REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF TRANSPORT AND COMMUNICATIONS
DEPARTMENT OF MARINE ADMINISTRATION
No-363/421, Corner of Merchant & Theinbyu Road,
Botahtaung Township, Yangon, Myanmar

E-mail: dma@motc.gov.mm, dma.myan@gmail.com
Tel: +95-1-397640
P.O. Box: 194
Fax:+95-1-397641

Date: 22 October 2021

Marine Guidance (5 / 2021)

GUIDANCE FOR COASTAL STATE IMPLEMENTATION ON SHORE-BASED RADIO COMMUNICATION SERVICES

Applicable to: **Coastal State Control personnel of the Department of Marine Administration, Information Technology and Cyber Security Department**

References:
- **(a) International Convention for the Safety of Life at Sea (SOLAS Convention), 1974 as amended;**
- **(b) IMO Resolution A.1070 (28) IMO Instruments Implementation Code (III Code) (adopted on 4 December 2013);**
- **(c) Resolution A.801 (19) Provisions of radio services for the Global Maritime Distress and Safety System (GMDSS) (adopted on 23 November 1995);**
- **(d) Resolution A.617 (15) Implementation of the NAVTEX system as a component of the World-Wide Navigational Warning Services, (adopted on 19 November 1987);**

Summary

This Marine Guidance provides general guidelines relating to the performance and developing of the Shore-based Radio communication services under the provisions of SOLAS Convention 1974, regulation IV/5 and III Code to fulfill the sufficient capability for providing Shore-based Radio communication services.

1. According to paragraph 46 of the IMO Instruments Implementation Code (III Code), the Republic of the Union of Myanmar, being a party to the International Convention for the Safety of Life at Sea (SOLAS Convention), 1974 as amended is obliged to implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of the SOLAS Convention in order to effectively meet the obligations of the coastal State.

2. The Department of Marine Administration issues the marine guidance to encourage the implementation and enforcement of the coastal States' rights, obligations and responsibilities relating to the Shore-based Radio communication services under the provisions of Regulation IV/5 of the SOLAS Convention and the III Code.

3. The purpose of this guidance is to assist to ensure the Information Technology and Cyber Security Department (ITCSD) which is developing the Shore-based Radio communication Service to cover the Myanmar waters to fulfill the ships performing GMDSS functions of SOLAS Convention 1974, Regulation IV/4 and Part C, Ship requirements, and undertakes to make available appropriate shore-based facilities for space and terrestrial radio communication services having due regards to the recommendations of the provision as per Regulation IV/5

4. This Marine Guidance covers the guidelines for coastal State implementation on Shore-based Radio communication services hereby attached in Annex.

Dr. Ko Ko Naing
Director General (Acting)

Annex

Republic of the Union of Myanmar
Ministry of Transport and Communications
Department of MarineAdministration

GUIDANCE FOR COASTAL STATE IMPLEMENTATION ON SHORE-BASED RADIO COMMUNICATION SERVICES

October 2021

Guidelines for Shore-based Radio communication Services

Purpose

1. The purpose of this marine guidance is to assist the Information Technology and Cyber Security Department (ITCSD) which is developing the Shore-based Radio communication Service to cover the Myanmar waters to fulfill the ships performing GMDSS functions of SOLAS Convention 1974, Regulation IV/4 and undertakes appropriate shore-based facilities for space and terrestrial radio communication services as per Regulation IV/5, IMO Resolution A. 801 (19) and Resolution A.617 (15).

2. The Department of Marine Administration (DMA) undertakes to encourage the Coastal State responsibilities for shore-based radio communication service as per SOLAS convention 1974, as amended Regulation IV/5 and the IMO Instruments Implementation Code (III Code).

Obligations of the Coastal State under the SOLAS Convention

1. The Republic of the Union of Myanmar, being a Contracting Governing of the International Convention for Safety of Life at Sea (SOLAS), 1974 as amended, and as its rights, obligations and responsibilities of the Coastal State should undertake to carry out effectively, in cooperation, the shore-based radio communication services under the stipulation of SOLAS IV/5 to fulfill the ships performing GMDSS functions of SOLAS Convention, regulation IV/4 and is also responsible for IMO resolutions as:

(a) IMO Instruments Implementation Code (III Code), resolution A.1070 (28) adopted on 4 December 2013;

(b) Provision of Radio communication services (SOLAS convention chapter IV, regulation 5;

(c) Provision of radio services for the global maritime distress and safety system (GMDSS), resolution A. 801(19) adopted on 23 November 1995;

(d) Implementation of the NAVTEX system as a component of the World-Wide Navigational Warning Services, A. 617(15) adopted on 19 November 1987.

2. IMO Instruments Implementation Code (III Code) is stipulated to implement coastal States' obligations by issuing national legislation and guidance, which will assist in implementing and enforcing the requirements of all safety and pollution prevention conventions and protocols to which it is a party;

3. A Coastal State shall ensure that its legislation, guidance and procedures are established for the consistent implementation and verification of its rights, obligations and responsibilities contained in the relevant international instruments to which it is a party and those rights, obligations and responsibilities include, inter alia:

(a) radio communication services;

(b) broadcasting of maritime safety information i.e. navigational warning, meteorological forecast and warning and other safety related information.

4. Further, as the requirement of III Code mentioned in **Appendix (A)**, it has to assign responsibilities to update and revise any relevant policies adopted, as necessary.

Provision of Shore-based Radio Communication Services for Global Maritime Distress and Safety System (GMDSS) under SOLAS Convention

1. The GMDSS came into force in February 1992 under the international convention for the Safety of Life at Sea (SOLAS) amended in November 1988 and is intended for setting up a global communications network to support search and rescue activities from land, air and sea for rapid rescue for ships in distress.

2. Under the provision of SOLAS Convention Chapter IV, Regulation V, each Contracting Government undertakes to make available, as it deems practical and necessary either individually or in cooperation with other Contracting Governments, appropriate shore-based facilities for space and terrestrial radio communication services having due regard to the recommendations of the Organization. (Refer to Provision of radio services for the Global Maritime Distress and Safety (GMDSS) (resolution A.801 (19), as amended).

These services are:

(a) a radio communication service utilizing geostationary satellites in the maritime mobile-satellite service;
(b) a radio communication service utilizing polar orbiting satellites in the mobile-satellite service;
(c) the maritime mobile service in the bands between 156MHz and 174MHz;
(d) the maritime mobile service in the bands between 4,000 kHz and 27,500 kHz; and
(e) the maritime mobile service in the bands between 415 kHz and 535 kHz and between 1,605 kHz and 4,000 kHz.

3. Each Contracting Government undertakes to provide the Organization with pertinent information concerning the shore-based facilities in the maritime mobile service, mobile-satellite service and maritime mobile-satellite service, established by sea areas which it has designated off its coasts.
(The Master Plan of shore-based facilities for the GMDSS based on information provided by Contracting Governments is circulated to all concerned by means of GMDSS circulars.)

4. The GMDSS also allows shore-based search and rescue (SAR) authorities as well as ships in the immediate vicinity of the ship in distress to be rapidly alerted to the distress incident so that they can assist in coordinated search and rescue operations with a minimum delay.

5. The GMDSS substantially expands the SAR communications coverage to the global sphere using the VHF, MF and HF bands as well as satellite communication systems using digital selective calling (DSC) which allows a ship in distress to rapidly transmit information on its situation to a shore-based coast station in a simple, secure way. The coast station that has received a distress alert can easily access the ship for SAR communications.

6. In addition, the GMDSS NAVTEX system provides automatic broadcasting of maritime safety information, navigational and meteorological warnings and SAR information to all ships in a coastal area of up to 500 nautical miles offshore.

7. Shore-based coast stations providing with VHF, MF and HF radio communication services for ships at sea in accordance with the GMDSS have to incorporate the following functions:

(a) *Reception of distress alerts.* The shore station is required to keep continuous watch for distress alerts transmitted from ship in distress using DSC on VHF, MF and HF. The distress alert identifies the ship in distress, its position, date time in UTC, nature of distress, the type of assistance required and other information which might facilitate to rescue including the time of receipt of the information.

(b) *Transmission of acknowledgement.* The shore station which has received a distress alert is required to send back an acknowledgement signal to the ship in distress, to cease any transmission which may interfere with distress traffic, and to continue to watch distress traffic.

(c) *Re-transmission of the distress alert.* The shore station is required to have the means to re-transmit the received distress alert to all the ships navigating in the vicinity of the ship in distress.

(d) *Dissemination of maritime safety information.* To support SAR operations, shore-based coast stations are expected to disseminate maritime safety information including navigational and meteorological warnings and other urgency and safety messages. The NAVTEX information is transmitted on international NAVTEX frequency, 518 kHz, by means of narrow-band direct printing (NBDP) telegraphy in forward error correction (FEC) mode in English language.

8. The Information Technology and Cyber Security Department which is establighing and implementing the shore-based radio communication services have to follow the IMO Resolution A. 801(19) adopted on 23 November 1995, the criteria for use when providing Shore-based Digital Selective Calling (DSC) Facilities for use in the GMDSS, the criteria for establishing GMDSS Sea Areas, the criteria for use when providing NAVTEX service and the criteria for use when providing Inmarsat Shore-Based Facilities for use in the GMDSS set out respectively in Annexes 1, 2, 3, 4 and 5 to the resolution A.801(19).

Guidance for the Implementation of the NAVTEX system as a component of the World-Wide Navigational Warning Services

1. NAVTEX service provides to ships with navigational and meteorological warnings and urgent information by automatic print-outs from a dedicated receiver. NAVTEX is a component of the World-Wide Navigational Warning Service (WWNWS) adopted by Assembly resolution A. 419(XI) and a requirement of the Global Maritime Distress and Safety (GMDSS).

2. NAVTEX service uses a single international NAVTEX frequency (518 kHz) on which coast stations transmit information in English on a time-sharing basis to prevent mutual interference. All necessary information is contained in each transmission.

3. The Information Technology and Cyber Security Department (ITCSD) should ensure to undertake the IMO Resolution A. 617(15) adopted on 19 November 1987 which is the automated direct-printing telegraph system for promulgation of navigational and meteorological warnings and urgent information to ships (NAVTEX) as a component of the World-Wide Navigational Warning Service on the basis of the recommendation set out in the Annex to the resolution A. 617(15).

4. The Department of Marine Administration (DMA) may oversee and cooperate with the Information Technology and Cyber Security Department (ITCSD) and other relevant departments to ensure the performance of shore-based radio communication services with the following implementation:

(a) Providing timely information to the International Maritime Organization (IMO) on the annual submission of the Coastal State implementation, performances and evaluation report to the IMO regarding the provision of shore-based radio communication services, including receiving and relaying alerts and broadcasting the maritime safety information (MSI) to vessels plying in the Myanmar waters;

(b) Reviewing upon radio communication services and broadcasting of MSI for ships plying in the Myanmar waters;

(c) Upgrading the capabilities of the Information Technology and Cyber Security Department to fulfil the obligations and responsibilities of the State in accordance with the provisions of SOLAS Convention 1974, Regulation IV/5 and the provisions of relevant IMO mandatory instruments;

(d) Convening Joint Working Committee Meetings once every 3 to 6 months to coordinate, cooperate and promote interaction between concerned departments to improved implementation progress regarding shore-based radio communication services and broadcasting of MSI to perform the coastal state functions;

(e) Consulting with the relevant departments and organizations, reviewing the IMO's instruments, observing the national laws and their amendments according to the IMO's mandatory instruments, and submitting them to the Legal Advisory Unit (LAU) of the Ministry of Transport and Communications. The LAU will thoroughly review them and send comments to relevant departments and organizations.

Appendix (A)

Resolution A.1070(28)
(adopted on 4 December 2013)

IMO INSTRUMENTS IMPLEMENTATION CODE (III CODE)

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 and the prevention and control of marine pollution from ships,

RECALLING ALSO that, through resolution A.1018(26), it approved the time frame and schedule of activities for the consideration and introduction of an institutionalized IMO Member State Audit Scheme,

RECALLING ALSO that, by resolution A.1054(27), it adopted the *Code for the Implementation of Mandatory IMO Instruments, 2011*, which provides guidance for the implementation and enforcement of IMO instruments and forms the basis of the Voluntary IMO Member State Audit Scheme, in particular concerning the identification of the auditable areas,

BEING AWARE of the request of the seventh session of the United Nations Commission on Sustainable Development (CSD 7) that measures be developed to ensure that flag States give full and complete effect to the IMO and other relevant conventions to which they are party, so that the ships of all flag States meet international rules and standards,

RECOGNIZING that parties to the relevant international conventions have, as part of the ratification process, accepted to fully meet their responsibilities and to discharge their obligations under the conventions and other instruments to which they are party,

REAFFIRMING that States have the primary responsibility to have in place an adequate and effective system to exercise control over ships entitled to fly their flag, and to ensure that they comply with relevant international rules and regulations in respect of maritime safety, security and protection of the marine environment,

REAFFIRMING ALSO that States, in their capacity as port and coastal States, have other obligations and responsibilities under applicable international law in respect of maritime safety, security and protection of the marine environment,

NOTING that, while States may realize certain benefits by becoming party to instruments aiming at promoting maritime safety, security and the prevention of pollution from ships, these benefits can only be fully realized when all parties carry out their obligations as required by the instruments concerned,

NOTING ALSO that the ultimate effectiveness of any instrument depends, inter alia, upon all States:

(a) becoming party to all instruments related to maritime safety, security and pollution prevention and control;

(b) implementing and enforcing such instruments fully and effectively; and

(c) reporting to the Organization, as required,

BEING DESIROUS to further assist Member Governments to improve their capabilities and overall performance in order to be able to comply with the IMO instruments to which they are party,

CONSCIOUS of the difficulties some Member States may face in complying fully with all the provisions of the various IMO instruments to which they are party,

MINDFUL of the need for any such difficulties to be eliminated to the extent possible; and recalling that the Organization has established an Integrated Technical Cooperation Programme for that reason and purpose,

NOTING FURTHER that the Maritime Safety Committee and the Marine Environment Protection Committee have developed requirements for adoption by Contracting Governments to the International Convention for the Safety of Life at Sea, 1974, the Protocol of 1988 relating to the International Convention on Load Lines, 1966, the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, and the International Convention on Standards of Training, Certification and Watchkeeping, 1978, respectively, which will make the use of the Code referred to in operative paragraph 1 mandatory,

RECALLING FURTHER its consideration of requirements for adoption by Contracting Governments to the International Convention on Load Lines, 1966, the International Convention on Tonnage Measurement of Ships, 1969 and the Convention on the International Regulations for Preventing Collisions at Sea, 1972, which will also make the use of the Code referred to in operative paragraph 1 mandatory,

HAVING CONSIDERED the recommendations made by the Marine Environment Protection Committee, at its sixty-fourth session, and the Maritime Safety Committee, at its ninety-first session,

1. ADOPTS the IMO Instruments Implementation Code (III Code), set out in the annex to the present resolution;

2. REQUESTS the Maritime Safety Committee and the Marine Environment Protection Committee to keep the Code under review and, in coordination with the Council, to propose amendments thereto to the Assembly; and

3. REVOKES resolution A.1054(27) on the *Code for the Implementation of Mandatory IMO Instruments, 2011*.

Annex

IMO INSTRUMENTS IMPLEMENTATION CODE (III CODE)

Table of Contents

PART 1 – COMMON AREAS

Objective

1 The objective of this Code is to enhance global maritime safety and protection of the marine environment and assist States in the implementation of instruments of the Organization.

2 Different States will view this Code according to their own circumstances and should be bound only for the implementation of those instruments to which they are Contracting Governments or Parties. By virtue of geography and circumstance, some States may have a greater role as a flag State than as a port State or as a coastal State, whilst others may have a greater role as a coastal State or a port State than as a flag State.

Strategy

3 In order to meet the objective of this Code, a State is recommended to:

.1 develop an overall strategy to ensure that its international obligations and responsibilities as a flag, port and coastal State are met;

.2 establish a methodology to monitor and assess that the strategy ensures effective implementation and enforcement of relevant international mandatory instruments; and

.3 continuously review the strategy to achieve, maintain and improve the overall organizational performance and capability as a flag, port and coastal State.

General

4 Under the general provisions of treaty law and of IMO conventions, States should be responsible for promulgating laws and regulations and for taking all other steps which may be necessary to give those instruments full and complete effect so as to ensure safety of life at sea and protection of the marine environment.

5 In taking measures to prevent, reduce and control pollution of the marine environment, States should act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another.

Scope

6 The Code seeks to address those aspects necessary for a Contracting Government or Party to give full and complete effect to the provisions of the applicable international instruments to which it is a Contracting Government or Party, pertaining to:

.1 safety of life at sea;

.2 prevention of pollution from ships;

.3 standards of training, certification and watchkeeping for seafarers;

.4 load lines;

.5 tonnage measurement of ships; and

.6 regulations for preventing collisions at sea.

7 The following areas should be considered and addressed in the development of policies, legislation, associated rules and regulations and administrative procedures for the implementation and enforcement of those obligations and responsibilities by the State:

.1 jurisdiction;

.2 organization and authority;

.3 legislation, rules and regulations;

.4 promulgation of the applicable international mandatory instruments, rules and regulations;

.5 enforcement arrangements;

.6 control, survey, inspection, audit, verification, approval and certification functions;

.7 selection, recognition, authorization, empowerment and monitoring of recognized organizations, as appropriate, and of nominated surveyors;

.8 investigations required to be reported to the Organization; and

.9 reporting to the Organization and other Administrations.

Initial actions

8 When a new or amended instrument of the Organization enters into force for a State, the Government of that State should be in a position to implement and enforce its provisions through appropriate national legislation and to provide the necessary implementation and enforcement infrastructure. This means that the Government of the State should have:

.1 the ability to promulgate laws, which permit effective jurisdiction and control in administrative, technical and social matters over ships flying its flag and, in particular, provide the legal basis for general requirements for registries, the inspection of ships, safety and pollution prevention laws applying to such ships and the making of associated regulations;

.2 a legal basis for the enforcement of its national laws and regulations including the associated investigative and penal processes; and

.3 the availability of sufficient personnel with maritime expertise to assist in the promulgation of the necessary national laws and to discharge all the responsibilities of the State, including reporting as required by the respective conventions.

Communication of information

9 The State should communicate its strategy, as referred to in paragraph 3, including information on its national legislation to all concerned.

Records

10 Records, as appropriate, should be established and maintained to provide evidence of conformity to requirements and of the effective operation of the State. Records should remain legible, readily identifiable and retrievable. A documented procedure should be established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

Improvement

11 States should continually improve the adequacy of the measures which are taken to give effect to those conventions and protocols which they have accepted. Improvement should be made through rigorous and effective application and enforcement of national legislation, as appropriate, and monitoring of compliance.

12 The State should stimulate a culture which provides opportunities for improvement of performance in maritime safety and environmental protection activities, which may include, inter alia:

.1 continual training programmes relating to safety and pollution prevention;

.2 regional and national drills on safety and pollution prevention, which engage a broad spectrum of maritime-related national, regional and international organizations, companies and seafarers; and

.3 using reward and incentive mechanisms for shipping companies and seafarers regarding improving safety and pollution prevention.

13 Further, the State should take action to identify and eliminate the cause of any non-conformities in order to prevent recurrence, including:

.1 review and analysis of non-conformities;

.2 implementation of necessary corrective action; and

.3 review of the corrective action taken.

14 The State should determine action needed to eliminate the causes of potential non-conformities in order to prevent their occurrence.

PART 2 – FLAG STATES

Implementation

15 In order to effectively discharge their responsibilities and obligations, flag States should:

.1 implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which they are parties; and

.2 assign responsibilities within their Administrations to update and revise any relevant policies adopted, as necessary.

16 A flag State should establish resources and processes capable of administering a safety and environmental protection programme, which, as a minimum, should consist of the following:

.1 administrative instructions to implement applicable international rules and regulations as well as developing and disseminating any interpretative national regulations that may be needed including certificates issued by a classification society, which is recognized by the flag State in accordance with the provisions of SOLAS regulation XI-1/1, and which certificate is required by the flag State to demonstrate compliance with structural, mechanical, electrical, and/or other requirements of an international convention to which the flag State is a party or compliance with a requirement of the flag State's national regulations;

.2 compliance with the requirements of the applicable international instruments, using an audit and inspection programme, independent of any administrative bodies issuing the required certificates and relevant documentation and/or of any entity which has been delegated authority by the State to issue the required certificates and relevant documentation;

.3 compliance with the requirements related to international standards of training, certification and watchkeeping of seafarers. This includes, inter alia:

.1 training, assessment of competence and certification of seafarers;

.2 certificates and endorsements that accurately reflect the competencies of the seafarers, using the appropriate terminology as well as terms that are identical to those used in any safe manning document issued to the ship;

.3 impartial investigation to be held of any reported failure, whether by act or omission that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by the State;

.4 arrangements for the withdrawal, suspension or cancellation of certificates or endorsements issued by the State when warranted and when necessary to prevent fraud; and

.5 administrative arrangements, including those involving training, assessment and certification activities conducted under the purview of another State, which are such that the flag State accepts its responsibility for ensuring the competence of masters, officers and other seafarers serving on ships entitled to fly its flag;

.4 the conduct of investigations into casualties and adequate and timely handling of cases involving ships with identified deficiencies; and

.5 the development, documentation and provision of guidance concerning those requirements found in the relevant international instruments that are to the satisfaction of the Administration.

17 A flag State should ensure that ships entitled to fly its flag are sufficiently and efficiently manned, taking into account relevant and existing measures such as the Principles of Safe Manning adopted by the Organization.

Delegation of authority

18 With regard only to ships entitled to fly its flag a flag State authorizing a recognized organization to act on its behalf, in conducting the surveys, inspections and audits, issuing of certificates and documents, marking of ships and other statutory work required under the conventions of the Organization or under its national legislation, should regulate such authorization(s) in accordance with the applicable requirements of the international mandatory instruments to:

.1 determine that the recognized organization has adequate resources in terms of technical, managerial and research capabilities to accomplish the tasks being assigned, in accordance with the required standards for recognized organizations acting on behalf of the Administration set out in the relevant instruments of the Organization;

.2 have as its basis a formal written agreement between the Administration and the recognized organization which, as a minimum, includes the elements set out in the relevant instruments of the Organization, or equivalent legal arrangements, and which may be based on the model agreement for the authorization of recognized organizations acting on behalf of the Administration;

.3 issue specific instructions detailing actions to be followed in the event that a ship is found unfit to proceed to sea without danger to the ship or persons on board, or is found to present an unreasonable threat of harm to the marine environment;

.4 provide the recognized organization with all appropriate instruments of national law and interpretations thereof giving effect to the provisions of the conventions and specify, only for application to ships entitled to fly its flag, whether any additional standards of the Administration go beyond convention requirements in any respect; and

.5 require that the recognized organization maintain records, which will provide the Administration with data to assist in interpretation of requirements contained in the applicable international instruments.

19 No flag State should mandate its recognized organizations to apply to ships, other than those entitled to fly its flag, any requirement pertaining to their classification rules, requirements, procedures or performance of other statutory certification processes, beyond convention requirements and the mandatory instruments of the Organization.

20 The flag State should establish or participate in an oversight programme with adequate resources for monitoring of, and communication with, its recognized organization(s) in order to ensure that its international obligations are fully met, by:

.1 exercising its authority to conduct supplementary surveys to ensure that ships entitled to fly its flag effectively comply with the requirements of the applicable international instruments;

.2 conducting supplementary surveys as it deems necessary to ensure that ships entitled to fly its flag comply with national requirements, which supplement the international mandatory requirements; and

.3 providing staff who have a good knowledge of the rules and regulations of the flag State and those of the recognized organizations and who are available to carry out effective oversight of the recognized organizations.

21 A flag State nominating surveyor(s) for the purpose of carrying out surveys, audits and inspections on its behalf should regulate such nominations, as appropriate, in accordance with the guidance provided in paragraph 18, in particular subparagraphs .3 and .4.

Enforcement

22 A flag State should take all necessary measures to secure observance of international rules and standards by ships entitled to fly its flag and by entities and persons under its jurisdiction so as to ensure compliance with its international obligations. Such measures should include, inter alia:

.1 prohibiting ships entitled to fly its flag from sailing until such ships can proceed to sea in compliance with the requirements of international rules and standards;

.2 the periodic inspection of ships entitled to fly its flag to verify that the actual condition of the ship and its crew is in conformity with the certificates it carries;

.3 the surveyor to ensure, during the periodic inspection referred to in subparagraph .2, that seafarers assigned to the ships are familiar with:

.1 their specific duties; and

.2 ship arrangements, installations, equipment and procedures;

.4 ensuring that the ship's complement, as a whole, can effectively coordinate activities in an emergency situation and in the performance of functions vital to safety or to the prevention or mitigation of pollution;

.5 providing, in national laws and regulations, for penalties of adequate severity to discourage violation of international rules and standards by ships entitled to fly its flag;

.6 instituting proceedings, after an investigation has been conducted, against ships entitled to fly its flag, which have violated international rules and standards, irrespective of where the violation has occurred;

.7 providing, in national laws and regulations, for penalties of adequate severity to discourage violations of international rules and standards by individuals issued with certificates or endorsements under its authority; and

.8 instituting proceedings, after an investigation has been conducted, against individuals holding certificates or endorsements who have violated international rules and standards, irrespective of where the violation has occurred.

23 A flag State should develop and implement a control and monitoring programme, as appropriate, in order to:

.1 provide for prompt and thorough casualty investigations, with reporting to the Organization as appropriate;

.2 provide for the collection of statistical data, so that trend analyses can be conducted to identify problem areas; and

.3 provide for a timely response to deficiencies and alleged pollution incidents reported by port or coastal States.

24 Furthermore, the flag State should:

.1 ensure compliance with the applicable international instruments through national legislation;

.2 provide an appropriate number of qualified personnel to implement and enforce the national legislation referred to in subparagraph 15.1, including personnel for performing investigations and surveys;

.3 provide a sufficient number of qualified flag State personnel to investigate incidents where ships entitled to fly its flag have been detained by port States;

.4 provide a sufficient number of qualified flag State personnel to investigate incidents where the validity of a certificate or endorsement or of the competence of individuals holding certificates or endorsements issued under its authority are questioned by port States; and

.5 ensure the training and oversight of the activities of flag State surveyors and investigators.

25 When a flag State is informed that a ship entitled to fly its flag has been detained by a port State, the flag State should oversee that appropriate corrective measures are taken to bring the ship in question into immediate compliance with the applicable international instruments.

26 A flag State, or a recognized organization acting on its behalf, should only issue or endorse an international certificate to a ship after it has determined that the ship meets all applicable requirements.

27 A flag State should only issue an international certificate of competency or endorsement to a person after it has determined that the person meets all applicable requirements.

Flag State surveyors

28 The flag State should define and document the responsibilities, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.

29 Personnel responsible for, or performing surveys, inspections and audits on ships and companies covered by the relevant international mandatory instruments should have as a minimum the following:

.1 appropriate qualifications from a marine or nautical institution and relevant seagoing experience as a certificated ship's officer holding or having held a valid management level certificate of competency and having maintained their technical knowledge of ships and their operation since gaining their certificate of competency; or

.2 a degree or equivalent from a tertiary institution within a relevant field of engineering or science recognized by the flag State; or

.3 accreditation as a surveyor through a formalized training programme that leads to the same standard of surveyor's experience and competency as that required in paragraphs 29.1, 29.2 and 32.

30 Personnel qualified under paragraph 29.1 should have served for a period of not less than three years at sea as an officer in the deck or engine department.

31 Personnel qualified under paragraph 29.2 should have worked in a relevant capacity for at least three years.

32 In addition, such personnel should have appropriate practical and theoretical knowledge of ships, their operation and the provisions of the relevant national and international instruments necessary to perform their duties as flag State surveyors obtained through documented training programmes.

33 Other personnel assisting in the performance of such work should have education, training and supervision commensurate with the tasks they are authorized to perform.

34 Previous relevant experience in the field of expertise is recommended to be considered an advantage; in case of no previous experience, the Administration should provide appropriate field training.

35 The flag State should implement a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorized to undertake.

36 Depending on the function(s) to be performed, the qualifications should encompass:

.1 knowledge of applicable, international and national, rules and regulations for ships, their companies, their crew, their cargo and their operation;

.2 knowledge of the procedures to be applied in survey, certification, control, investigative and oversight functions;

.3 understanding of the goals and objectives of the international and national instruments dealing with maritime safety and protection of the marine environment, and of related programmes;

.4 understanding of the processes both on board and ashore, internal as well as external;

.5 possession of professional competency necessary to perform the given tasks effectively and efficiently;

.6 full safety awareness in all circumstances, also for one's own safety; and

.7 training or experience in the various tasks to be performed and preferably also in the functions to be assessed.

37 The flag State should issue an identification document for the surveyor to carry when performing his/her tasks.

Flag State investigations

38 Marine safety investigations should be conducted by impartial and objective investigators, who are suitably qualified and knowledgeable in matters relating to the casualty. Subject to any agreement on which State or States will be the marine safety investigating State(s), the flag State should provide qualified investigators for this purpose, irrespective of the location of the casualty or incident.

39 The flag State is recommended to ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, in order to assist individual investigators in performing duties outside their normal assignments, the flag State is recommended to ensure ready access to expertise in the following areas, as necessary:

.1 navigation and the Collision Regulations;

.2 flag State regulations on certificates of competency;

.3 causes of marine pollution;

.4 interviewing techniques;

.5 evidence gathering; and

.6 evaluation of the effects of the human element.

40 It is recommended that any accident involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public.

41 Ship casualties should be investigated and reported in accordance with the relevant international instruments, taking into account the Casualty Investigation Code, as may be amended, and guidelines developed by the Organization. The report on the investigation should be forwarded to the Organization together with the flag State's observations, in accordance with the guidelines referred to above.

Evaluation and review

42 A flag State should, on a periodic basis, evaluate its performance with respect to the implementation of administrative processes, procedures and resources necessary to meet its obligations as required by the international instruments to which it is a party.

43 Measures to evaluate the performance of flag States should include, inter alia, port State control detention rates, flag State inspection results, casualty statistics, communication and information processes, annual loss statistics (excluding constructive total losses (CTLs)) and other performance indicators as may be appropriate, in order to determine whether staffing, resources and administrative procedures are adequate to meet its flag State obligations.

44 Areas recommended for regular review may include, inter alia:

.1 fleet loss and accident ratios to identify trends over selected time periods;

.2 the number of verified cases of detained ships in relation to the size of the fleet;

.3 the number of verified cases of incompetence or wrongdoing by individuals holding certificates or endorsements issued under the flag State's authority;

.4 responses to port State deficiency reports or interventions;

.5 investigations into very serious and serious casualties and lessons learned from them;

.6 technical and other resources committed;

.7 results of inspections, surveys and controls of the ships in the fleet;

.8 investigation of occupational accidents;

.9 the number of incidents and violations that occur under the applicable international maritime pollution prevention regulations; and

.10 the number of suspensions or withdrawals of certificates, endorsements, approvals, or similar.

PART 3 – COASTAL STATES

Implementation

45 Coastal States have certain rights and obligations under various international instruments. When exercising their rights under those instruments coastal States incur additional obligations.

46 In order to effectively meet its obligations, a coastal State should:

.1 implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which it is a party; and

.2 assign responsibilities to update and revise any relevant policies adopted, as necessary.

47 A coastal State should ensure that its legislation, guidance and procedures are established for the consistent implementation and verification of its rights, obligations and responsibilities contained in the relevant international instruments to which it is a party.

48 Those rights, obligations and responsibilities may include, inter alia:

.1 radiocommunication services;

.2 meteorological services and warnings;

.3 search and rescue services;

.4 hydrographic services;

.5 ships' routeing;

.6 ship reporting systems;

.7 vessel traffic services; and

.8 aids to navigation.

Enforcement

49 Coastal States should take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

50 A coastal State should consider, develop and implement a control and monitoring programme, as appropriate, in order to:

.1 provide for the allocation of statistical data so that trend analyses can be conducted to identify problem areas;

.2 establish mechanisms for timely response to pollution incidents in its waters; and

.3 cooperate with flag States and/or port States, as appropriate, in investigations of maritime casualties.

Evaluation and review

51 A coastal State should periodically evaluate its performance in respect of exercising its rights and meeting its obligations under the applicable international instruments.

PART 4 – PORT STATES
Implementation

52 Port States have certain rights and obligations under various international instruments. When exercising their rights under those instruments, port States incur additional obligations.

53 Port States can play an integral role in the achievement of maritime safety and environmental protection, including pollution prevention. The role and responsibilities of the port State with respect to maritime safety and environmental protection is derived from a combination of international treaties, conventions and national laws as well as, in some instances, from bilateral and multilateral agreements.

54 In order to effectively meet its obligations, a port State should:

.1 implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which it is a party; and

.2 assign responsibilities to update and revise any relevant policies adopted, as necessary.

55 A port State should ensure that its legislation, guidance and procedures are established for the consistent implementation and verification of its rights, obligations and responsibilities contained in the relevant international instruments to which it is a party.

56 Those rights, obligations and responsibilities may include, inter alia:

.1 provision of appropriate reception facilities or capability to accept all waste streams regulated under the instruments of the Organization;

.2 port State control; and

.3 keeping a register of fuel oil suppliers.

Enforcement

57 Port States should take all necessary measures to ensure their observance of international rules when exercising their rights and fulfilling their obligations.

58 Several international maritime instruments on safety and maritime pollution prevention contain specific provisions that permit port State control.

59 Also, a number of those instruments obligate port States to treat non-parties to those conventions no more favourably than those that are parties. This means that port States should impose the conditions of those instruments on parties, as well as on non-parties.

60 When exercising its right to carry out port State control, a port State should establish processes to administer a port State control programme consistent with the relevant resolution adopted by the Organization[7].

61 Port State control should be carried out only by authorized and qualified port State control officers in accordance with the relevant procedures adopted by the Organization.

62 Port State control officers and persons assisting them should be free from any commercial, financial, and other pressures and have no commercial interest, either in the port of inspection or in the ships inspected, in ship repair facilities or in any support services in the port or elsewhere, nor should the port State control officers be employed by or undertake work on behalf of recognized organizations or classification societies. Further procedures should be implemented to ensure that persons or organizations external to the port State cannot influence the results of port State inspection and control carried out.

Evaluation and review

63 A port State should periodically evaluate its performance in respect of exercising its rights and meeting its obligations under the applicable instruments of the Organization.

Appendix (B)

INTERNATIONAL MARITIME ORGANIZATION

IMO

A 19/Res.801
15 December 1995
Original: ENGLISH

ASSEMBLY
19th session
Agenda item 10

RESOLUTION A.801(19)
adopted on 23 November 1995

PROVISION OF RADIO SERVICES FOR THE GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

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,

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 terrestrial and space radio services having due regard to the recommendations of the Organization,

RECALLING FURTHER that the Inmarsat system provides for radiocommunication services, including those for distress and safety, utilizing geostationary satellites in the 1.5 and 1.6 GHz band,

NOTING that the COSPAS-SARSAT system provides for the reception of distress alerts on the frequency 406 MHz utilizing polar orbiting satellites,

NOTING ALSO that regulation IV/5 of the 1974 SOLAS Convention requires the following radio services to be provided:

- a radiocommunication service utilizing geostationary satellites in the maritime mobile satellite service,
- a radiocommunication service utilizing polar orbiting satellites in the mobile satellite service,
- the maritime mobile service in the bands between 156 MHz and 174 MHz,
- the maritime mobile service in the bands between 4,000 kHz and 27,500 kHz, and
- the maritime mobile service in the bands 415 kHz to 535 kHz and 1,605 kHz to 4,000 kHz,

NOTING FURTHER that the provision contained in paragraph 5.1.1 of the Annex to the International Convention on Maritime Search and Rescue, 1979, requires that Parties shall ensure that such continuous radio watches as are deemed practicable and necessary are maintained on international distress frequencies,

TAKING INTO ACCOUNT the resolutions of the World Administrative Radio Conference for Mobile Services, 1987, in particular resolution 331(Mob-87) relating to the introduction of provisions for the Global Maritime Distress and Safety System (GMDSS) and the continuation of the existing distress and safety provisions, and resolution 322(Rev.Mob-87) 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 Global Maritime Distress and Safety System (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 GMDSS Conference,

CONSIDERING that the GMDSS will use digital selective calling equipment operating in the MF, HF and VHF bands,

CONSIDERING ALSO that ships should not be required to install equipment intended primarily for ship/shore communication functions when operating in areas where no corresponding shore-based facilities are available,

CONSIDERING FURTHER that it is necessary to provide radio services for transmission and reception of distress and safety communications and that not all coast stations will be obliged to provide for such distress and safety communications,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its sixty-third session,

1. ADOPTS the Recommendation on Provision of Radio Services for the GMDSS, the Criteria for Use when Providing Shore-Based Digital Selective Calling (DSC) Facilities for Use in the GMDSS, the Criteria for Establishing GMDSS Sea Areas, the Criteria for Use when Providing a NAVTEX Service and the Criteria for Use when Providing Inmarsat Shore-Based Facilities for Use in the GMDSS set out respectively in Annexes 1, 2, 3, 4 and 5 to the present resolution;

2. RECOMMENDS that Governments undertake, as a matter of urgency, a review of the need to provide shore-based facilities to support the GMDSS and to make available, either individually or in co-operation with other Governments, adequate shore-based facilities for terrestrial and space radio services deemed practicable and necessary;

3. URGES Governments to provide, either individually or in co-operation with other Governments, the radio services deemed practicable and necessary for the proper operation of the GMDSS;

4. INVITES Governments and organizations concerned to inform the Secretary-General of radio facilities to be provided in support of the GMDSS in response to this resolution;

5. REQUESTS the Maritime Safety Committee to keep this resolution under review and to adopt amendments thereto, as necessary;

6. REVOKES resolution A.704(17).

ANNEX 1

RECOMMENDATION ON PROVISION OF RADIO SERVICES FOR THE GMDSS

1 Governments should establish such coast stations, individually or in co-operation with other Governments, as are needed to designate a sea area or areas A1 or A2, or both, off their coasts. Each sea area should be established in accordance with the criteria for establishing GMDSS areas recommended in Annex 3.

2 Areas not defined by Governments as sea areas A1 or A2 will, as appropriate, be designated as sea areas A3 or A4 in accordance with regulations IV/2.14 and IV/2.15 of the 1974 SOLAS Convention, as amended in 1988.

3 Each Government should submit to the Organization information on the sea area or sea areas A1, A2 and A3, NAVTEX and/or international SafetyNET service areas it has established for the GMDSS and on any changes which may affect the sea area or areas it has so defined.

4 Governments, taking into account Annex 2, should, as appropriate, make provision for radiocommunications in each sea area A1 or A2 they have defined and, in addition, Governments are invited to provide for radiocommunications in sea areas A3 or A4, as appropriate, for the purposes of:

.1 reception of ship-to-shore distress alerting; in particular, facilities for receiving distress alerts on the frequency 406 MHz are urgently needed in the southern hemisphere;

.2 transmission of shore-to-ship distress alerting;

.3 transmission and reception of search and rescue co-ordinating communications;

.4 transmission and reception of navigational and meteorological warnings and urgent information; and

.5 transmission and reception of general radiocommunications.

ANNEX 2

CRITERIA FOR USE WHEN PROVIDING SHORE-BASED DIGITAL SELECTIVE CALLING (DSC) FACILITIES FOR USE IN THE GMDSS

1 Governments desiring to provide an HF coast station facility for use in the GMDSS should notify the Organization of their intention so that the Organization can maintain and circulate a complete list of stations providing HF DSC distress watch. Governments should ensure that such shore-based HF DSC facilities are provided in accordance with the criteria contained in Appendix 1.

2 Governments, individually or in co-operation with other Governments within a specific SAR region, desiring to provide MF coast station DSC facilities serving, either wholly or in part, a particular sea area A2, 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 for Establishing GMDSS Sea Areas contained in Annex 3. Governments should ensure that shore-based MF coast station DSC facilities providing part of this sea area A2 coverage, are provided in accordance with appendix 2.

3 Governments, individually or in co-operation with other Governments within a specific SAR region, desiring to provide VHF coast station DSC facilities serving, either wholly or in part, a particular sea area A1, 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 contained in Annex 3. Governments should ensure that shore-based VHF coast station DSC facilities providing part of this sea area A1 coverage, are provided in accordance with Appendix 3.

4 The Organization should maintain a master plan of all sea areas covered by MF and VHF coast station DSC facilities and should periodically circulate an updated copy of the description of such sea areas to Governments.

APPENDIX 1

1 BASIC PRINCIPLES FOR ESTABLISHING HF DSC COAST STATIONS FOR SEA AREAS A3 AND A4

The selection of HF DSC coast stations for sea areas A3 and A4 should be based on the following principles:

.1 each ocean area requiring HF guard should have a minimum of two stations to provide the required HF cover;

.2 where practicable, stations should be selected on opposite sides of an ocean area; and

.3 in ocean areas of high traffic density, e.g. the North Atlantic, more than two stations should be provided.

2 CRITERIA FOR THE SELECTION OF HF DSC STATIONS

Stations participating in HF DSC watchkeeping in the GMDSS should:

.1 be affiliated to an RCC and have reliable communications by telephone and telex;

.2 have long-range HF communication capability in all HF bands;

.3 monitor all HF DSC distress frequencies in order to avoid the multiplication of communications links between RCCs which would be required if several stations divided the watchkeeping on different frequencies;

.4 provide as complete a coverage of their ocean area as possible;

.5 be in continuous operation; and

.6 be able to relay communications under a common procedure.

3 AVAILABILITY OF PARTICIPATING HF STATIONS

The minimum number of coast stations indicated in 1.1 for any given ocean area may need to be adjusted in future in order to:

.1 provide full back-up in the event of operational failure; and

.2 confirm full HF coverage as a result of future tests.

APPENDIX 2

1 BASIC PRINCIPLES FOR ESTABLISHING SEA AREA A2

The selection of MF DSC coast stations for sea area A2 should be based on the following principles:

.1 each sea area designated as A2 requires a continuous MF guard on the distress frequencies and a sufficient number of coast stations to provide MF coverage in the coastal area of the Government concerned; and

.2 in certain areas, several Governments may collectively provide complete coverage (e.g., the North Sea).

2 CRITERIA FOR PROVISION OF MF DSC STATIONS

Stations participating in MF DSC watchkeeping in the GMDSS should:

.1 be affiliated to an RCC and have reliable communications by telephone and telex;

.2 have medium-range MF capability;

.3 provide as complete a coverage of their immediate sea area as possible; and

.4 be in continuous operation.

APPENDIX 3

1 BASIC PRINCIPLES FOR ESTABLISHING SEA AREA A1

The selection of VHF DSC coast stations for sea area A1 should be based on the following principles:

.1 each sea area designated as A1 requires a continuous VHF guard and should have the minimum number of stations necessary to provide VHF coverage in the coastal area of the Government concerned; and

.2 in certain areas, several Governments may collectively provide complete coverage along their coasts (e.g. the North Sea).

2 CRITERIA FOR THE PROVISION OF VHF DSC STATIONS

Stations participating in VHF DSC watchkeeping in the GMDSS should:

.1 be affiliated to an RCC and have reliable communications by telephone and telex;

.2 have short-range VHF capability;

.3 provide as complete a coverage of their immediate sea area as possible; and

.4 be in continuous operation.

ANNEX 3

CRITERIA FOR ESTABLISHING GMDSS SEA AREAS

1 INTRODUCTION

It is intended that Governments should use the following criteria as guidance when determining the four mutually exclusive sea areas off their coasts, which are defined in regulations IV/2.12, IV/2.13, IV/2.14 and IV/2.15 of the 1974 SOLAS Convention, as amended in 1988.

2 SEA AREA A1

2.1 General

The communication range of stations operating in the maritime mobile VHF band is likely to be limited by propagation factors rather than lack of radiated power.

2.2 Guidance criteria

Sea area A1 is that sea area which is within a circle of radius A nautical miles over which the radio propagation path lies substantially over water. The radius A is equal to the transmission distance between a ship's VHF antenna at a height of 4 m above sea level and the antenna of the VHF coast station which lies at the centre of the circle.

2.3 Determination of radius A

2.3.1 The following formula should be used to calculate the range A in nautical miles:

$$A = 2.5\,(\sqrt{H\ (\text{in metres})} + \sqrt{h\ (\text{in metres})})$$

H is the height of the coast station VHF receiving antenna and h is the height of the ship's transmitting antenna which is assumed to be 4 m.

2.3.2 The following table gives the range in nautical miles (nm) for typical values of H:

h \ H	50 m	100 m
4 m	23 nm	30 nm

2.3.3 The formula given above applies to line-of-sight cases but is not considered adequate for cases where both antennae are at a low level. The VHF range in sea area A1 should be verified by field strength measurements.

3 SEA AREA A2

3.1 General

3.1.1 Consideration of the reception of radio signals in the 2 MHz band indicates that the range is likely to be limited by propagation conditions and atmospheric noise, which are affected by variations in geographical position and time of day, as well as radiated power.

3.1.2 The theoretical distance to be expected from ground wave propagation can be determined by reference to the "Ground-wave propagation curves: Sea Water" in Recommendation ITU-R PN.368-7, adjusted as necessary to take account of the actual radiated field strength from the transmitting antenna and the minimum field strength necessary for the proper operation of a receiver conforming with resolution A.804(19).

3.1.3 The determination of the minimum signal level required for satisfactory radio reception in the absence of other unwanted signals necessitates taking account of the noise with which the wanted signal must compete. ITU-R Report 322 gives the world distribution of values of noise level and of other noise parameters and shows the method of using these in the evaluation of the probable performance of a radio circuit.

3.2 Guidance criteria

Sea area A2 is that sea area which is within a circle of radius B nautical miles over which the propagation path lies substantially over water and which is not part of any sea area A1, the centre of the circle being the position of the coast station receiving antenna.

3.3 Determination of radius B

The radius B may be determined for each coast station by reference to Recommendation ITU-R PN.368-7 and ITU-R Report 322 for the performance of a single sideband (J3E) system under the following conditions:

Frequency	-	2,182 kHz
Bandwidth	-	3 kHz
Propagation	-	ground wave
Time of day	-	*
Season	-	*
Ship's transmitter power (PEP)	-	60 W**
Ship's antenna efficiency	-	25%
S/N (RF)	-	9 dB (voice)
Mean transmitter power	-	8 dB below peak power
Fading margin	-	3 dB

The range of sea area A2 should be verified by field strength measurements.

---

*Administrations should determine time periods and seasons appropriate to their geographic area based on prevailing noise level.

**See footnote to regulation IV/16(c)(i) of the 1981 amendments to the 1974 SOLAS Convention.

4 AREA A3

Guidance criteria

Sea area A3 is that sea area of the world not being part of any sea area A1 or A2 within which the elevation angle of an Inmarsat satellite is 5° or more.

5 AREA A4

Guidance criteria

Sea area A4 is that sea area of the world not being part of any seas area A1, A2 or A3.

ANNEX 4

CRITERIA FOR USE WHEN PROVIDING A NAVTEX SERVICE

1 There are two basic areas which must be defined when establishing a NAVTEX service. They are:

Coverage area: An area defined by an arc of a circle having a radius from the transmitter calculated according to the method and criteria given in this Annex.

Service area: A unique and precisely defined sea area, wholly contained within the coverage area, for which MSI is provided from a particular NAVTEX transmitter. It is normally defined by a line which takes full account of local propagation conditions and the character and volume of information and maritime traffic patterns in the region.

2 Governments desiring to provide a NAVTEX service should use the following criteria for calculating the coverage area of the NAVTEX transmitter they intend to install, in order to:

- determine the most appropriate location for NAVTEX stations having regard to existing or planned stations;
- avoid interference with existing or planned NAVTEX stations; and
- establish a service area for promulgation to seafarers.

3 The ground-wave coverage may be determined for each coast station by reference to Recommendation ITU-R PN.368-7 and ITU-R Report 322 for the performance of a system under the following conditions:

Frequency	-	518 kHz
Bandwidth	-	500 Hz
Propagation	-	ground wave
Time of day	-	[1]
Season	-	[1]
Transmitter power	-	[2]
Antenna efficiency	-	[2]
RF S/N in 500 Hz band width	-	8 dB[3]
Percentage of time	-	90

4 Full coverage of NAVTEX service area should be verified by field strength measurements.

---

[1]Administrations should determine time periods in accordance with NAVTEX time transmission table (NAVTEX Manual, figure 3) and seasons appropriate to their geographic area based on prevailing noise level.

[2]The range of a NAVTEX transmitter depends on the transmitter power and local propagation conditions. The actual range achieved should be adjusted to the minimum required for adequate reception in the NAVTEX area served, taking into account the needs of ships approaching from other areas. Experience has indicated that the required range of 250 to 400 nautical miles (nm) can generally be attained by transmitter power in the range between 100 and 1,000 W during daylight with a 60% reduction at night.

[3]Bit error rate 1×10^{-2}.

ANNEX 5

CRITERIA FOR USE WHEN PROVIDING INMARSAT SHORE-BASED FACILITIES FOR USE IN THE GMDSS

1 Governments desiring to provide an Inmarsat coast earth station facility for use in the GMDSS should notify the Organization of their intention so that the Organization can maintain and circulate a complete list of stations providing distress watch. Governments should ensure that such shore-based facilities are provided in accordance with the criteria contained in appendix.

2 Governments, individually or in co-operation with other Governments within a specific SAR region, desiring to provide Inmarsat coast earth station facilities serving, either wholly or in part, particular sea areas, 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 for Establishing GMDSS Sea Areas contained in Annex 3 to the present resolution.

3 The Organization should maintain in the GMDSS Master Plan details of all sea areas covered by Inmarsat coast earth station facilities and should periodically circulate an updated copy of the description of these sea areas to Governments.

4 Governments having coast earth stations participating in the GMDSS should ensure that those stations conform with these criteria specified in 2 of the appendix to this Annex and ensure that only those stations are listed in the GMDSS Master Plan.

APPENDIX

1 BASIC PRINCIPLES FOR ESTABLISHING INMARSAT COAST EARTH STATIONS FOR GMDSS SERVICES

1.1 The selection of Inmarsat coast earth stations for GMDSS services should be based on the following principle:

each ocean area requiring guard should have a minimum of two coast earth stations to provide the required cover for each system.

1.2 The minimum number of coast earth stations indicated in 1.1 for any given ocean area may need to be adjusted in future in order to provide full back-up in the event of operational failure.

2 CRITERIA FOR INMARSAT COAST EARTH STATIONS

2.1 Inmarsat coast earth stations participating in the GMDSS should:

.1 meet the Inmarsat Technical Requirements confirmed by Inmarsat type acceptance and commissioning tests;

.2 operate in compliance with the Inmarsat system operating procedures (SOP) for distress alerting and distress communications;

.3 have a registered associated RCC and have reliable communications by telephone, telex, or other means;

.4 be in continuous operation; and

.5 support the following GMDSS communications functions:

.5.1 ship-to-RCC distress alerting preferably by a dedicated link;

.5.2 RCC-to-ship(s) distress alert relay preferably by a dedicated link;

.5.3 RCC-to-RCC co-ordinating communications by using SES terminals;

.5.4 transmit maritime safety information (Inmarsat-C only); and

.5.5 receiving maritime safety information.

2.2 Stations with store-and-forward systems should:

.1 make an initial attempt to deliver a ship-to-shore or shore-to-ship message within 60 seconds for any distress alert or traffic, and 10 minutes for all other safety messages, from the time the receiving station receives the message;

.2 generate the notification of non-delivery immediately once the message is considered non-deliverable; and

.3 activate an aural/visual alarm to alert a designated responsible person if the distress traffic cannot be forwarded within the criteria of paragraph 2.2.1.

2.3 Stations with circuit switching systems should immediately attempt to deliver a ship-to-shore or shore-to-ship distress alert or traffic.

2.4 Stations should:

.1 be capable of recognizing distress alerts in the ship-to-shore direction;

.2 be capable of recognizing the following categories of priorities in both the ship-to-shore and shore*-to-ship direction:

Maritime distress,

All other maritime (urgency, safety and routine); and

.3 ensure the avoidance of degradation of, or obstructions to, urgency and safety maritime communications by employing four levels of priority in the shore-to-ship and ship-to-shore directions, by differentiating non-maritime from maritime communications or by other means established by Inmarsat.

---

*Registered GMDSS service provider.

Appendix (C)

INTERNATIONAL MARITIME
ORGANIZATION

A 15/Res.617
4 January 1988
Original: ENGLISH

ASSEMBLY - 15th session
Agenda item 12

IMO

RESOLUTION A.617(15)

adopted on 19 November 1987

IMPLEMENTATION OF THE NAVTEX SYSTEM AS A COMPONENT OF THE WORLD-WIDE NAVIGATIONAL 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,

RECALLING ALSO resolution A.419(XI) by which it established the World-Wide Navigational Warning Service,

RECALLING ADDITIONALLY resolution A.420(XI) concerning development of the maritime distress and safety system,

RECALLING FURTHER resolution A.525(13) by which it adopted performance standards for narrow-band direct-printing telegraph equipment for the reception of navigational and meteorological warnings and urgent information to ships,

BEARING IN MIND the decisions of the XIth and XIIth International Hydrographic Conference,

BEARING IN MIND ALSO Recommendation 540-1 of the International Radio Consultative Committee (CCIR) of ITU,

BEARING IN MIND FURTHER that the World Administrative Radio Conference for the Mobile Services, 1987, allocated the frequency 518 kHz for the International NAVTEX system, as well as the frequencies 490 kHz and 4209.5 kHz for other NAVTEX-type systems;

NOTING that a number of countries are currently providing a NAVTEX service to ships operating in coastal waters,

NOTING ALSO that the Maritime Safety Committee has identified functional requirements and draft carriage requirements for the maritime distress and safety system which include the use of the NAVTEX system,

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its fiftieth, firty-first and fifty-second sessions,

1. ADOPTS the automated direct-printing telegraph system for promulgation of navigational and meteorological warnings and urgent information to ships (NAVTEX) as a component of the World-Wide Navigational Warning Service on the basis of the Recommendation set out in the Annex to the present resolution;

2. INVITES Member Governments to commence NAVTEX broadcasts as soon as practicable, in accordance with resolution A.420(XI) and the present resolution, to serve those coastal areas where the safety of navigation warrants such a service;

3. ALSO INVITES Member Governments wishing to establish, augment or alter any NAVTEX service to forward all relevant information to the Organization;

4. FURTHER INVITES Member Governments to encourage their ships to be fitted as soon as practicable with NAVTEX equipment which conforms to performance standards not inferior to those specified in resolution A.525(13);

5. AUTHORIZES the Maritime Safety Committee to agree to such departures from the principles and standards set out in the Recommendation annexed to the present resolution as it may deem necessary in individual cases to serve the interests of safety of navigation;

6. REQUESTS the Maritime Safety Committee to keep the Recommendation under review in the light of experience gained in its application and to report as necessary to the Assembly.

ANNEX

RECOMMENDATION ON THE ESTABLISHMENT AND OPERATION OF NAVTEX SERVICES 1/

1 INTRODUCTION

1.1 NAVTEX provides ships with navigational and meteorological warnings and urgent information by automatic print-outs from a dedicated receiver. Figure 1 illustrates the operation and the typical service.

1.2 NAVTEX is a component of the World-Wide Navigational Warning Service (WWNWS) adopted by Assembly resolution A.419(XI) and a requirement of the Global Maritime Distress and Safety System (GMDSS).

1.3 Details of existing NAVTEX services are published periodically in national publications and in volume II of the ITU List of Radio Determination and Special Service Stations.

2 PRINCIPAL FEATURES OF NAVTEX

2.1 The operational and technical characteristics of the system are given in CCIR Recommendation 540-1. Performance standards for shipborne narrow-band direct-printing equipment (NAVTEX) are prescribed in Assembly resolution A.525(13).

2.2 The principal features are as follows:

.1 The service uses a single frequency (518 kHz) 2/ on which coast stations transmit information in English on a time-sharing basis to prevent mutual interference. All necessary information is contained in each transmission.

1/ Unless stated otherwise, NAVTEX means an international system operating on the frequency 518 kHz.

2/ The World Administrative Radio Conference for the Mobile Services, 1987, allocated the frequencies 490 kHz and 4209.5 kHz for use in NAVTEX-type systems.

.2 The power of each coast station transmitter is regulated so as to avoid the possibility of interference between coast stations.

.3 Dedicated NAVTEX receivers are used which have the ability to select messages to be printed, according to a technical code ($B_1B_2B_3B_4$) which appears in the preamble of each message, and to reject messages other than certain essential classes of safety information which have already been received.

.4 In order to ensure that ships using NAVTEX always receive the most vital information, receivers are unable to reject navigational warnings, meteorological warnings, search and rescue information and certain special warnings.

.5 NAVTEX co-ordinators exercise control of messages transmitted by coast stations according to the information contained in each message and the geographical cover required. A user may thus choose to accept messages either from the single coast station transmitter which serves the sea area in which the ship is sailing, or from a number of coast station transmitters, as appropriate.

THE NAVTEX CONCEPT

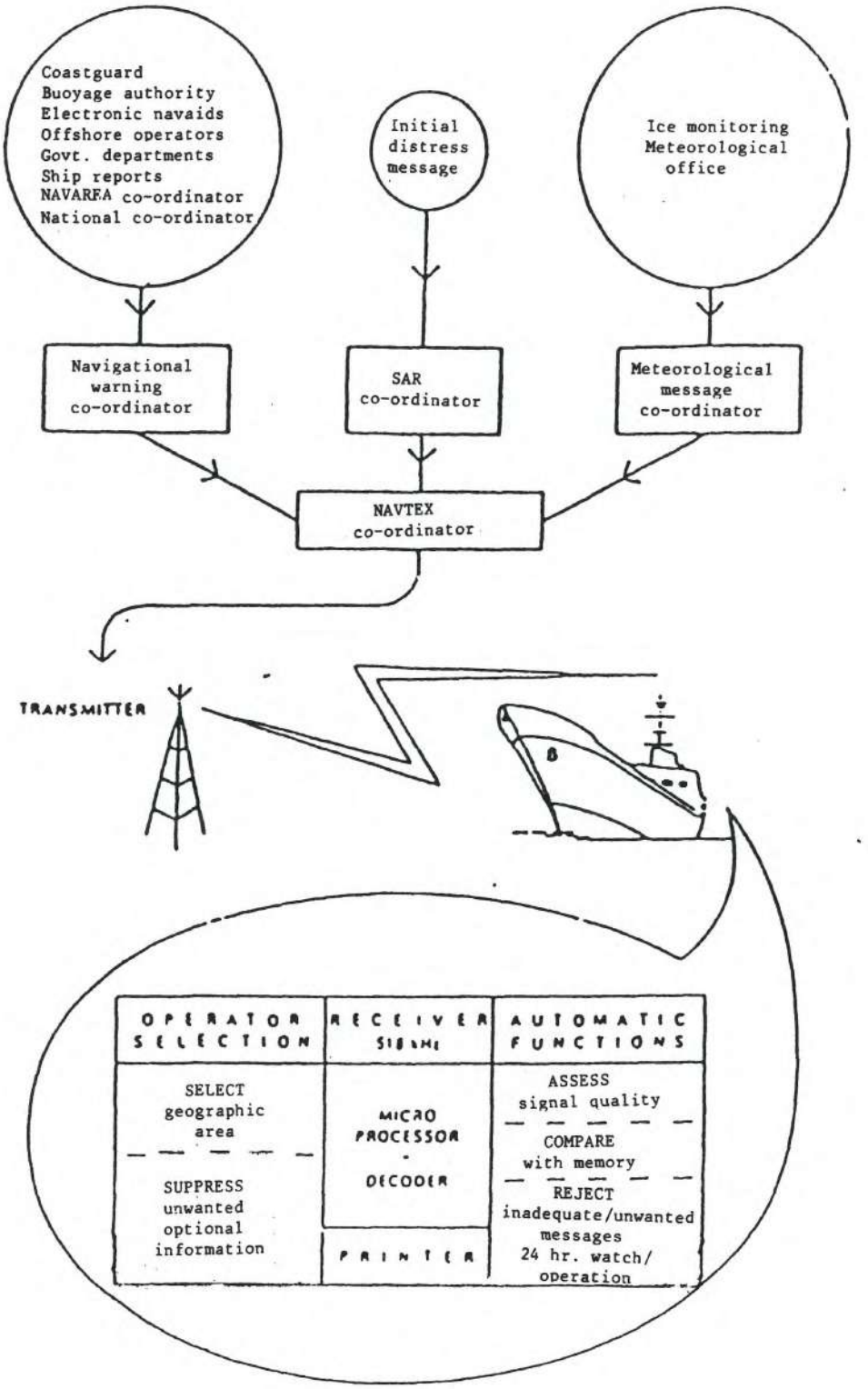


Figure 1

3 THE TRANSMITTER IDENTIFICATION CHARACTER (B_1)

3.1 The transmitter identification character (B_1) is a single character identifying the transmitter coverage area and broadcasts which are to be accepted by the receiver or are to be rejected.

3.2 In order to avoid erroneous reception of transmissions from two coast stations having the same B_1 character, it is necessary to ensure that such coast stations have a wide geographical separation. This will be achieved by allocating B_1 characters in accordance with the basic scheme for allocation of transmitter identification characters by the Organization given in figure 2. Figure 2 shows how B_1 characters will be allocated in alphabetical sequence in each NAVAREA world-wide.

3.3 NAVTEX transmissions may be adjusted to provide a range of about 250 to 400 nautical miles. The minimum distance between two transmitters with the same B_1 identifier must be sufficient to ensure that shipborne NAVTEX equipment cannot receive from both transmitters at the same time. Close co-ordination between States in adjacent NAVAREAS will be necessary to achieve this separation. For this reason, national Administrations should request the advice of the Organization at an early stage in the planning of a new NAVTEX service. All proposals for B_1 allocations should be approved by the Organization before implementation.

NAVAREAS of the World-Wide Navigational Warning Service
The basic scheme for allocation of transmitter identification characters by the Organization

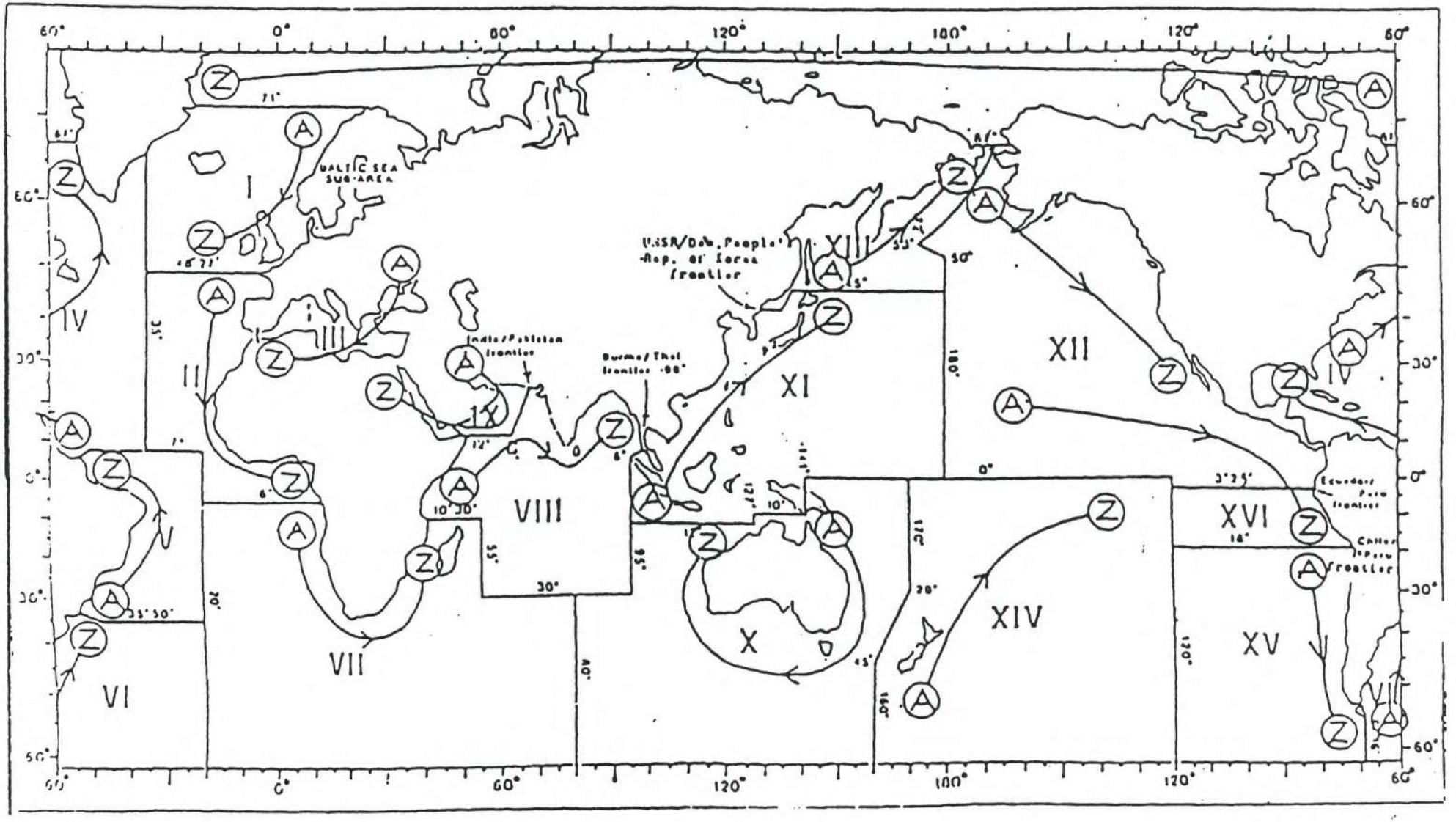


Figure 2

4 ALLOCATION OF TRANSMISSION TIMES

4.1 In order to ensure the least possible interference between transmitting stations, the transmission schedules must take account of the relative geographical location of all NAVTEX coast stations within range.

4.2 Early co-ordination of transmission schedules will therefore be important when planning NAVTEX services.

4.3 Figure 3 illustrates the scheme for allocation of transmission schedules by the Organization. The scheme will be used to evaluate and recommend time schedules for each coast station transmitter of a proposed new service. Figure 3 shows the scheduled times (UTC) of a NAVAREA using four groups of transmitters. Each group has a potential capacity of 6 transmitters, each with 10 min transmission time allocated in every 4 h.

4.4 Only in exceptional circumstances would such a large number of coast stations be approved that a transmission time schedule of 10 min was necessary. Normally a longer transmission time would be available. However, the frequency should remain unused for a high percentage of the time to permit the immediate broadcast of vital information, e.g. search and rescue information, gale warnings, etc.

4.5 Proposals for allocation of time schedules to a coast station should be submitted to the Organization for approval.

Scheme for allocation of transmission schedules by the Organization

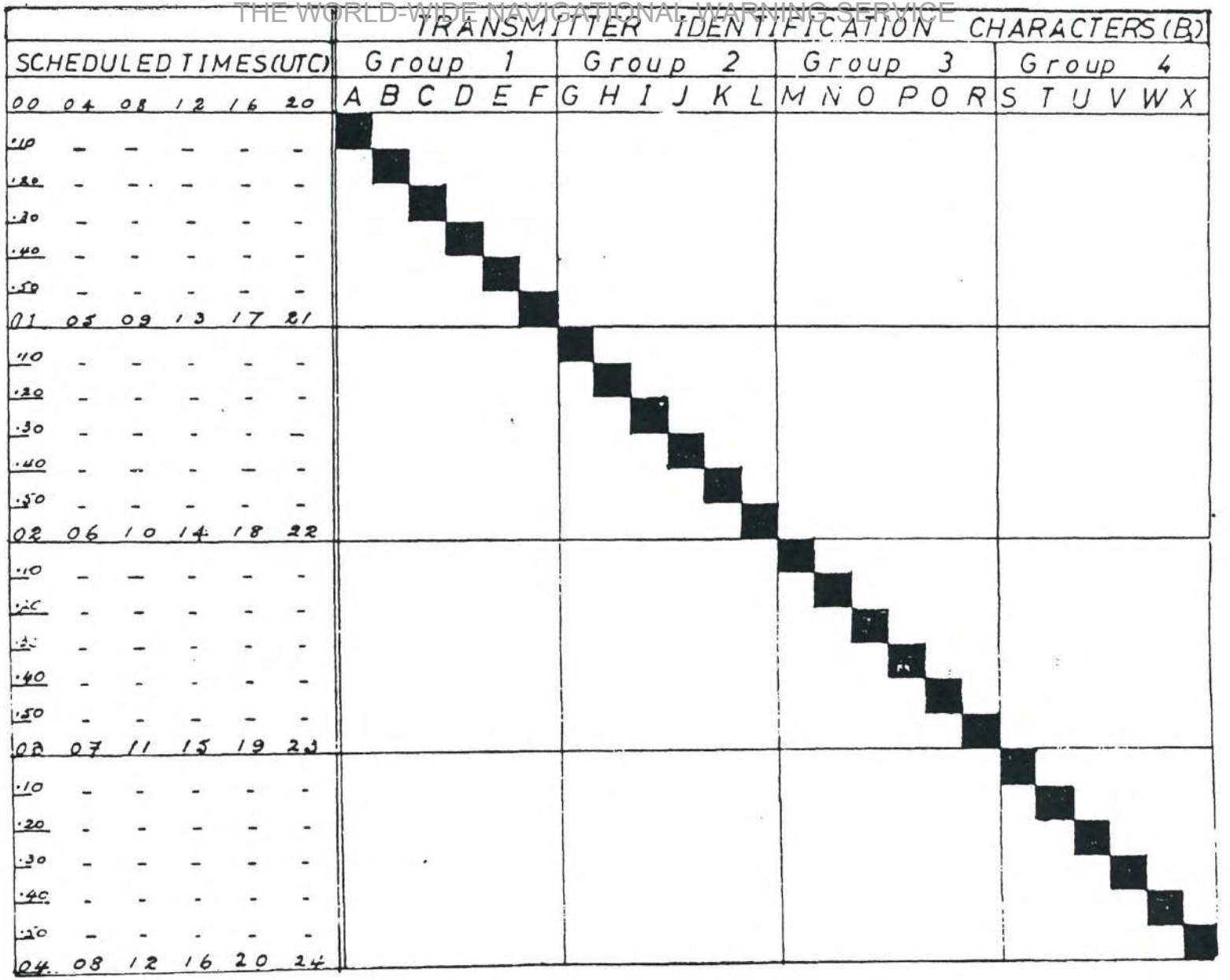


Figure 3

5 SUBJECT INDICATOR CHARACTER (B_2)

5.1 Information is grouped by subjects for NAVTEX broadcasts. Each subject is allocated a unique B_2 character indicating the type of message to be transmitted.

5.2 The B_2 character can be used to reject messages of a type which the ship does not require. The B_2 character is also used to identify messages which, because of their importance, may not be rejected (see paragraph 2.2.3).

5.3 The B_2 characters prescribed in CCIR Recommendation 540-1 should be used.

5.4 Special service B_2 characters may be allocated by the Organization for trials, for example for use as an optional means to provide a national language broadcast. National authorities should obtain the agreement of the Organization to all proposals for the use of special service B_2 characters. Such proposals should meet the following criteria:

.1 The full English language service must remain unaffected.

.2 Special service broadcasts should be transmitted only when time allows and with due regard to the necessity for the NAVTEX frequency to remain unused for a high percentage of the time (paragraph 4.4).

.3 Special service broadcasts should be prepared exclusively for the intended purpose.

5.5 The Organization should be consulted whenever it is necessary to allocate new B_2 characters.

6 MESSAGE NUMBERING (B_3B_4)

6.1 Each NAVTEX message within a subject group (B_2) should be allocated a serial number (B_3B_4) between 01 and 99. This number will not necessarily relate to the series numbering in other radio navigational warning systems. On reaching 99, serial numbers should re-commence at 01 but avoid the use of serial numbers of messages still in force.

6.2 A shortage of numbers should, where possible, be alleviated by the allocation of messages to other relevant subject groups. It has been found that 99 messages are not always enough for navigational warnings and B_2 = L may be used, when necessary, in addition to B_2 = A for warnings in excess of 99.

6.3 Numbers in each subject group should be allocated by the responsible NAVTEX co-ordinator, i.e. the authority responsible for the selection of information to be broadcast by each NAVTEX transmitter. Each co-ordinator may have one or more transmitters under his control.

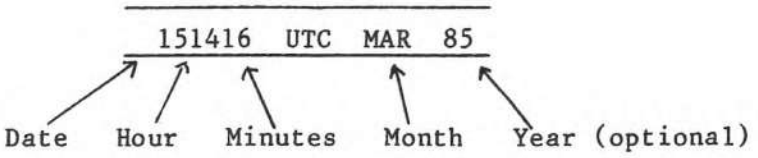
6.4 Certain messages may be allocated the B_3B_4 character "00". Messages carrying this character will always be printed if the broadcast containing such messages is identified to be accepted by the receiver (see paragraph 3.1) and its use should be strictly controlled. Therefore, the number "00" must only be used for vital messages such as an initial distress message. Routine messages and service messages should not be allocated the number 00. It should be borne in mind when considering use of the B_3B_4 "00", that receivers are unable to reject certain classes of vital safety information (i.e. B_2 characters A, B, D and L).

7 MESSAGE FORMAT

7.1 The format of all messages should be in strict accordance with figure 4. This shows the essential elements of the NAVTEX message which influence the operation of the receiver. Great care is required to avoid errors of syntax in the groups "ZCZC", "$B_1B_2B_3B_4$" and 'NNNN' as they will cause receivers to operate incorrectly, which may well result in the loss of a vital message. Transmitting stations should be particularly aware of this when monitoring their own broadcasts.

7.2 Certain formats have been adopted for the textual content of NAVTEX messages. These contribute to the clarity and uniformity of the messages, and should be followed in all cases. They include:

.1 The date, time (UTC) and month of origin may be given at the start of the message when this contributes to the value of the message as follows:

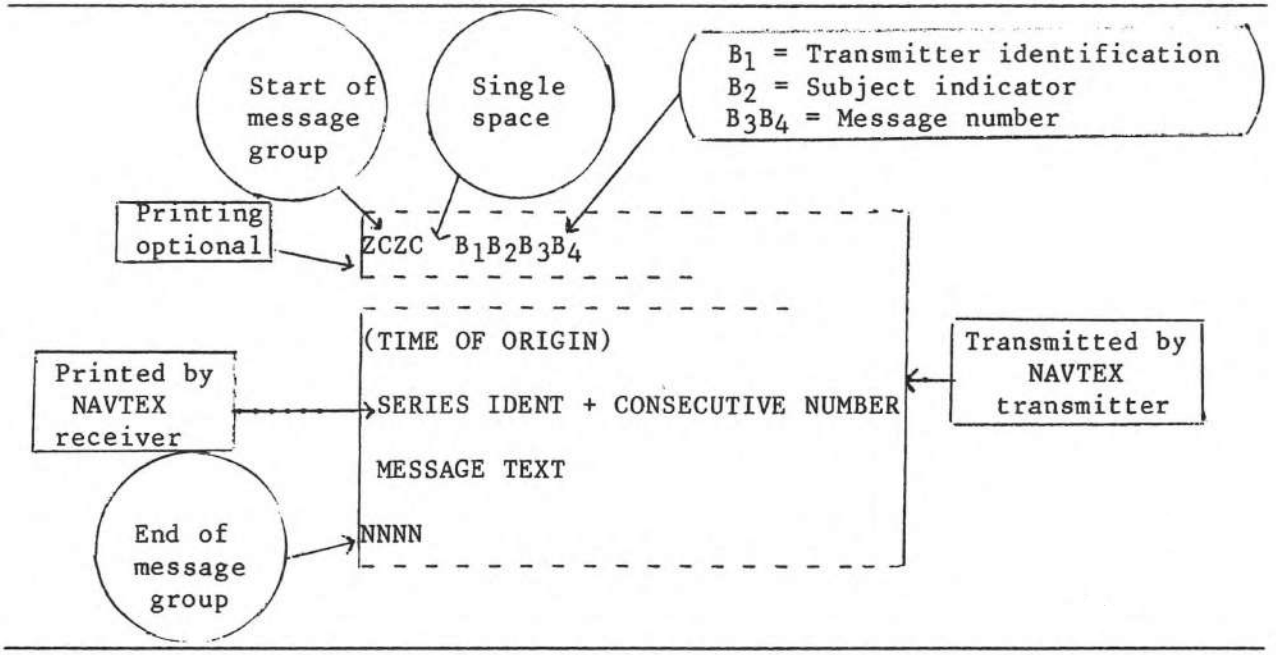


The date, time and month of origin should always be followed immediately by a carriage return/line feed, so that it appears as a separate line at the start of the message text.

.2 The first words of the text should invariably be message series identity and consecutive number. Note that this consecutive number is not the same as the NAVTEX message number (B_3B_4), but identifies the source of the report (e.g. NAVAREA III 274).

.3 It has been found that the clarity of a chain of messages is improved by ensuring that the group 'NNNN' indicating the end of message appears on a separate line.

7.3 Figure 4 illustrates the standard format for NAVTEX messages:



Standard format for NAVTEX messages.

Figure 4

8 INFORMATION CONTROL

8.1 The time-shared nature of NAVTEX broadcasts imposes the need for strict discipline in controlling the information flow of each broadcast. To achieve this it is necessary to co-ordinate the messages in each B_2 subject at each transmitter. In general, all messages should be brief, clear and avoid duplication. Strict adherence to relevant guidelines such as those in Assembly resolution A.419(XI) is recommended, but certain additional operating procedures have also been found necessary:

.1 Messages in each category should be broadcast in REVERSE order of receipt, with the latest being broadcast first.

.2 Cancellation messages should be broadcast ONCE only. The cancelled message should be removed from the broadcast in which the corresponding cancellation message appears and the cancellation message should then be removed from the broadcast.

.3 Navigational warnings

.3.1 Coastal warnings and NAVAREA warnings issued in accordance with Assembly resolution A.419(XI) which would be of concern to ships in the area allocated to the transmitter, should be included in the broadcast.

.3.2 Local warnings, as defined by Assembly resolution A.419(XI), should NOT be broadcast on NAVTEX.

.3.3 Warnings should normally be repeated at every scheduled transmission for as long as they remain in force.

.3.4 NAVTEX co-ordinators should arrange to receive appropriate NAVAREA warnings for inclusion in their broadcasts.

.3.5 Negative tidal surge and tsunami warnings (navigational warnings) should be broadcast 'on receipt' and at subsequent scheduled transmissions.

.4 Meteorological messages

.4.1 Gale warnings are provided by national meteorological authorities. They should be broadcast 'on receipt' and at the next routine schedule only.

.4.2 Weather forecasts should normally be broadcast by NAVTEX twice each day. This service must be carefully co-ordinated where transmitters are geographically close together. It is important that, where practicable, the area addressed by a weather forecast should be similar to the area allocated to the NAVTEX transmitter.

.4.3 Routine ice reports should normally be broadcast once a day.

.4.4 Ice accretion warnings should normally be included in the NAVTEX ice report but when separately issued, treated as a meteorological warning using B_2 = B and transmitted immediately on receipt and at the next routine schedule.

.5 Search and rescue information

.5.1 NAVTEX broadcasts are not suitable for distress traffic. Therefore, only the initial distress message should be relayed to ships on NAVTEX using B_2 = D in order to alert mariners to a distress situation. The use of B_3B_4 = 00 is appropriate for distress messages.

.5.2 Requests for reports of ships overdue etc. should be broadcast as navigational warnings only when they satisfy the requirements of Assembly resolution A.419(XI). They should never be broadcast as B_2 = D messages.

.5.3 A single authority, which will normally be a maritime rescue co-ordination centre (MRCC), should be designated NAVTEX co-ordinator for search and rescue. Coast radio stations should discharge their responsibility for re-transmitting initial distress messages on NAVTEX by passing the message to

the designated SAR co-ordinator for broadcast on NAVTEX. This should not affect a coast radio station's responsibility for re-transmitting initial distress messages on other frequencies.

.6 Pilotage service messages

.6.1 Character B_2 = F messages should only be used for broadcasting temporary alterations to a pilotage service. They may include messages which notify ships of the temporary movement or suspension of a pilotage service owing to weather conditions, etc. The use of B_2 = F is intended for messages providing information to ships approaching a port and should not be used for specific instructions to individual ships or pilots.

.7 Electronic navigational aid degradation

Unique B_2 characters are provided for all the principal types of electronic navigational aids. They should be used to advise mariners of significant degradation of an electronic navigational aid service. Short periods of transmission failure are not generally regarded as significant since, given prudent navigation, they do not impair safety. The following thresholds have been found to be appropriate for the majority of users:

.7.1 DECCA - off air or multipulse failure $>1/2$ h

.7.2 LORAN C - off air >1 h

.7.3 OMEGA - off air >4 h, and polar cap absorption

.7.4 SATNAV - off air >4 h

.8 No messages on hand

This facility may be used by transmitting stations to confirm the correct operation of receivers and transmitters at scheduled times when no messages are on hand for transmitting. In accordance with

the simple philosophy of NAVTEX, the 'Q Code' group QRU should not be transmitted. Instead, the plain language text 'No messages on hand at ..... radio' should invariably be used.

.9 Use of abbreviations should be kept to a minimum and be strictly in accordance with internationally accepted usage.

9 PLANNING A NAVTEX SERVICE

9.1 When planning NAVTEX coverage for a new region, it is most essential to take account of the high level of local and international co-ordination required for the service. The principles which must be borne in mind are as follows:

.1 Although NAVTEX coverage need not be implemented simultaneously over an entire region, it is necessary for the Organization to be provided with a draft regional scheme before any service is commenced. The region concerned will usually be a complete NAVAREA.

.2 The minimum number of coast stations should normally be used to cover a region.

.3 Each coast station should contribute to the overall service in the region in a co-ordinated way, bearing in mind the geographical area covered by other NAVTEX coast stations and the effective co-ordination and control of information to be transmitted.

.4 Each coast station will usually provide all the information for a precisely defined sea area. In establishing a sea area full account should be taken of the character and volume of information needed to be transmitted and trading patterns of shipping in the region.

.5 When limitations of resources affect the rate of establishment of NAVTEX services, every effort should be made first to implement the NAVTEX service in areas of highest shipping density.

.6 The range of a NAVTEX transmitter depends on the transmitted power and local propagation conditions. The actual range achieved should be adjusted to the minimum required for adequate reception in the

NAVTEX area served, taking into account the needs of ships approaching from other areas. Experience has indicated that the required range of 250 to 400 nautical miles can generally be attained by transmitted power in the range between 100 and 1,000 W during daylight with a 60% reduction at night.

.7 After choice of transmitter sites and allocation of service areas the main need for co-ordination lies in the assignment of B_1 characters and time schedules.

.8 The national NAVTEX co-ordinator should make arrangements for a quality control organization in his area which should include both the message originating offices and the NAVTEX transmitting stations. This organization should aim to confirm, on a continuing basis, that:

- Minimum power is used to achieve satisfactory range performance.

- Time schedules are not exceeded.

- The co-ordinated service is operating satisfactorily.

9.2 Guidance on these and the many other factors to be considered when planning NAVTEX services should be obtained at an early stage from the Organization.

10 LOGGING NAVTEX MESSAGES

The reception of weather forecasts or navigational warnings on NAVTEX need not be noted in the radio log. The NAVTEX receiver print-out may replace the log entries required by chapter IV of the 1974 SOLAS Convention.

11 INFORMATION FOR MARINERS AND PUBLICITY

11.1 The widest possible publicity should be given to the establishment of new NAVTEX services. In particular, every opportunity should be given to the electronics industry to participate in any relevant activity at an early stage to ensure that suitable receivers, which would satisfy any obligatory type approvals, are available when the system becomes operational.

11.2 Administrations should ensure that mariners are fully informed of the establishment of a NAVTEX service by inclusion of full details in notices to mariners and radio lists. In addition, full details of the service agreed should be forwarded to the Organization, ITU and other authorities which produce international radio lists.
