate format for the attribution of the origins of the forecast and warning information contained in a broadcast bulletin may be developed on the basis of negotiations among the services concerned.

- (3) In situations where appropriate information, data or advice from other designated preparation services for a given area of responsibility is not available, it is the responsibility of the issuing service for that area to ensure that complete broadcast coverage for the area is maintained.

5.2 Preparation Service

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

6 Metarea Coordinator

6.1 METAREA Coordinator resources

6.1.1 The METAREA coordinator should have:

- .1 the expertise and information sources of a well-established Issuing Service; and
- .2 effective communications, e.g., telephone, e-mail, facsimile, internet, telex, etc., with National Meteorological Services in the METAREA, with other METAREA coordinators, and with other data providers.

6.2 METAREA Coordinator responsibilities

6.2.1 The METAREA coordinator should ensure that within its METAREA, National Meteorological Services which act as Preparation Services have the capability to:

- .1 be informed of all meteorological events that could significantly affect the safety of navigation within their area of responsibility;
- .2 assess all meteorological information immediately upon receipt in the light of expert knowledge for relevance to navigation within their area of responsibility;
- .3 forward meteorological warnings and relevant associated information which may require wider promulgation directly to adjacent METAREA coordinators and/or others as appropriate, using the quickest possible means;
- .4 ensure that information concerning all meteorological warning subject areas listed in paragraph 4 that may not require a METAREA warning within their own area of responsibility is forwarded immediately to the appropriate National Meteorological Services and METAREA coordinators affected by the meteorological event; and
- .5 maintain records of source data relating to meteorological information and warning messages within their area of responsibility.

6.2.2 The METAREA coordinator should ensure that within its METAREA, National Meteorological Services which act as Issuing Services have the capability to:

- .1 select meteorological information and warnings for broadcast in accordance with the guidance given in paragraph 4 and 5 above; and
- .2 monitor the SafetyNET transmission of their bulletins, broadcast by the Issuing Service.

6.2.3 The METAREA coordinator should also:

- .1 act as the central point of contact on matters relating to meteorological information and warnings within the METAREA;
- .2 promote and oversee the use of established international standards and practices in the promulgation of meteorological information and warnings throughout the METAREA;
- .3 coordinate preliminary discussions between neighbouring Members, seeking to establish and operate NAVTEX services, prior to formal application; and
- .4 contribute to the development of international standards and practices through attendance and participation in the JCOMM Expert Team on Maritime Safety Services meetings, and also attend and participate in relevant IMO, IHO and WMO meetings as appropriate and required.
