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RECOMMENDATION ON THE DEVELOPMENT OF THE
MARITIME DISTRESS SYSTEM

THE ASSEMBLY,

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

RECOGNIZING the need for improving the existing Maritime Distress System,

HAVING CONSIDERED the Report of the Maritime Safety Committee on its twenty-seventh session,

RESOLVES

- (a) to adopt the Recommendation, shown at Annex to this Resolution, concerning the Maritime Distress System and to consider this Recommendation as the IMCO policy document on the subject,
- (b) to recommend 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 this Resolution,
- (c) to request the Maritime Safety Committee to continue its study on this subject and to keep this Recommendation under review for adjustment, as necessary,
- (d) to communicate the Resolution and its Annex to the International Telecommunication Union, with the request that action be taken as necessary with a view to implementing the measures recommended at Annex.

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ANNEX

MARITIME DISTRESS SYSTEM

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I. GENERAL INTRODUCTION

1. DEFINITION

- 1.1 A maritime distress system is the co-ordinated use of various radio elements for the purpose of safety of life at sea.
- 1.2 The system is designed to serve the distress radiocommunications requirements of Convention ships^{1/}.
The system will also serve any other craft properly equipped.
- 1.3 It provides for radiocommunications at various distances between those which may become involved in a distress incident.
- 1.4 The principal elements of the maritime distress system include:
 - (i) stations participating in the maritime mobile service;
 - (ii) frequencies/nodes;
 - (iii) equipment;
 - (iv) procedures and regulations in force;
 - (v) personnel; and
 - (vi) organizations.

^{1/} In this context "Convention ships" are those fitted with radio equipment in accordance with the provisions of the International Convention for the Safety of Life at Sea, in force.

Radiocommunications in the maritime distress system include:

- (i) alerting;
- (ii) identifying;
- (iii) locating;
- (iv) co-ordinating and expediting assistance; and
- (v) on-scene communications.

2. REQUIREMENTS

- 2.1 The system should comprise facilities for radiocommunications over all distances, of which one - a medium distance facility - should be common to all Convention ships in all areas.
- 2.2 The equipment needed in the system should be as reliable as possible, require minimum amount of maintenance and be easy to operate.
- 2.3 The procedures used should be internationally standardized and it is imperative that shore rescue facilities, coast stations, vessel reporting systems, search and rescue organizations and other terminal facilities be established and co-ordinated into a network.
- 2.4 Ultimately the system should include reliable means for automatic alerting and position indicating.
- 2.5 However, any new system must be proven to be more reliable than the system it is intended to replace.
- 2.6 A future distress system should be evolved as a natural development of the present system.

II. NEAR FUTURE DISTRESS SYSTEM

3. PROPOSED IMPROVEMENTS FOR THE NEAR FUTURE

- 3.1 During the transition to a future distress system it is necessary to maintain existing provisions of the International Convention for the Safety of Life at Sea to ensure a reliable distress system for ships fitted with both

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existing and new equipment. The present provisions for 500 kHz, 2182 kHz, HF and VHF are the foundation upon which consideration is based. In addition to improving these, 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. It is recommended as a matter of urgency that:

- (a) Administrations require that all ships under their jurisdiction compulsorily equipped with radiotelegraph installations be fitted with 2 MHz radiotelephone transmitting and receiving equipment, including watch receivers, as specified in Resolutions A.205(VII) and A.217(VII), for the purpose of providing early and effective linkage between the 500 kHz and 2182 kHz distress systems;
- (b) The frequency 156.8 MHz be designated the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service.^{2/}

It is further recommended that Administrations consider the early implementation of 156.8 MHz for distress and safety purposes, where short-range facilities are required and that ship stations should where practicable, maintain watch on 156.8 MHz for receiving by any appropriate means distress, safety and calling signals, where this can be achieved without prejudice to ships' needs;

- (c) The carriage of emergency position-indicating radio beacons (EPIRBs) operating on 2182 kHz and/or 121.5 MHz and/or 243 MHz be required in accordance with Resolution A.217(VII). Note also Resolution A.91(IV) EPIRBs on very high frequencies should preferably operate on both 121.5 and 243 MHz;

^{2/} Note concerning WARC 1974: It is recommended to Member Governments that specific changes be made in the Radio Regulations noting that the WARC 1974 will be the only opportunity for several years for the maritime mobile service to improve its international status in the Radio Regulations with respect to other radio services.

- (d) the selective calling system which meets the requirements of the Radio Regulations be implemented;
- (e) the use of the high frequency spectrum for safety purposes be encouraged. In addition to the normal means of distress, alerting and communications, vessels maintaining HF communications with coast stations are urged to utilize this alternative means of alerting and communicating with respect to distress incidents, particularly when outside the normal communications range of 500 kHz, 2182 kHz, or 156.8 MHz. In this connexion the attention of Administrations is drawn to Radio Regulation No. 1381;
- (f) equipment performance and reliability 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;
- (g) the training of radio officers and radio operators be expanded. Radio officers and radio operators should be given appropriate training, according to their differing technical backgrounds, in maintenance and repairs at sea of the telecommunications and other electronic navigation equipment involved in the safety of life at sea. In addition, all crew members should be trained in the use of lifeboat and survival craft radio equipment;
- (h) wider participation of vessels and coast stations in vessel position-reporting systems should be further encouraged;
- (i) all Convention ships be fitted with maritime VHF facilities;
- (j) the radiotelephone coast station distress coverage in those regions where it is at present inadequate be improved;
- (k) the measures for improving the effectiveness of 2182 kHz set forth in Resolution A.217(VII) be implemented as far as possible;

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- (1) adequate frequencies must be made available in all maritime bands for calling purposes and the 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, by means of "safety broadcasts".
- 3.3 The proposals constitute an integrated programme to improve the maritime distress system on the basis of the existing and presently anticipated technology and regulatory situation.
- 3.4 Administrations are also urged to put into effect those items that can be accomplished by administrative action.

III. DISTANT FUTURE DISTRESS SYSTEM

4. GENERAL

- 4.1 A distress system in a distant future should evolve as a natural development of the near future distress system and should include improved telecommunications facilities as they become available.
- 4.2 Elements of the near future distress system should be augmented and, if necessary, be replaced or simplified when more effective measures, methods or techniques become available. These should however be subjected to adequate practical testing to ensure that they meet all the requirements.
- 4.3 A maritime satellite system will be an important resource of the distant future distress system. While the primary role of satellite communications will be public correspondence, the fact that such communications exist will improve safety.

5. REQUIREMENTS

- 5.1 (a) Even with the advent of satellite and automatic communications, the need will remain for some terrestrial and conventional methods of communications between ships, from ship-to-shore, and between ships and aircraft.

Conventional terrestrial communications would then still provide, on a mandatory or voluntary basis, the following functions for the maritime service:

- (i) For non-satellite equipped ships - all communications services;
- (ii) Complementary or supplementary services, such as short-range communications and distress in the maritime 500 kHz, 2 MHz and VHF bands, and as necessary, long-range communications via HF bands, during the transition period and for an undetermined period thereafter;
- (iii) Linkage between satellite - equipped ships and non-satellite - equipped vessels.

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

- (b) The system should provide for a ship-to-shore and shore-to-ship relaying capability by means of satellites as such facilities become available, especially for regions outside the MF coverage from land.
- 5.2 The system should also provide for the possible future fitting of automatic distress alerting, followed by the automatic transmission of essential additional information, such as identity of the vessel in distress, its position and the nature of the distress case, preferably transmitted in a standard format.
- 5.3 The system should further provide for supplementary ship-to-shore, shore-to-ship and ship-to-ship channels for the purpose of locating, co-ordinating and expediting assistance, including communications for search and rescue and "on-scene" operations.
- 5.4 Adequate frequencies must be available in all maritime bands for calling purposes and the transmission of urgency and safety messages with a continuing need for co-ordination in congested areas and in satellite systems.

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- 5.5 Vessel position-reporting systems, where established, should provide for vessels to report their positions by automatic means to a centralized computer facility by either satellite or terrestrial means.
- 5.6 A co-ordinated distress and search and rescue communications network for maritime and aeronautical distress should be provided, with the necessary interconnections among appropriate SAR organizations, such as rescue co-ordination centres, vessel reporting centres, terrestrial coast stations and satellite ground stations.
- 5.7 The training of radio officers and radio operators should be further expanded, as appropriate, to ensure continued and adequate maintenance and repairs at sea of the telecommunications and other electronic navigation equipment involved in the safety of life at sea.
6. PROPOSED TRANSITIONAL MEASURES
 - 6.1 During the transition to a distress system in the distant future it will be necessary to review and, if necessary, to modify the existing provisions of the Safety Convention.
 - 6.2 The implementation of satellite communications could meet certain requirements for a future distress system, in particular for ship-to-shore alerting, locating, co-ordination and long-distance search and rescue communications. These satellite communication facilities should remain supplementary to ship-to-ship alerting and "on scene" communications, on terrestrial channels. Further studies regarding the additional uses of satellite communication in a future distress system will be necessary and should be included in the proposals for a maritime satellite system.
 - 6.3 The need for a single medium range distress frequency exclusively reserved for distress purposes should be studied in the light of continuing technological developments and the associated requirements for safety and calling.

6.4 In addition to the improvements proposed in the near future distress system the following steps should be taken in preparing a distress system in the distant future:

- (a) Provisions for maritime terrestrial and/or satellite communication should be made for supplementary ship-to-shore and shore-to-ship communications; this would achieve the purpose of locating, co-ordinating and expediting assistance, including communications for search and rescue.
- (b) Provisions should be made for ship-to-ship and ship-to-aircraft communications for "on-scene" operations, taking due regard of the provisions in the Radio Regulations which permit this type of terrestrial communication in the 1535-1660 MHz band, in addition to the MF, HF and VHF bands.
- (c) The introduction of a general purpose selective calling system, capable of facilitating the transmission and reception of all communications, should be expedited.

IV. IMPLEMENTATION

- 7. (a) It is intended that, where practicable, steps in the near future distress system will be introduced into the existing system as soon as possible, through whatever procedure is appropriate.
 - (b) It is intended that, where practicable, steps in the distant future distress system will be introduced in the near future distress system, whenever the introduction of new measures, methods or techniques will make this technically feasible and possible.
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