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RESOLUTION A.420(XI)

adopted on 15 November 1979

DEVELOPMENT OF THE MARITIME DISTRESS AND SAFETY SYSTEM

THE ASSEMBLY,

RECALLING Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,

RECALLING ALSO resolution A.283(VIII) on the development of the maritime distress system,

RECOGNIZING the need to improve the existing maritime distress and safety system,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its fortieth session,

1. ADOPTS the recommendations contained in the Annex to the present resolution, concerning the maritime distress and safety system and considers these recommendations as the IMCO policy document on the subject;
2. RECOMMENDS Administrations to take as soon as possible whatever action is required for the implementation of the recommended measures, in particular those indicated in paragraph 3 of the Annex to the present resolution;
3. REQUESTS the Maritime Safety Committee to continue its study on this subject and to keep these recommendations under review for adjustment as necessary;
4. FURTHER REQUESTS the Secretary-General to communicate the present resolution to the International Telecommunication Union with the request that action be taken as necessary with a view to implementing the measures recommended in the Annex;
5. REVOKES resolution A.283(VIII).

ANNEX

MARITIME DISTRESS AND SAFETY SYSTEM

CONTENTS

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- II Present system
- III Future system

I GENERAL INTRODUCTION

1 DEFINITION

- 1.1 A maritime distress and safety system is the co-ordinated use of various elements including radio for the purpose of safety of life at sea.
- 1.2 The principal radio elements of the system include:
 - .1 stations participating in the maritime mobile service;
 - .2 frequencies/nodes;
 - .3 equipment;
 - .4 procedures and regulations in force;
 - .5 personnel; and
 - .6 organizations.
- 1.3 Radiocommunications in the system include:
 - .1 alerting;
 - .2 identifying;
 - .3 positioning^{1/};
 - .4 co-ordinating assistance;
 - .5 on-scene communications;
 - .6 locating; and
 - .7 preventative action^{2/}.

^{1/} Defined as the provision of information which will give the geographical location of a ship in distress.

^{2/} The use of radiocommunications to provide information or support for distress and safety purposes, e.g. ship reporting, navigational and meteorological warning broadcasts.

2 GENERAL REQUIREMENTS

- 2.1 The system shall serve the distress radiocommunications requirements of Convention ships. The system will also serve any other craft properly equipped.
- 2.2 The system shall provide for radiocommunications between those which may become involved in a distress incident, and include facilities for direct communications between ships.
- 2.3 The system should comprise facilities for radiocommunications at all times over all distances.
- 2.4 The equipment needed in the system should be reliable, require the minimum amount of maintenance and be easy to operate.
- 2.5 The procedures used should be internationally standardized and it is imperative that shore rescue facilities, coast stations, ship reporting systems, search and rescue organizations and other terminal facilities be established and co-ordinated into a network.
- 2.6 Ultimately the system should include reliable means for automatic alerting and positioning.

II PRESENT SYSTEM

3 PROPOSED IMPROVEMENTS

- 3.1 The present provisions for 500 kHz, 2182 kHz, 156.8 MHz and HF frequencies including 4125 kHz, 6215.5 kHz and 8364 kHz, as well as 121.5 MHz and 243 MHz are the foundation upon which consideration is based. Recommendations for improving existing provisions and recommendations for new provisions are listed below.
- 3.2 The following evolutionary, technically feasible and practical steps should be taken to augment the present system as a matter of urgency:
 - 3.2.1 For the purpose of providing an effective linkage between the 500 kHz and 2182 kHz distress system, Administrations should require that all Convention ships under their jurisdiction compulsorily equipped with radiotelegraph installations be fitted with 2 MHz radiotelephone transmitting and receiving equipment, and be required to keep continuous listening watch on 2182 kHz.

- .2 When outside the normal communication range of 500 kHz, 2182 kHz or 156.8 MHz, ships maintaining HF communications with coast stations should use this alternative means of alerting and communicating with respect to distress incidents, recognizing the availability of 4125 kHz and 6215.5 kHz which are designated as supplementary frequencies to 2182 kHz for distress and safety purposes.
- .3 All Convention ships should be fitted with maritime VHF facilities. Where short-range facilities are required, 156.8 MHz should be used for distress and safety purposes. Ship stations should, whenever practicable, maintain watch on 156.8 MHz.
- .4 Adequate frequencies must be made available in all maritime bands for transmission of urgency and safety messages. In particular in congested areas the transmission of urgency and safety messages by coast stations should be co-ordinated by Administrations concerned and preferably be done by selected coast stations.
- .5 The radiotelephone coast station distress coverage in those regions where it is at present inadequate should be improved.
- .6 The carriage of emergency position-indicating radio beacons (EPIRBs) should be required.
- .7 A selective calling system which meets the requirements of the Radio Regulations should be implemented.
- .8 Administrations should introduce narrow-band direct-printing broadcasts for the purpose of promulgation of navigational and meteorological warnings to shipping. These transmissions should be made for areas and sub-areas as defined in the Resolution on the World-wide Navigational Warning Service (Resolution A.419(XI)).
- .9 Ships and coast stations should in general participate in a ship position-reporting system.
- .10 Equipment performance should be improved. Telecommunication equipment used for safety should be designed, instruction manuals prepared and test equipment provided so as to improve reliability and to facilitate maintenance at sea.
- .11 The training of radio officers, radio operators and radiotelephone operators should be carried out in compliance with the requirements

of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as well as the relevant recommendations adopted by the International Conference on Training and Certification of Seafarers, 1978. For radio officers, the Radiocommunication Operator's General Certificate should be implemented by Administrations.

III FUTURE SYSTEM

4 GENERAL

- 4.1 Even with all the improvements proposed for incorporation in the present system, it will still not be able to fulfil completely all the general requirements of a maritime distress and safety system.
- 4.2 A new system should therefore be established in the future when more effective measures, methods and techniques become available.
- 4.3 Before establishing a new system, extensive evaluation and practical testing must be performed to ensure that all requirements are fulfilled. The future system should be proven more reliable than the present system. Elements from the present system should be incorporated to the extent necessary to achieve the required level of safety for all ships.
- 4.4 Maritime satellite and high frequency communication systems will be important elements of the future system.

5 REQUIREMENTS

- 5.1 The future system should provide reliable means to enable any ship properly equipped in any position at any time to achieve alerting and to be located with minimum delay if a distress situation occurs.
- 5.2 The system should provide for fitting of equipment for automatic distress alerting and the automatic transmission of essential additional information, such as identity of the ship in distress, its position and the nature of the distress case, transmitted in a standard format incorporated in the system.
- 5.3 The system should provide reliable means for communications for search and rescue operations including co-ordinating, assistance and "on-scene" communication.

5.4 The future system will include satellite techniques. There will exist a need for terrestrial communications between ships, between ship and shore, and between ships and aircraft. Terrestrial communication would then still provide, on a mandatory or voluntary basis, the following functions:

- .1 all communications services for ships not equipped for satellite communications;
- .2 for ships fitted with satellite terminals, complementary or supplementary services, such as distress communications in the maritime MF/HF/VHF bands; and
- .3 linkage between ships fitted with satellite terminals and ships fitted for terrestrial communications only.

These factors underscore the need for close integration between satellite and terrestrial communications facilities and systems, aboard ship.

- 5.5 Adequate frequencies must be available in all maritime bands for calling purposes and transmission of urgency and safety messages.
- 5.6 If required to improve system efficiency, ship position-reporting systems should be established, to provide for ships to report their positions by automatic means.
- 5.7 A co-ordinated distress and search and rescue communications network should be provided, with the necessary interconnections among appropriate SAR organizations, such as rescue co-ordination centres, ship reporting centres, terrestrial coast stations and satellite ground stations.
- 5.8 The training of radio officers and radio operators should be further expanded, as appropriate, to ensure continued and adequate operation, maintenance and repairs at sea of the telecommunications and electronic navigation equipment involved in the safety of life at sea.

6 PROPOSED TRANSITIONAL MEASURES

- 6.1 The future system should evolve from the present system by transitional measures. During the transition it will be necessary to review and, possibly, to modify the existing provisions of the 1974 SOLAS Convention.

- 6.2 During the transition to a future system it will be necessary to maintain existing provisions of the 1974 SOLAS Convention and the Radio Regulations to ensure a reliable system for ships only fitted with terrestrial equipment.
- 6.3 The implementation of satellite communications will meet certain requirements for the future system, in particular for ship-to-shore alerting, positioning co-ordination and long-distance search and rescue communications. These satellite communication facilities should be in addition to ship-to-ship alerting and "on-scene" communications, on terrestrial channels.
- 6.4 Operational procedures for the use of a selective calling system for distress and safety functions should be established.
- 6.5 Amortization of existing equipment should be provided to avoid unwarranted obsolescence.