

4. DISTRESS AND RESCUE AT SEA — VESSELS AND AIRCRAFT

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Former Notice 4/09 is cancelled. Additions and amendments to the former Notice are indicated by sidelines.

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GENERAL ARRANGEMENTS FOR SEARCH AND RESCUE (SAR)

1. General information

- a. The radio watch on the international distress frequencies, which certain classes of vessels are required to keep when at sea, is one of the most important factors in the arrangements for the rescue of people in distress at sea. Every vessel should make its contribution to safety by listening to one or more of these distress frequencies for as long as is practicable whether or not required to do so by regulation.
- b. To supplement the efforts of vessels at sea, most maritime countries maintain a life saving service for the rescue of people in distress around their coasts. The organisation of SAR measures varies from country to country, but effective terrestrial radio communications over short to medium ranges always play an important part in the operation of the service.
- c. **Masters and owners of all vessels governed by the regulations contained in SOLAS Chapter IV (vessels over 300 GT, passenger vessels on international voyages and certain other craft such as particular classes of high speed vessels and rigs etc) should be fully aware of the requirements of the Global Maritime Distress and Safety System (GMDSS) which entered into force on 1st February 1999. The GMDSS is a largely, but not fully, automated system which, among other things, requires ships to have a range of equipment capable of performing nine radiocommunication functions, viz:**
 - 1) transmission of ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;
 - 2) reception of shore-to-ship distress alerts;
 - 3) transmission and reception of ship-to-ship distress alerts;
 - 4) transmission and reception of search and rescue coordinating communications;
 - 5) transmission and reception of on-scene communications;
 - 6) transmission and reception of signals for locating;
 - 7) transmission and reception of maritime safety information;
 - 8) transmission and reception of general radio-communications to and from shore-based radio systems or networks; and:
 - 9) transmission and reception of bridge-to-bridge communications.
- d. Special attention should also be given to IMO Resolution MSC.131(75) (adopted on 21st May 2002), which urged that all vessels should be fitted with facilities capable of transmitting and receiving distress alerts by DSC on VHF Channel 70. The 78th Session of the IMO Maritime Safety Committee (May 2004) went on to decide that, in order to provide a common means of communication in all circumstances, all GMDSS vessels, while at sea, shall continue maintaining a continuous listening watch on VHF Channel 16 when practicable.

2. GMDSS implementation

- a. Distress and safety communications in support of SAR activities use the systems and procedures of the GMDSS. The GMDSS was implemented on 1st February 1999. Vessels built after 1st February 1995 must comply with the applicable GMDSS requirements. Descriptions of the operational procedures to be observed by vessels fitted with GMDSS equipment are contained in the manual for use by the Maritime Mobile and Maritime Mobile Satellite Services published by the ITU, Geneva. When referring to ITU publications, care must be taken to ensure that the latest versions of the Recommendations on the use of Marine Radio Communications equipment are always consulted.
- b. Under the GMDSS there are four sea areas. Sea area A1 is an area within VHF range of coast stations equipped with Digital Selective Calling (DSC). Sea area A2 is an area within MF range of coast stations equipped with DSC. Sea area A3 is an area, excluding sea areas A1 and A2 within the coverage of an Inmarsat geostationary satellite in which continuous alerting is available (NB: Inmarsat network coverage is effective up to about latitudes 76°, North and South). Sea area A4 comprises those areas outside sea areas A1, A2 and A3 - this is essentially the polar regions, above about 76° of latitude, but excludes any other areas. Details of these sea areas, together with information on the GMDSS communication systems, are shown in ALRS Volume 5 (NP285).
- c. Vessels equipped for Digital Selective Calling shall, while at sea, maintain an automatic DSC watch on the appropriate distress and safety calling frequencies in the frequency bands appropriate for the sea area in which they are operating. Vessels, where so equipped, should also maintain watch on the appropriate frequencies for the automatic reception of transmissions of meteorological and Navigational Warnings and other urgent information to vessels. Ship Earth Stations (SES) in use for the reception of shore-to-ship distress alert relays should maintain a listening watch except when communicating on a working channel.

- d. The importance of maintaining some of the radiotelephony procedures used prior to the introduction of the GMDSS has been recognised for many vessels around the world that are not subject to SOLAS, in particular small commercial and leisure craft. This includes participation in responding to distress incidents and ensuring that coast stations and SOLAS vessels can communicate effectively with such vessels in order to coordinate SAR operations. In this respect, the 78th Session of the IMO Maritime Safety Committee (May 2004) decided that a listening watch will, when practicable, also be maintained on VHF Channel 16, as a mandatory requirement, in order to provide a common means of communication between all classes of vessels for distress and safety purposes. To this end, the ITU World Radiocommunication Conference held in 2007 (WRC-07) has now incorporated the VHF Channel 16 radiotelephony procedures into the terrestrial distress, urgency and safety procedures of the GMDSS. In addition, administrations may continue the use of radiotelephony procedures on the MF distress frequency 2182 kHz on a national basis, as an adjunct to the GMDSS. Several countries in the Americas intend to continue use of 2182 kHz in this way.

TERRESTRIAL DISTRESS, URGENCY AND SAFETY COMMUNICATIONS

3. Distress communications in the GMDSS

- a. Ship-to-shore distress alerts in the GMDSS are used to alert Rescue Coordination Centres (RCC's), either directly or through a Coast Radio Station (CRS) or Coast Earth Station (CES), that a vessel is in distress. These alerts are based on the use of transmissions through satellites (from a SES, a satellite Emergency Position Indicating Radio Beacon (EPIRB), Personal Locator Beacon (PLB) and/or terrestrial services using DSC assigned calling frequencies from ship stations and EPIRBs.
- b. Ship-to-ship distress alerts are used to alert other vessels in the vicinity of the vessel in distress and are based on the use of DSC or radiotelephony in the VHF and MF bands. When in distress, vessels not equipped with DSC should immediately try to initiate distress communications by transmitting a distress call and message by radiotelephony on the frequency 156.8 MHz (VHF Channel 16) (see 5 below).
- c. In order to attract attention from as many vessels as possible and to supplement the basic information given in a DSC distress alert, a vessel that has sent a distress alert by DSC should, immediately afterwards, also send a distress call and distress message by radiotelephony.

4. DSC distress alerts

- a. The DSC distress alert indicates that a vessel, aircraft or other vehicle, or a person, is threatened by grave and imminent danger and requires immediate assistance. The DSC distress alert consists of one or more distress call attempts in which a DSC message format is transmitted identifying the station in distress, giving its last recorded position and, if entered, the nature of the distress. This fulfils the requirement that distress alerts in the GMDSS must provide the identification and position of the station in distress. **FOR FULL DETAILS ON DSC ALERTING SEE CHAPTER 5 OF ALRS VOLUME 5 (NP285).**
- b. The following frequencies are used for DSC Distress, Urgency and Safety alerts:

| | |
|-----|--------------------------|
| VHF | 156.525 MHz (Channel 70) |
| MF | 2187.5 kHz |
| HF | 4207.5 kHz |
| | 6312 kHz |
| | 8414.5 kHz |
| | 12577 kHz |
| | 16804.5 kHz |

- c. Every vessel equipped for Digital Selective Calling shall, while at sea, maintain a continuous DSC watch as appropriate to the sea area in which the vessel is sailing. Vessels equipped for sailing in sea area A1 only will maintain a DSC watch on VHF Channel 70. The following frequencies are used for subsequent communications by radiotelephony following the transmission of a DSC alert:

| | |
|-----|--------------------------|
| VHF | 156.800 MHz (Channel 16) |
| MF | 2182 kHz |
| HF | 4125 kHz |
| | 6215 kHz |
| | 8291 kHz |
| | 12290 kHz |
| | 16420 kHz |

Note: 2182 kHz and VHF Channel 16 are the two frequencies most likely to be used for subsequent communications and on-scene communications during SAR operations.

5. Radiotelephony (RT) distress calls

- a. The VHF Channel 16 distress, urgency and safety radiotelephony procedures used prior to the introduction of the GMDSS have now been added to the GMDSS procedures following the decision to require SOLAS vessels to maintain a listening watch on VHF Channel 16, when practicable, and the subsequent action by WRC-07 to amend the ITU Radio Regulations (see 2d above). National administrations may also authorise the continued use of 2182 kHz for such purposes within the coastal regions under their authority. Radiotelephony procedures will therefore continue to provide an essential means of communication between SOLAS and non-SOLAS vessels, particularly for distress, urgency and safety communications. However, VHF Channel 16 is the only frequency from those listed in TABLE 2 above where there is a worldwide requirement to maintain a listening watch. Vessels that are not equipped for Digital Selective Calling should therefore initiate distress communications by transmitting a radiotelephony distress call and message on VHF Channel 16, as well as using any other means available, such as an EPIRB or a PLB, for sending a distress alert.
- b. The VHF Channel 16 radiotelephony distress procedure consists of a distress call and a distress message, which shall be sent in accordance with the following procedure:

Distress Call

The distress call sent by radiotelephony consists of:

- The distress signal “MAYDAY” (x3);
- The words “THIS IS”;
- The NAME of the vessel in distress (x3);
- The CALL SIGN or other identification;
- The MMSI (if the initial alert has been sent by DSC)

NB: The distress signal “MAYDAY” indicates that the vessel, aircraft or any other vehicle or person is threatened by grave and imminent danger and requires immediate assistance.

Distress Message

The message which follows the distress call, consists of:

- The distress signal “MAYDAY”
- The NAME of the vessel in distress;
- The CALL SIGN or other identification;
- The MMSI (if the initial alert has been sent by DSC);
- The position, given as the latitude and longitude, or if the latitude and longitude are not known or if time is insufficient, in relation to a known geographical location;
- The nature of the distress;
- The kind of assistance required;
- Any other useful information.

- c. An example of a complete sequence of a distress transmission from vessel “Wanderer”, call sign “MMVR”:

Distress Call

MAYDAY MAYDAY MAYDAY

THIS IS

WANDERER WANDERER WANDERER

MIKE MIKE VICTOR ROMEO

followed by

Distress Message

MAYDAY

WANDERER MIKE MIKE VICTOR ROMEO

I AM 3 MILES SOUTH OF CHICKEN ROCK

FIRE AND EXPLOSION IN ENGINE ROOM

REQUIRE IMMEDIATE ASSISTANCE

FIFTEEN PERSONS ON BOARD

OVER

Further Information

“Any other useful information” (some of which may be sent later if conditions permit) includes:

- 1) Master’s intentions
- 2) Type of cargo (if dangerous)
- 3) Weather, visibility and sea condition
- 4) Time of abandonment
- 5) Number and type of survival craft
- 6) Number of persons abandoning/staying on board
- 7) Details of location aids in survival craft or sea.

6. Receipt and acknowledgement of a DSC distress alert or radiotelephony distress call (See Appendices E & F)

- a. On receipt of a distress alert or a distress call, all stations shall prepare for subsequent distress communications by setting watch on the radiotelephony distress and safety traffic frequency used or associated with the DSC distress and safety calling frequency on which the distress alert was received (i.e. 2182 kHz on MF, Channel 16 VHF). Ship or ship earth stations in receipt of a distress alert or distress call shall, as soon as possible, make the master or person responsible for the vessel aware of the information received.

Role of Coast Radio Stations (CRS), Coast Earth Stations (CES) and Rescue Coordination Centres (RCC)

- b. The primary role of the shore based rescue coordination infrastructure in the GMDSS requires that a CRS or appropriate CES that receives a distress alert or distress call shall ensure that the information is routed as soon as possible to an RCC. The receipt of a distress alert or a distress call on shore must be acknowledged as soon as possible by a CRS, or by an RCC via a coast station or an appropriate CES. When making the acknowledgement by DSC, the CRS shall use the same frequency on which the DSC distress alert was received, address it to “All Ships” and include the identification of the vessel in distress.
- c. The CRS or RCC that receives a distress alert or call shall also initiate the transmission of a shore-to-ship distress relay when the method of receipt warrants a broadcast to shipping or when the circumstances of the distress incident indicate that further help is necessary. Shore-to-ship distress relays must contain the identification of the vessel in distress, its position and all other information that might assist rescue operations.
- d. Because of the essential role of the shore-based authorities in managing distress incidents in the GMDSS, and the consequent need to avoid confusion with well-intentioned DSC acknowledgements by ship stations, acknowledgement of a DSC distress alert by use of DSC should normally only be made by an RCC or CRS. **NB: the first acknowledgement by DSC will cancel any further automated repetition of the DSC distress alert from the vessel in distress.**

Role of ship stations

- e. If a vessel is in an area covered by one or more CRS and receives a DSC distress alert or a radiotelephony distress call from another vessel, she should refrain from making any acknowledgement for a short interval in order to give the CRS time to acknowledge the distress alert or call and then provide further instructions, usually by means of a shore-to-ship distress alert relay by DSC or distress call relay by radiotelephony.
- f. A vessel in receipt of a shore-to-ship distress alert relay or distress call relay should establish communication as directed and render such assistance as required and appropriate.
- g. A vessel acknowledging receipt of a distress alert sent from another vessel by DSC should:
 - in the first instance, acknowledge receipt of the distress alert by using radiotelephony on the distress and safety traffic frequency in the band used for the alert, taking into account any instructions which may be issued by a responding CRS;
 - only send an acknowledgement by DSC if instructed to do so by a CRS or an RCC, or in the case that:
 - no acknowledgement by DSC from a coast station has been observed; and
 - no other communication involving the vessel in distress has been observed; and
 - at least five minutes have elapsed and the distress alert by DSC has been repeated.
- h. If it becomes necessary for a vessel to send a DSC acknowledgement to another vessel, it shall be done on the same distress frequency on which the distress alert was received. The nearest coast station should then be informed by any suitable communication means.

- i. A vessel acknowledging receipt of a distress call sent from another vessel by radiotelephony should:
 - in the first instance, listen for any instructions which may be issued by a responding CRS;
 - if the call is not acknowledged by a CRS or another vessel within five minutes, acknowledge receipt to the vessel in distress and then use any means available to relay the distress call to an appropriate CRS or CES.
- j. The form of acknowledgement by radiotelephony of the receipt of a distress alert or a distress call from another vessel consists of:
 - The distress signal “MAYDAY”;
 - The NAME followed by the CALL SIGN, or the MMSI or other identification of the station sending the distress message;
 - The words “THIS IS”;
 - The name and call sign or other identification of the station acknowledging receipt;
 - The word “RECEIVED”;
 - The distress signal “MAYDAY”.
- k. Vessels operating in areas where reliable communications with a CRS are not practicable and which receive a distress alert or call from a vessel which is, beyond doubt, in their vicinity, shall, as soon as possible and if appropriately equipped, acknowledge receipt to the vessel in distress and inform a rescue coordination centre through a CRS or CES. However in order to avoid making unnecessary or confusing responses to DSC distress alerts received on HF, vessels that may be at a considerable distance from the incident, shall not acknowledge but shall monitor the distress frequencies concerned and shall, if no acknowledgement by a CRS is observed within five minutes, make a DSC distress alert relay, but only to an appropriate CRS or CES.

7. Transmission of a distress alert relay or a distress call relay by a station not itself in distress

- a. The distress alert relay and the distress call relay shall contain the identification of the vessel, aircraft or other mobile unit in distress, its position and all other information which might facilitate rescue operations.

Role of Coast Radio Stations (CRS), Coast Earth Stations (CES) and Rescue Coordination Centres (RCC)

- b. A CRS or an RCC that receives a distress alert or call shall initiate the transmission of a shore-to-ship distress alert relay addressed, as appropriate, to all ships, to a selected group of ships, or to a specific ship, by satellite and/or terrestrial means.

Role of ship stations

- c. Vessels able to assist should acknowledge the shore-to-ship relay as instructed by a CRS or an RCC and, if appropriate, make an acknowledgement directly to the vessel in distress (see paragraph 6). Where a CRS or RCC is aware of the distress incident, there should be no need for a vessel to consider sending a distress alert relay by DSC or a distress relay call by radiotelephony on its own authority.
- d. Only in the specific circumstances below should a vessel that learns of a mobile unit in distress (for example, by a radio call or by observation) consider initiating and transmitting a distress alert relay or a distress call relay on behalf of the mobile unit in distress:
 - on receiving a distress alert or call which is not acknowledged by a coast radio station or another vessel within five minutes;
 - or*
 - on learning that the mobile unit in distress is otherwise unable or incapable of participating in distress communications, and if the master or other person responsible for the mobile unit not in distress considers that further help is necessary.
- e. A vessel is most likely to consider making a relay on its own authority when in receipt of a VHF RT distress call and message. This is because there may be no CRS or RCC in range. Moreover, if there is no indication other than the distress call on VHF, then it is likely to have originated from a non-SOLAS vessel with only basic communication facilities. If no CRS or vessel is heard to acknowledge in such circumstances then, in addition to acknowledging receipt of the distress call (see paragraph 6), any means available should be used to make a distress relay call to the nearest CRS.

* Unless an administration has published information on the use of other frequencies such as 2182 kHz, distress calls and messages using radiotelephony should be sent on the frequency 156.8 MHz (VHF Channel 16) in order to maximise the likelihood of reception.

- f. The distress relay on behalf of a mobile unit in distress shall be sent in a form appropriate to the circumstances, using either a distress call relay by radiotelephony, an individually addressed distress alert relay by DSC, or a distress priority (level 3) message through a Ship Earth Station. The priorities for a vessel making a distress alert relay or a distress call relay are to ensure that an appropriate CRS or RCC is informed of any distress communications previously exchanged and to indicate clearly that it is not itself in distress.
- g. When it is known that an aural watch is being maintained on shore and reliable ship-to-shore communications can be established by radiotelephony, the preferred course of action is to send distress call relay by radiotelephony, addressed to the relevant CRS or RCC on the appropriate frequency. The distress relay call sent by radiotelephony consists of:

- The distress signal “MAYDAY RELAY” (x3);
- ALL STATIONS or coast station name, as appropriate (x3);
- The words “THIS IS”
- The name of the relaying station (x3);
- The call sign or other identification of the relaying station;
- The MMSI (if the initial alert has been sent by DSC) of the relaying station (the vessel not in distress);
- Complete repetition of the ORIGINAL DISTRESS ALERT INFORMATION OR DISTRESS MESSAGE.

Note: If the station in distress could not be identified, and you therefore have to originate the distress message as well, then you must not use the name of your own station, i.e., you would say ‘Unidentified Trawler’ or ‘Unidentified Helicopter’.

- h. When no aural watch is being maintained on shore, or there are other difficulties in establishing reliable ship-to-shore communications by radiotelephony, an appropriate Coast Radio Station or Rescue Coordination Centre may be contacted by sending an individual distress alert relay by DSC, addressed solely to that station and using the appropriate call formats. **FOR FULL DETAILS ON DSC PROCEDURES SEE CHAPTER 5 OF ALRS VOLUME 5 (NP285).**

Note: **In no circumstances, may a vessel transmit a DSC distress alert relay addressed to “All Ships” on the VHF or MF distress frequencies following receipt of a DSC distress alert sent by another vessel.**

- i. In the event of continued failure to contact a Coast Radio Station or Rescue Coordination Centre directly, it may be appropriate to send a distress call relay by radiotelephony addressed to all ships, or to all ships in a certain geographical area.

8. Cancellation of an inadvertent distress transmission

- a. In the event that a distress alert or distress call is sent inadvertently, the station responsible must immediately cancel the distress transmission.
- b. An inadvertent distress alert sent by DSC must be cancelled by DSC using the self-cancellation procedure (essentially acknowledging one’s own alert) as set out in Recommendation ITU-R M.493, followed up on radiotelephony with a voice cancellation call. Likewise, an inadvertent distress call sent by radiotelephony must be cancelled by means of a voice call.
- c. The voice cancellation call must be sent on the radiotelephony distress and safety frequency in the same band on which the distress transmission was sent, using the following procedure:
- the call “ALL STATIONS” (x3);
 - The words “THIS IS”;
 - The NAME of the vessel (x3);
 - The CALL SIGN or other identification;
 - PLEASE CANCEL MY DISTRESS ALERT OF time in UTC.
- d. Then monitor the same band on which the inadvertent distress transmission was sent and respond to any communications concerning that distress transmission as appropriate.

9. Distress/SAR communications

- a. Distress communications infer that a ship, aircraft or person is in distress and therefore in grave and imminent danger and requires immediate assistance. Distress traffic consists of all messages relating to Search and Rescue communications and on-scene communications. The essential common elements of these communications, irrespective of whether DSC or RT distress procedures were used to alert other stations, are summarised below.
- b. The control of traffic is initially the responsibility of the station in distress but is usually transferred, when appropriate, to a properly equipped station such as a local Coast Radio Station. This is normally the RCC designated in the GMDSS Master Plan. A vessel in receipt of a shore-to-ship distress alert should establish communication as directed and render such assistance as required and appropriate.

c. Subsequent communications

- (i) Subsequent communications between the vessel in distress, assisting vessels and the Coast Radio Station will be conducted under the direction of a controlling station which, depending on circumstances, could be the Coast Radio Station, the vessel in distress or, for example, during a lengthy SAR operation by the On-Scene Coordinator (OSC). All stations will observe the procedures for maintaining radio discipline and organising SAR operations set out in the Radio Regulations of the ITU and the IMO / ICAO International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual throughout the duration of the distress incident. The spoken distress signal “MAYDAY” should precede all distress/SAR communications using radiotelephony.
- (ii) Every vessel which acknowledges receipt of a distress message shall comply with Regulation 10 of SOLAS chapter V, as amplified by the IAMSAR Manual. The master of a vessel proceeding to the scene of a distress incident shall transmit, as soon as possible, the following information:

- MAYDAY
- ALL STATIONS
- NAME
- Own vessel’s current position, course and speed
- ETA at the distress position

Note: Before transmission, the operator must ensure that no interference can be caused to stations that are in a better position to render assistance to the station in distress.

d. On-scene coordination

- (i) In a distress or SAR situation it may be necessary for one of the participating stations to assume the role of On-Scene Coordinator (OSC). If specialised SAR units (lifeboats, aircraft or warships) are at the scene then one of those units may assume the role of SAR Mission Controller (SMC) if so directed by the coordinating RCC. The duties of the OSC are many and varied; vessel masters, mates and radio operators should therefore familiarise themselves with the IAMSAR Manual.

e. On-scene communications

- (i) On-scene communications are those between the mobile unit in distress and assisting mobile units, and between the mobile units and the unit coordinating SAR operations.
- (ii) The control of on-scene communications is the responsibility of the OSC; one duty being the nomination of the frequencies to be used. Simplex transmissions shall be used so that all on-scene mobile stations may share relevant information concerning the distress incident. The preferred frequencies in radiotelephony for on-scene communications are Channel 16 (156.8 MHz) and, at MF, 2182 kHz. S92 and AW139 helicopters have MF capability and VHF Channels 67 and 73.
- (iii) Vessel stations may also need to communicate with aircraft stations for distress and safety purposes. On VHF, both Channel 16 (156.8 MHz) and Channel 6 (156.3 MHz) may be used for on-scene communications between vessels and aircraft. If the appropriate aeronautical VHF band equipment is available, the frequencies 121.5 MHz and 123.1 MHz may also be used in mode of emission A3E; the former for the purposes of distress and urgency only, the latter for SAR operations.
- (iv) During distress working, the RCC coordinating distress traffic, the OSC or the CRS involved may impose silence on any interfering stations by using the term:

“SEELONCE MAYDAY”

f. End of Distress Traffic

- (i) Until they receive the message indicating that normal working may be resumed, all stations which are aware of the distress traffic, and which are not taking part in it and which are not in distress, are forbidden to transmit on the frequencies on which the distress traffic is taking place.
- (ii) Vessels which, while following distress traffic, are able to continue normal service under these conditions, may do so when the distress traffic is well established provided that, noting (i) above, they do not interfere with distress traffic.
- (iii) When distress traffic has ceased on frequencies which have been used for distress traffic, the RCC controlling a search and rescue operation shall initiate a message for transmission on these frequencies indicating that distress traffic has finished, as follows:
 - The distress signal “MAYDAY”;
 - The call “ALL STATIONS” (x3);
 - The words “THIS IS”;
 - The name of the station sending that message (x3);
 - The call sign or other identification of the station sending that message;
 - The time of handing in the message;
 - The MMSI (if the initial alert has been sent by DSC), the name and the call sign of the mobile station which was in distress;
 - The words “SEELONCE FEENE” (pronounced as the French phrase “silence fini”).

10. Urgency and Safety communications

- a. Urgency and Safety communications relate to:
 - (i) Navigational and meteorological warnings;
 - (ii) Ship-to-ship safety of navigation;
 - (iii) Ship reporting services;
 - (iv) Support communications for SAR operations;
 - (v) Medical advice and transports;
 - (vi) Other urgent or safety messages;
 - (vii) Navigation, movements and needs of ships;
 - (viii) Weather observation messages (OBS) destined for an official meteorological service.
- b. Urgency communications specifically concern the safety of a vessel, aircraft, vehicle or person and have priority over all other communications, except distress.
- c. Safety communications concern important meteorological or navigational information and have priority over all other communications, except distress and urgency.
- d. Urgency and Safety Procedures
 - (i) The content of urgency and safety messages is usually best suited for transmission by voice, although text messages using narrow-band direct-printing (NBDP - i.e. telex) and voice/data messages over Inmarsat satellites can also be used. Because urgency and safety messages are often relatively lengthy, compared to distress messages, care needs to be taken to avoid overloading distress and safety traffic frequencies. Working channels should therefore be used where appropriate.
 - (ii) Coast stations and vessels equipped to use DSC should also make an announcement by DSC before proceeding with the urgency/safety communications using radiotelephony. The DSC distress and safety calling frequencies listed in TABLE 1 above may be used by coast stations and ship stations to announce the impending transmission of urgency, vital navigational or safety messages by RT. The MF and VHF bands are the two most likely to be used for urgency and safety communication because such messages will tend to be of interest to a limited geographical area and for a limited duration. At VHF, the DSC distress and safety frequency 156.525 MHz/Channel 70 is used to announce urgency or safety transmissions and, at MF, the DSC distress and safety frequency 2187.5 kHz is used.
 - (iii) When announcing urgency and safety transmissions using DSC, care should be taken to avoid an excessive amount of DSC activation that could overload the DSC distress and safety calling frequencies or distract personnel on the bridge. In particular, safety messages transmitted by Coast Radio Stations in accordance with a predefined timetable should not be announced by DSC techniques.

- (iv) Urgency or safety announcements by DSC may only be addressed either to “All Ships” or to individual stations and will denote which frequency is to be used to send the subsequent voice or NBDP transmission. An urgency or safety announcement by DSC from a Coast Radio Station may also be directed to a group of vessels or to vessels in a defined geographical area. Vessels not equipped for DSC operation may make the initial urgency or safety call by voice on the frequency 156.8 MHz (VHF Channel 16), though taking into account that coast stations or vessels outside VHF range may not receive the announcement.
- (v) The urgency or safety voice transmission consists of a call sent on the appropriate RT distress and safety traffic frequency, for example, VHF Channel 16 or MF 2182 kHz, followed by the message on the same frequency or, when appropriate, on an RT working frequency in the same band as used for the announcement. In order to avoid obstructing more important communications, Coast Radio Stations routinely use an appropriate RT working channel for long safety messages and, when circumstances require, have discretion on whether to continue using the RT distress and safety traffic frequency for urgency messages or to switch to a working channel.
- (vi) Voice transmissions of urgency calls and messages are preceded by the urgency signal “PAN PAN”, spoken three times. The urgency signal “PAN PAN” and the urgency call format used for an announcement by DSC indicate that a very important message is to follow concerning the safety of a mobile unit or a person. However, urgency communications used in support search and rescue operations do not need to be preceded by the urgency signal.
- (vii) Likewise, voice transmissions of safety calls and messages are preceded by the safety signal “SECURITE” spoken three times. The safety signal “SECURITE” and the safety call format used for an announcement by DSC indicate that an important meteorological or Navigational Warning is about to follow.

e. Procedures for urgency transmissions

Urgency transmissions consist of an initial voice call and a subsequent voice message, both identified as such by the urgency signal “PAN PAN”. Urgency calls are normally preceded by sending a DSC announcement, using the DSC urgency call format.

- (i) The urgency call and message should be transmitted on the appropriate RT distress and safety traffic frequency in the same band as the DSC announcement. However, in the case of a long message, a medical call or in an area of heavy traffic when the message is being repeated, then the urgency message should be sent on a working channel.

Note: Only VHF Channel 16, or 2182 kHz on MF in those areas around the world where the shore based authorities have declared its continued use, should be used for RT urgency calls because no other RT distress and safety frequencies will now be listened to on a continuous basis.

- (ii) An example of an urgency message in the required standard format shown below:

PAN PAN - PAN PAN - PAN PAN

ALL STATIONS (repeated three times)

THIS IS NONSUCH - NONSUCH - NONSUCH

ONE ZERO MILES WEST OF SKERRIES

LOST PROPELLER DRIFTING WEST SOUTH WEST AT THREE KNOTS

REQUIRE TOW URGENTLY

OVER

f. Medical Advice

- (i) Many Coast Radio Stations around the world provide a medical advice service.
- (ii) Medical advice is classified as an urgent communication. Therefore the URGENCY category and call format should be used for a DSC announcement, and the urgency signal “PAN PAN” (spoken three times) should be used to introduce the associated call and message
- (iii) Requests for medical advice should be addressed to the nearest coast station using the published preamble shown in the ITU *List of Coast Stations and Special Service Stations*.
- (iv) The medical message should contain the following information:

— *VESSEL'S NAME / CALL SIGN AND NATIONALITY*

— *POSITION*

— *NEXT or NEAREST PORT with ETA*

— *PATIENT DETAILS (i.e., name, age, sex, medical history, etc.)*

— *PATIENT SYMPTOMS and advice REQUIRED*

— *MEDICATION CARRIED ON BOARD*

Note: The International Maritime Code of Signals contains medical (3 letter) codes which, when used, should be preceded by the word INTERCO.

- (v) As part of the services provided ancillary to the GMDSS, all Inmarsat Land Earth Stations will provide a Medical Advice and Medical Assistance service using the 2 digit codes 32 and 38 respectively. In the UK Search and Rescue Region all requests for Medical Advice or Medical Assistance should be made to HM Coastguard who will link the caller to a specialist doctor free of charge.
- (vi) As noted in Recommendation ITU-T D90 (see the ITU *Manual for Use by the Maritime Mobile and Maritime Mobile Satellite Services*), no charge is raised against the originating maritime mobile station, for communications using the maritime mobile service which relate to medical advice provided that:
 - they are exchanged directly (i.e. without the involvement of any other coast station) between mobile stations and land stations shown in the ITU *List of Coast Stations and Special Service Stations* as providing such a service, or land stations which offer the service;
and
 - they are addressed in accordance with the conditions published in the ITU *List of Coast Station and Special Service Stations*, or as specified by the satellite service operator.
- (vii) Any land station and landline charges for medical advice communications will be billed to the appropriate shore authority.

g. Medical transports

- (i) Distinctive signals may be used by medical units or transports for communications relating to persons protected in time of war. The term “medical transports”, as defined by the Geneva Conventions and Additional Protocols, 12th August 1949, refers to any means of transportation by land, sea or air used to assist the wounded, the sick and the shipwrecked. Neutral vessels should provide such assistance when requested by one or other of warring parties and are afforded protection from any hostile action.
- (ii) The announcement and identification of “medical transports” are classified as urgent communications and must follow the following procedures:

(a) Announcement of a medical transport

When using DSC, the announcement of a medical transport must be broadcast on the appropriate DSC distress and safety frequencies either to “all stations”, on VHF, or to a specified geographical area on MF/HF.

The DSC call format used for DSC announcements must also indicate “Medical transport”, as shown in the example below:

- Format Specifier: “ALL SHIPS”
- Category: “URGENCY”
- Telecommand: “MEDICAL TRANSPORT”

Voice calls and messages involving medical transports must be preceded by the RT urgency signal “PAN PAN” (spoken three times) and the initial urgency call must be followed immediately by the addition of the single word MAY-DEE-CAL, i.e., “MEDICAL” pronounced as in French “médical”. Medical transports may use one or more of the distress and safety traffic frequencies for the purpose of self-identification and to establish communications. However, as soon as practicable, communications should be transferred to an appropriate working frequency.

(b) Identification of a medical transport

The above signals indicate that the message which follows concerns a protected medical transport. The subsequent voice message serves to identify the medical transports concerned and must be preceded by the urgency signal “PAN PAN” and must convey the following information:

- Call sign or other means of identification
- position
- number and type of units
- intended route
- estimated time en route and of departure and arrival, as appropriate
- any other information, such as flight altitude, radio frequencies guarded, languages used and secondary surveillance radar modes and codes

Note: In order to facilitate communications, one or more of the parties to a conflict may designate frequencies to be used for such communications.

h. Procedures for safety transmissions

Safety transmissions consist of an initial voice call and a subsequent voice message, both identified as such by the safety signal "SECURITE". Safety calls may be preceded by sending a DSC announcement, using the DSC safety call format. However, in order to avoid overloading the DSC distress and safety frequencies or causing excessive receiver alarms on the bridge, Coast Radio Stations do not use DSC to announce safety transmissions that take place at scheduled times.

- (i) The safety call should be transmitted on the appropriate RT distress and safety traffic frequency (which would be in the same band as the DSC announcement, if made). The safety message may also continue on the same frequency but, preferably, should be sent on a working frequency, in which case a suitable indication to this effect shall be included on the DSC announcement or made at the end of the voice safety call. In particular, Coast Radio Stations should always endeavour to send the message on a working channel in the same band as the initial safety call or DSC announcement.

Note: If an announcement using DSC is used it should normally be sent on VHF Channel 70. Normally, VHF Channel 16 will be used for voice safety calls. VHF Channel 13, the intership navigation safety channel, may be used instead of VHF Channel 16 for Navigational Warnings. Other channels may also be designated by local coastguard organisations for inshore warnings. The frequency 2182 kHz may also be used for safety calls and messages in those areas around the world where the shore based authorities have declared its continued use.

- (ii) An example of a safety message in the required standard format is shown below:

*SECURITE - SECURITE - SECURITE
ALL STATIONS - ALL STATIONS - ALL STATIONS
THIS IS NONSUCH, NONSUCH, NONSUCH
LARGE RED CONTAINER SPOTTED AT 1030 UTC
IN POSITION 52.02 NORTH 003.36 WEST
VESSELS KEEP SHARP LOOKOUT AND REPORT
OUT*

i. Transmission of Urgency and Safety Messages

To summarise, the two stages in the transmission of Urgency and Safety Messages proceeds in the following stages:

- (i) Announcement of Urgency and Safety Messages

When using DSC to announce broadcasts of urgency or safety messages, the call format of the DSC announcement takes the following form:

- | | |
|------------------------------|--|
| — Format Specifier: | "ALL SHIPS" or the "MMSI" of the intended receiving station or group of stations |
| — Category: | "URGENCY" or "SAFETY" |
| — Self Identification: | "MMSI" of the transmitting station |
| — Frequency: | The CHANNEL to be used for transmission of the subsequent message |
| — Subsequent Communications: | Transmission mode for the message etc. - RT is the default mode. |

- (ii) The urgency or safety call, using radiotelephony, is then broadcast on the appropriate distress and safety traffic frequency in the following standard format, commencing with the urgency or safety signal, as appropriate:

- the urgency signal PAN PAN (x3) or the safety signal SECURITE (safety) (x3)
- the call ALL STATIONS (x3) or NAMED STATIONS (x3)
- the words "THIS IS"
- the NAME of the station transmitting the call (x3);
- the CALL SIGN or any other IDENTIFICATION
- the MMSI (if the initial announcement has been sent by DSC)

Followed, where appropriate, by details of the radio channel to be used for the following message, e.g.,

- LISTEN FOR NAVIGATIONAL WARNING ON CHANNEL 13

- (iii) The urgency or safety message is then broadcast, using radiotelephony, on the selected operating frequency in the following standard format, commencing with the urgency or safety signal, as appropriate:
- the urgency signal PAN PAN (x3) or the safety signal SECURITE (x3)
 - the call ALL STATIONS (x3) or NAMED STATIONS (x3)
 - the words “THIS IS”
 - the NAME of the station transmitting the message (x3)
 - the CALL SIGN or any other IDENTIFICATION
 - the MMSI (if the initial announcement has been sent by DSC)
 - [the text of the urgency or safety message]
- j. Reception of Urgency and Safety Messages
- (i) Following receipt of a DSC urgency or safety call announcing a message addressed to “All Stations”, the frequency or channel indicated for the message should be monitored until further information is received. If, at the end of the five-minute monitoring period, no urgency message has been received, a Coast Radio Station should, if possible, be notified of the missing message. Thereafter, normal working may be resumed.
- (ii) DSC urgency/safety “All Ships” announcements or RT calls to “All Stations” should NOT, be acknowledged.
- k. Termination of urgency traffic
- When an urgency message has been broadcast to more than one station, and once no further action is required, then the station responsible should terminate communications in respect of the event concerned by sending an “urgency cancellation” message using the format below:
- the urgency signal “PAN PAN” (x3);
 - the call “ALL STATIONS” (x3);
 - The words “THIS IS”;
 - The NAME of the station transmitting the urgency message (x3);
 - The CALL SIGN or any other identification;
 - the MMSI (if the initial announcement has been sent by DSC);
 - “PLEASE CANCEL URGENCY MESSAGE OF time in UTC”.

11. Search and Rescue arrangements in the United Kingdom

When a vessel or aircraft is in distress off the coasts of the United Kingdom, assistance may be given not only by vessels in the vicinity but also by HM Coastguard (HMCg), The Royal Air Force, The Royal Navy, Air Traffic Control Centres, The Royal National Lifeboat Institution, Lloyd’s and Local Officers of the Fishery Department. The assistance these organisations can provide is detailed below.

HM Coastguard (HMCg)

- a. HMCg is the authority responsible for initiating and coordinating all civil maritime SAR measures for vessels and persons in need of assistance in the UK Search and Rescue Region (UK SRR). HMCg may also be responsible for the coordination of maritime incidents arising from aeronautical incidents. The UK Maritime SRR corresponds, where possible, with the International Civil Aviation Organization (ICAO) UK SRR and is bounded by latitudes 45N and 61N, by longitude 30W and by the adjacent European SRRs. The UK Maritime SRR is further sub-divided into three Maritime SRRs under the authority of a Coastal Safety Manager. Each of the three SRRs is divided into three areas consisting of two districts. Each area contains two MRCCs acting in operational partnership. The UK SRR surrounds the Shannon area which is the responsibility of the Republic of Ireland (see ALRS Volume 5 (NP285)).
- b. SAR services which HMCg can call upon in the UK SRR comprise “declared” facilities which are available at short notice, including military and some civil rotary and fixed wing aircraft, lifeboats and hovercraft of the Royal National Lifeboat Institution (RNLI), as well as additional facilities which include vessels which happen to be available and respond at the time.
- c. The organisation is based upon a constantly manned communications watch system at 18 MRCCs, which together give coverage of UK coastal waters. Additionally, London Coastguard, an operations centre based close to the Thames Barrier, covers the River Thames as far as Teddington. Within each of the Areas associated with the MRCCs there is an organisation of Coastguard Rescue Teams grouped within sectors under the management of regular HMCg officers. There are 64 sectors, in each of which are several Coastguard stations. Appropriate scales of rescue equipment are maintained at all stations.

- d. HMCG is responsible for maintaining:
- (i) a loudspeaker watch at all times on 156.8 MHz (the VHF Distress, Urgency, Safety and Calling Frequency (VHF Channel 16)). Coverage of the UK coastal waters is provided up to a range of at least 30 n miles offshore.
 - (ii) an electronic radio watch on VHF DSC Channel 70 around the whole of the UK coastline, effectively, within sight of land, 0 – 30 n miles.
 - (iii) an electronic radio watch on MF DSC on 2187.5 kHz at selected stations, effectively up to around 150 n miles offshore (MF DSC on 2187.5 kHz, at the following stations: MRCC Falmouth, MRCC Milford Haven, MRCC Holyhead, MRCC Clyde, MRCC Stornoway, MRCC Shetland, MRCC Aberdeen, MRCC Humber).
- e. **It should be noted that the MF Distress Watch on 2182 kHz at UK Coast Stations i.e. UK MRCCs, ceased at 2359 GMT 31 May 2002. All MF communications between vessels and UK Coast Stations after this date should be via MF DSC for DISTRESS, URGENCY AND SAFETY COMMUNICATIONS only with 2182 kHz becoming the working frequency following the receipt of alerts on 2187.5 kHz.**

Note: The UK has not, nor does it have any plans to designate, a shore based station for HF DSC. Agreement has yet to be reached with a European DSC station following the cessation of HF DSC through Lyngby radio in Denmark.

- f. Requests for medical advice from masters and skippers of vessels at sea should be made to the nearest Coastguard Coordination Centre. On receiving a call, the operator will arrange a radio telephone call with the appropriate medical authorities. HMCG is guided by the advice of the doctor and is bound by that decision. There is no charge for this service.

Use of the Radio Medical Advice Service in UK waters must be made through a Coastguard MRCC and NOT direct to a hospital. To do so will introduce delay in the event of evacuation.

- g. Requests from masters and skippers of vessels at sea for medical assistance are also dealt with by HMCG. Although advice should always precede assistance, a request for medical assistance sometimes requires immediate assessment and response without qualified medical advice. Nevertheless, after alerting the appropriate service, medical advice will always be sought. Acting on medical advice, HMCG will make the necessary arrangements for the transportation of the person to shore by the most suitable means and/or arrange for a doctor to be transported to the vessel. Arrangements will also be made with local medical or ambulance services to provide appropriate assistance when the patient is landed.
- h. HMCG is responsible for the distribution and transmission of MSI messages on the NAVTEX service. This is supplemented by set broadcast schedules on VHF and MF RT. MSI originates from two main Service Providers – United Kingdom Hydrographic Office for Navigational Warnings and the Meteorological Office for Meteorological Warnings.
- i. Meteorological Services include gale warnings, sea area forecasts, inshore waters forecasts, 5 day extended outlooks and weather reports from coastal stations.
- j. Navigational Warnings include NAVAREA long range warnings which contain information concerning principal shipping routes which are necessary for the mariner to know before entering coastal waters, such as failure of and changes to major navigational aids, newly discovered wrecks or natural hazards in or near main shipping lanes and areas where SAR, anti-pollution operations, cable laying and other underwater activities are taking place. Navigational Warnings also include WZ Coastal Warnings which contain information similar to NAVAREA warnings but designed to assist the mariner in coastal navigation up to the entrance of ports. Both NAVAREA and WZ Navigational Warnings are transmitted by NAVTEX, but only WZ Navigational Warnings are broadcast by VHF and MF RT on receipt, thereafter, twice daily.
- k. Other information provided in MSI broadcasts may include Negative Surge Warnings, SUBFACTS and GUNFACTS (information relating to submarine and gunnery activity, in selected areas), ice warnings, and interruption to electronic navigational aids.
- l. All MRCCs also keep a continuous telephone and fax watch and have a VHF Direction Finding (DF) capability. Full details of the DF service are given in ALRS Volume 2 (NP282). MRCC Dover, which is also the station responsible for the Channel Navigation Information Service (CNIS), operates a radar surveillance system and maintains a constant liaison with its French counterpart at Cap Gris Nez in monitoring the traffic flow through the Dover Strait. Regular broadcasts are made at 40 minutes past each hour on VHF Channel 11, with additional broadcasts in poor visibility or as circumstances dictate. CNIS operates an aircraft to identify vessels which appear not to be complying with the International Regulations for Preventing Collisions at Sea, 1972 (as amended). All its facilities are available for SAR operations or other maritime emergencies.

CALDOVREP is a mandatory vessel reporting system under SOLAS Regulation V/11 for the Dover Strait TSS and is operated jointly by the UK and France with vessels reporting to either MRCC Dover or Cap Gris Nez. This enables Dover and Cap Gris Nez to monitor shipping movements and provide improved advice and information about navigational hazards and weather conditions. Vessels operating the Ship Movement Reporting System (MAREP) should report to stations as shown in ALRS Volume 6(1) (NP286 (1)).

- m. Radio and telephone traffic to and from Coastguard Coordination Centres is recorded for the purposes of public safety, preventing crime and to maintain operational standards of HMCG.
- n. Vessels may also make voluntary Position and Intended Movement reports to MRCCs Falmouth, Shetland and Stornoway when on passage through their areas of responsibility. In addition to regional responsibilities, MRCC Falmouth plays an important role in the GMDSS established by the IMO. MRCC Falmouth is the UK SAR Point of Contact (SPOC) for world-wide RCCs outside of the European theatre. MRCC Falmouth is also a link for Inmarsat alerts and satellite traffic. All maritime and coastal EPIRB / PLB alerts on 406.0 - 406.1 MHz from within the UK SRR, and UK registered satellite distress beacons activated at sea outside the UK SRR, are received, and processed at the UKMCC at RAF Kinloss to MRCC Falmouth for action. MRCC Falmouth also maintains the UK EPIRB Registry ([see paragraph 22 for further details of registration requirements](#)).
- o. HMCG operates SAR helicopters based at Sumburgh in the Shetland Isles, Stornoway, Lee on Solent and Portland (the flight from Portland is available during daylight hours only).
- p. The MCA has four Emergency Towing Vessels (ETVs) on charter, to provide emergency towing cover in those areas adjudged to be at higher risk from environmental damage as a result of the possible grounding of broken down vessels. The vessels are based in the Northern Isles, Minches, the Dover Strait, and the South Western Approaches respectively, and are under the operational control of the RCC Managers for those areas. The ETV based in the Dover Strait is jointly financed and controlled by the UK and France and patrols both sides of the Strait.
- q. The Coastguard Agreement for Salvage and Towage (CAST) is a standing agreement with the operators of tugs and other vessels capable of assisting MCA with towage, salvage or other work related to the saving of life or property or environmental protection. It enables the rapid deployment of suitable vessels, if available, under MCA's control and direction, with the terms and conditions of service pre-agreed.

The Royal Air Force (RAF)

- a. The Royal Air Force operates SAR fixed-wing aircraft and helicopters which are controlled for SAR through the UK Aeronautical Rescue Coordination Centre (UKARCC) at RAF Kinloss. It is responsible for coordinating and controlling rescues on behalf of military and civil aviation in the UK SRR. Control of Maritime SAR incidents arising from aviation accidents shall rest with the Rescue Authority (whether ARCC or MRCC) that initiates the response unit, until it decides that the other is better placed to continue the response. It also provides resources for civil maritime SAR in the form of Nimrod fixed wing aircraft, Sea King helicopters and RAF Mountain Rescue Teams. The Nimrod is normally on two-hour standby at Kinloss; however, it may be more appropriate to divert an airborne Nimrod or other RAF aircraft close to the scene of an emergency. A Nimrod within range of an emergency has radar, AIS and sophisticated communications equipment, making it an efficient search aircraft and an appropriate platform on which to base an On-Scene Coordinator, (OSC) or Aircraft Coordinator (ACO) for airborne rescue forces. The RAF's SAR-dedicated helicopters are positioned at 6 locations around the coasts. These RAF Sea Kings have a radius of action of approximately 240 n miles and are available at 15 minutes readiness by day and 45 minutes by night. Depending on circumstances, they can carry around 18 survivors. Military and civilian doctors are available if required, and winchmen are trained to a high level of first aid proficiency (up to paramedic standard). The operating ranges of helicopters can be considerably increased by refuelling at forward sites, from ships or offshore installations. If the situation demands, the UKARCC may arrange additional or alternative airborne support from UK military or foreign sources, as necessary. The UKARCC may, for specific tasks such as like shore searches and cliff rescues, offer to task one or more of the four RAF Mountain Rescue Teams (MRT) based on RAF stations around mainland UK.
- b. The United Kingdom Mission Control Centre (UKMCC) is co-located with the UKARCC. In addition to analysing, evaluating, advising and transferring Cospas-Sarsat satellite distress-alert traffic to its three SAR Points of Contact (SPOC) (Falmouth UKMRCC, ARCC Kinloss and Dublin MRCC), the UKMCC staff distributes globally valid 406 MHz distress-alert traffic received from its satellite tracking station in SW England and/or from other MCCs around the world. The UKMCC staff also processes 121.5 and 243 MHz reports derived from terrestrial auto-triangulation systems and from high-flying aircraft, both initially coordinated and passed to the UKMCC by Distress and Diversion Cells at Air Traffic Control Centres (ATCC). The UKMCC staff correlates such information with that received from Cospas-Sarsat satellites and updates its SPOCs accordingly.

The Royal Navy (RN)

The Royal Navy operates SAR Sea King helicopters from two Royal Naval locations (Prestwick and Culdrose). The aircraft have a radius of action of 180-220 n miles, depending on equipment fit and are at 15 minutes readiness by day and 45 minutes by night. When operationally tasked on SAR incidents, the RN SAR Sea Kings are coordinated by UKARCC. HM ships and aircraft, including non-SAR helicopters, can also assist with SAR operations.

4

Air Traffic Control Centres

Air Traffic Control Centres are often the first to receive information about aircraft in distress. All commercial and many private aircraft are able to communicate with these centres by radio and, in certain circumstances, are under an obligation to do so. They may be requested to assist in the search for a casualty at sea; by keeping a look-out along or near their normal routes, by reporting the position of the casualty if they should find it and, if possible, by guiding vessels to the rescue. High-flying commercial and military aircraft routinely monitor selected aeronautical distress channels and the military Distress and Diversion Cells located at the Scottish and London Air Traffic Control Centres forward to the UKMCC any 121.5 and 243 MHz transmissions so reported. The Distress and Diversion Cells separately monitor aeronautical distress transmissions via a ground-based network of transmitting and receiving stations around the UK. They forward information to the UKMCC/UKARCC at RAF Kinloss as appropriate.

The Royal National Lifeboat Institution (RNLI)

The RNLI is a private organisation supported entirely by voluntary contributions. The Institution operates a fleet of dedicated SAR craft around the coast of the UK, the Republic of Ireland, the Isle of Man and the Channel Islands. The service is available H24, all year round and is provided primarily by highly trained volunteer crews manning 127 All-Weather Lifeboats (ALBs), a further 205 Inshore Lifeboats (ILBs) which have a declared weather limitation and 4 hovercraft. The RNLI service is requested through the coordinating MRCC and crews are alerted by a dedicated call-out and communications system.

Every ALB is equipped with:

- Marine band VHF/FM radiotelephony and DSC equipment;
- Marine band MF radiotelephony and DSC equipment;
- HF radiotelephony and DSC equipment;
- VHF direction finding equipment capable of detecting and homing to marine VHF FM and 121.5 MHz for EPIRB, Emergency Locator Transmitters (ELT) and PLB transmissions;
- Radar, capable of activating and detecting SART transponders.

While on service these boats monitor all GMDSS DSC emergency frequencies appropriate to sea areas A1 and A2.

Inshore lifeboats and hovercraft are fitted with marine band VHF / FM radiotelephony only and maintain a listening watch on VHF Channel 16.

Lloyd's

Lloyd's, who are informed of casualties by HMCG, will advise HMCG of the position of any tugs in the vicinity that they may be aware of, and may also notify of any ocean-going tugs.

Local Officers of the Fishery Departments

Local Officers of the Fishery Departments liaise with the HMCG when reports are received of fishing vessels which are missing or overdue.

12. SAR action to be taken

The SAR action taken when a casualty occurs or is imminent depends on whether a vessel or aircraft is involved, its position and the circumstances.

a. Marine Casualties within UK SRR

(i) Vessels distant from the UK coast

If a vessel in distress transmits a distress call, other vessels receiving the alert **must** proceed to her assistance. MRCCs on hearing or receiving the distress call will re-broadcast it by all appropriate means, both terrestrial and satellite, to alert all shipping in the area and to Lloyd's. Immediate SAR action will be taken and assistance will be requested from:

- UKARCC which can call upon Royal Air Force (RAF) fixed wing aircraft and helicopters and also Royal Navy (RN) vessels and helicopters. The co-located UKMCC will closely monitor, evaluate and process EPIRB/ELT/PLB signals or alerts.
- Coastguard helicopters where appropriate.

- RNLI lifeboats or a volunteer inshore rescue craft, if appropriate, if the casualty is within their operating range.
- Shipping in the area of the casualty.
- The Automated Mutual-Assistance Vessel Rescue System (AMVER) Center in New York to establish which vessels may be in the vicinity of the casualty.
- HMCG Emergency Towing Vessel (ETVs) when on station.
- Tugs that may be available under the CAST agreement.

The MRCC will coordinate SAR action until a successful conclusion is reached, or until the search is called off, keeping all participants, including foreign SAR authorities where necessary, informed. Tug companies, on being alerted by Lloyd's, or HMCG may send tugs.

(ii) Vessels and Incidents close to and on the UK coast and shoreline.

HMCG may be informed of an actual or imminent distress situation by VHF or MF radio, satellite distress beacon or 999 (or 112) emergency telephone call. In every case, the MRCC receiving the initial distress call automatically becomes coordinating station for the incident, and takes action as in [sub-paragraph a\(i\)](#) above including the Coastguard Rescue Service and other inshore SAR assets.

(iii) Search and Rescue cooperation plans.

Under Regulation 7 of the Merchant Shipping (Safety of Navigation) Regulations 2002, a plan for cooperation with the appropriate SAR Services must be drawn up and carried by all passenger vessels using UK waters. The plan must be agreed with the SAR Service relevant to the vessel's area of operation. Full details are available on the MCA website: www.mcga.gov.uk or from Maritime and Coastguard Agency, Communication & Innovation Branch, Spring Place, 105 Commercial Road, Southampton, SO15 1EG. Tel: +44 (0)2380 329521 Fax: +44 (0)2380 329204.

b. Aircraft Casualties

In the case of an aircraft casualty at sea, the first intimation that the aircraft is in trouble will normally be received by an Air Traffic Control Centre which will pass the information to the UKARCC. The latter is responsible for the tasking and despatch of rescue aircraft and helicopters, and will inform the appropriate MRCC (if it is thought that Maritime SAR assets may be able to assist or that a broadcast message to shipping is required) and/or the appropriate Royal Naval authorities. Control of Maritime SAR incidents arising from aviation accidents shall rest with the Rescue Authority (whether ARCC or MRCC), that initiates the response unit, until it decides that the other is better placed to continue the response.

It will be seen that the circumstances attending a casualty vary considerably and the speed with which rescue measures can be taken depends on a rapid, yet careful, appreciation of the situation by those concerned, particularly by the authorities who have to initiate SAR action. However, although much can often be done by the shore authorities, the coordination and direction of operations at the scene of the casualty will at times be a matter primarily for the master of the distressed vessel or the master of another vessel going to her rescue, or the pilot of a SAR aircraft. The degree to which reliance must be placed on those at the scene will usually depend on the effectiveness of the communications and the distance from the coast at which the casualty occurs; the further from the coast, the greater the reliance of on-scene coordination.

13. Guidance to masters of Vessels

- Guidance to masters on the assistance to be given during emergencies at sea is contained in the IAMSAR Manual obtainable from the International Maritime Organization, 4 Albert Embankment, London SE1 7SR. The carriage of the IAMSAR Manual Volume III aboard all SOLAS vessels became mandatory on 1st January 2004. HMCG also organise a series of SAR awareness seminars each year. These seminars are intended for masters and Officers of merchant vessels, offshore oil industry personnel and key on-shore personnel. Further information may be obtained from the MCA Training Centre, Tel: +44 (0)1425 282700, Fax: +44 (0)1425 282761.
- There will be occasions when, perhaps due to mechanical, hull or other defect, a master may have cause for concern for the ultimate safety of his vessel but which concern at the time does not, in the master's judgement, require distress or urgency procedures. It would, in these circumstances, nevertheless be prudent for the master to inform HMCG (or the appropriate SAR authority if outside the UK SRR) of the problem so that, should the situation subsequently deteriorate to distress or urgency, time is not lost ashore in assessing the situation and despatching the necessary assistance. In such cases a Defect Report (DEFREP) is to be sent to the nearest Coastguard Coordination Centre (see details on MAREP in ALRS Volume 6(1) (NP286 (1))).
- Masters should not hesitate to use the urgency signal in situations where the imminence of danger to the vessel cannot be reliably established.

STATUTORY DUTIES OF MASTERS OF VESSELS

| 14. Duty of vessel to assist the other in case of collision

Merchant Shipping Act, 1995, Section 92 states:

- (1) In every case of collision between two ships, it shall be the duty of the master of each ship, if and so far as he can do so without danger to his own ship, crew and passengers (if any).
 - (a) to render to the other ship, its master, crew and passengers (if any) such assistance as may be practicable, and may be necessary to save them from any danger caused by the collision, and to stay by the other ship until he has ascertained that it has no need of further assistance; and:
 - (b) to give to the master of the other ship the name of his own ship and also the names of the ports from which it comes and to which it is bound.
- (2) The duties imposed on the master of a ship by subsection (1) above apply to the masters of UK ships and to the masters of foreign ships when in UK waters.
- (3) The failure of the master of a ship to comply with the provisions of this section shall not raise any presumption of law that the collision was caused by his wrongful act, neglect, or default.
- (4) If the master fails without reasonable excuse to comply with this section, he shall
 - (a) in the case of a failure to comply with subsection (1)(a) above, be liable
 - (i) on summary conviction, to a fine not exceeding £50,000 or imprisonment for a term not exceeding six months or both;
 - (ii) on conviction on indictment, to a fine or imprisonment for a term not exceeding two years or both;

and
 - (b) in the case of a failure to comply with subsection (1)(b) above, or be liable
 - (i) on summary conviction, to a fine not exceeding the statutory maximum;
 - (ii) on conviction on indictment, to a fine;

and in either case if he is a certified officer, an inquiry into his conduct may be held, and his certificate cancelled or suspended.

| 15. Duty to assist vessels or aircraft in distress

Merchant Shipping Act, 1995, Section 93 (as amended by SI no. 1691 - The Merchant Shipping (Distress Message) Regulations 1998) states:

- (1) Subject to [paragraph \(2\)](#) below, it shall be the duty of the master of a ship, on receiving at sea a distress alert, to proceed with all speed to the assistance of the persons in distress, informing them or the appropriate SAR services, if possible, that he is doing so.
- (2) The master of the ship need not so proceed if, having regard to the IAMSAR Manual:—
 - (a) the ship is unable to do so;
 - (b) in the special circumstances of the case, he considers it unreasonable or unnecessary to do so; or
 - (c) he is released from the duty pursuant to regulations in [paragraphs \(5\)](#) and [\(6\)](#) below.
- (3) Where the master of a ship has received a distress alert at sea but does not proceed to the assistance of the persons in distress he shall:—
 - (a) record in the ship's log book the reason for not so proceeding; and
 - (b) if the master has responded to the distress alert by informing the appropriate SAR services that he is proceeding to the assistance of persons in distress, inform those SAR services as soon as possible of his decision not to proceed.
- (4) Where the master of any ship in distress has, or the SAR services have, requisitioned any ship that has answered a distress alert, it shall be the duty of the master of the requisitioned ship to comply with the requisition by continuing to proceed with all speed to the assistance of the persons in distress.

Release from duty

- (5) A master shall be released from the duty imposed by regulation in [paragraph \(1\)](#) above if he is informed –
- (a) of the requisition of one or more ships other than his own; and
 - (b) that the requisition is being complied with by at least one other ship requisitioned.
- (6) A master shall be released from the duty imposed by regulation in [paragraph \(1\)](#) above and any duty imposed by regulation in [paragraph \(4\)](#) above, if he is informed by the persons in distress, by the master of any ship that has reached the persons in distress, or by the appropriate SAR services coordinating the rescue, that assistance is no longer required.

Penalties

- (7) If a master of a ship fails to comply with these Regulations he shall be guilty of an offence punishable on summary conviction by a fine not exceeding the statutory maximum and on conviction on indictment by imprisonment for a term not exceeding two years or a fine, or both.

Salvage rights

- (8) Compliance by a master of a ship with the requirements of these Regulations shall not affect his right, or the right of any other person, to salvage.

| 16. Reports of shipping accidents

- a. The requirements covering the reporting of accidents, including the definition of “accident”, are given in Merchant Shipping Notice No. MGN 115 and the Merchant Shipping (Accident Reporting and Investigation) Regulations 1999 (SI 1999 No. 162567).
- b. Masters should make themselves familiar with these requirements in order to take correct and prompt action should such an accident occur.
- c. Mariners are also reminded of their duty in compliance with the Merchant Shipping (Safety of Navigation) Regulations, 2002 No 473, to report to vessels in the vicinity and to the appropriate shore-based authority through a CRS should they encounter a dangerous derelict or other danger to navigation. Masters are also urged to report to the nearest CRS (HMCG in UK) each time debris, which may be floating wreckage, is seen at sea.

| 17. Duties of Masters — official log books

- a. Stations on board vessels for which a GMDSS installation is required shall be provided with a log in which the following are recorded, together with the time of their occurrence, unless administrations have adopted other arrangements for recording all information which the log should contain:
 - (i) a summary of communications relating to distress, urgency and safety traffic;
 - (ii) a reference to important service incidents;
 - (iii) if the vessel’s rules permit, the position of the vessel at least once a day.
- b. All accidents should be entered in the official log book as required by the Merchant Shipping (Official Log Books) Regulations. A record of every signal of distress or a message that a vessel, aircraft or person is in distress at sea, observed or received should also be entered.
- c. In the United Kingdom, the requirements covering the recording of GMDSS communications in a dedicated Radio Log are given in Marine Guidance Note 51.
- d. Where the master, on receiving at sea a signal of distress or information from any source that a vessel or aircraft is in distress, is unable, or in the special circumstances of the case considers it unreasonable or unnecessary, to go to the assistance of the persons in distress (in accordance with the Merchant Shipping (Distress Message) Regulations 1998 which relate to a master’s obligation to assist vessels etc. in distress) a statement of his reasons for not going to the assistance of those persons should also be entered.

VESSELS IN DISTRESS

| 18. Statutory distress signals

- a. Annex IV of the Merchant Shipping Notice MSN 1781 – Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 1996 and International Regulations for Preventing Collisions at Sea 1972, as amended, lists the signals to be used or exhibited either together or separately to indicate distress and need of assistance. These are:
- (i) a gun or other explosive signal fired at intervals of about a minute;
 - (ii) a continuous sounding with any fog signalling apparatus;
 - (iii) rockets or shells, throwing red stars fired one at a time at short intervals;
 - (iv) a signal made by visual or by any other means consisting of the group ●●●— — ●●● (SOS) in the Morse Code;
 - (v) a signal sent by radiotelephony consisting of the spoken word “MAYDAY”;
 - (vi) the International Code Signal of distress indicated by NC;
 - (vii) a signal consisting of a square flag having above or below it a ball or anything resembling a ball;
 - (viii) flames on the vessel (as from a burning tar barrel, oil barrel, etc.);
 - (ix) a rocket parachute flare or a hand flare showing a red light;
 - (x) a smoke signal giving off orange coloured smoke;
 - (xi) slowly and repeatedly raising and lowering arms outstretched to each side;
 - (xii) signals transmitted by Emergency Position Indicating Radio Beacons (EPIRBs), Emergency Locator Transmitter (ELT) if an aircraft or Personal Locator Beacons (PLB);
 - (xiii) approved signals transmitted by radio communications systems, including survival craft transponders.
- b. The use or exhibition of any of the foregoing signals except for the purpose of indicating distress and need of assistance and the use of other signals which may be confused with any of the above signals is prohibited.
- c. Attention is drawn to the relevant sections of the International Code of Signals, the IAMSAR Manual and the following signals:
- (i) a piece of orange coloured canvas with either a black square and circle or other appropriate symbol (for identification from the air);
 - (ii) a dye marker.
- d. The requirement for the carriage of vessel’s distress signals for all classes of vessel including their associated survival craft, are contained in either:
- (i) The Merchant Shipping (Life Saving Appliances for Ships other than Ships of Classes III to VI(A)) Regulations 1999 as amended, SI No. 2721;
 - (ii) The Merchant Shipping (Life Saving Appliances for Passenger Ships of Classes III to VI(A)) Regulations 1999, as amended, SI No. 2723.
- e. *Note:*
- (i) Not less than twelve rocket parachute flares shall be carried by Classes I, II, II(A), III, IV, VII, VII(T), VIII, VIII(A), VIII(T), VIII(A)(T), IX, XI.
 - (ii) Classes VI, IX(A), IX(A)(T) and XII are allowed to carry alternative distress signals.
 - (iii) Survival craft are generally required to carry; four rocket parachute flares, six hand flares and two buoyant smoke signals.
 - (iv) Class V vessels are not required to carry vessels distress signals.
 - (v) The equivalent rules for UK registered fishing vessels are contained in Rules 76–81 and Schedule 18 of the Fishing Vessels (Safety Provisions) Rules 1975.

| 19. Authority to use distress signals

- a. Rule 3 of the SI 1996 No. 75, Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations, 1996 provides as follows:
- (i) The signals of distress which shall be used by vessels to which regulation 2(1)(a)¹ of these Regulations apply are those set out in Annex IV to the International Regulations².
 - (ii) No signal of distress shall be used by any vessel unless the master of the vessel so orders.

- (iii) The master shall not order any signal of distress to be used by his vessel unless he is satisfied:
- that his vessel is in serious and imminent danger, or that another vessel or an aircraft or person is in serious and imminent danger and cannot of itself send that signal; and
 - that the vessel in danger (whether his own vessel or another vessel) or the aircraft or person in danger, as the case may be, requires immediate assistance in addition to any assistance then available.
- (iv) The master of a vessel which has sent any signal of distress by means of radio or other means, shall cause that signal to be revoked by all appropriate means as soon as he is satisfied that the vessel or aircraft to which the signal relates is no longer in need of assistance as aforesaid.

¹ UK vessels wherever they may be, and other vessels while within the UK or territorial waters thereof.

² International Regulations for Preventing Collisions at Sea 1972 as amended.

- b. Masters and others in charge afloat are reminded of the importance of making a properly authorised signal of distress whenever a vessel or person is in grave and imminent danger, even when they believe that assistance has already been assured.
- c. Masters are also reminded of the need to cancel a distress call if the vessel is no longer in danger. Failure to do this has, on occasions, resulted in serious loss of time to other vessels and has in some instances caused needless anxiety to relatives and friends of those on board, because failure to find or establish communication with the vessel sending the signal has led to the belief that she has foundered. **Attention is particularly drawn to the measures to prevent false alerts on GMDSS DSC frequencies given in Marine Guidance Note 67.**
- d. Vessels have also, on occasion, used red flares to warn off other vessels; the flares have been sighted from a distance and an extensive SAR operation has been mounted. This is illegal and it is also unnecessary: the use of warning signals is permitted provided that they are quite distinct from distress signals and for this purpose white flares are manufactured and are readily available through chandlers. A well trained Aldis lamp supplemented by the vessel's whistle or siren is also often effective.

| 20. Need for care in the use of certain distress signals

- a. Two of the statutory distress signals, namely "a continuous sounding with any fog signalling apparatus" and "flames on the vessel" could on occasions be misunderstood and it is recommended that where more easily recognised distress signals can be made the above mentioned signals should not be used.
- b. Distress signals should be as distinctive as possible, so that they may be recognised at once and assistance despatched without delay. Thus, instead of making an indefinite succession of blasts on the fog signalling apparatus when in distress, mariners should make the "continuous sounding" by repeating the Morse signal SOS (●●● — — ●●●) on the whistle or other sound signalling equipment. If this is done there can be no mistake as to the meaning of the signal. Similarly, by night, if signalling for help by means of a lamp or flashing light the same signal SOS should always be used.
- c. In the case of the "flames on the vessel" signal, unless the flames making the signal are sufficiently large to attract immediate attention, their chances of being recognised as a distress signal are very poor. The best visual distress signals are rocket parachute flares or hand flares showing red lights or rockets emitting red stars. Arrangements should be made to steady rockets to ensure their satisfactory flight when fired.

| 21. Maintenance of line-throwing rockets, distress rockets and smoke signals

- a. Line-throwing rockets, distress rockets, red flares, etc., are liable to deteriorate if kept for a long period, and they should be condemned and replaced immediately after a period of three years from the date of manufacture. Special care should be taken regarding the disposal of these obsolete pyrotechnics. On no account should they be used for testing or practice purposes, or landed for any purpose. They should be kept in a safe place until the opportunity occurs for disposing of them ashore by one of the following means:
- (i) returning them to the supplier directly, or via their local representative;
 - (ii) requesting a lifecraft service station in the UK or overseas to accept any of the vessel's out of date pyrotechnics when lifecrafts are being sent ashore for servicing; lifecraft service stations deal with the disposal of expired pyrotechnics on a regular basis and have arrangements locally to do this;
 - (iii) contacting the local police who will be able to arrange disposal through a military establishment.

Note: These measures accord with Merchant Shipping Notice MGN 287.

- b. Lifebuoy smoke markers should also be replaced after three years. They should be examined carefully for corrosion or other defects and replaced earlier if necessary.

22. Emergency Position Indicating Radio Beacons (EPIRBs) and Personal Locator Beacons (PLBs)

- a. Vessels and mariners are increasingly carrying EPIRBs and PLBs either on a voluntary or mandatory basis. These devices operate on emergency frequencies between 406.0 - 406.1 MHz. The 406 MHz distress beacon alerts are detected by the Cospas-Sarsat satellite system and distress alert data is passed via ground tracking stations (Local User Terminals (LUTs)) to the Mission Control Centres (MCCs) which pass the alert data to the appropriate SAR authority. The UKMCC at Kinloss informs HMCG and UKARCC who coordinate SAR arrangements. In accordance with Merchant Shipping Notice MSN 1732 (M&F), Owners, Masters and Skippers of all (UK) vessels that carry EPIRBs and/or PLBs must ensure that:
- (i) any 406 MHz EPIRB fitted to a UK vessel or UK-coded PLB carried by mariners must be registered with the UK EPIRB Registry at MRCC Falmouth; as must UK-coded 406 MHz PLBs used in the maritime environment;
 - (ii) any changes regarding an EPIRB or PLB already registered must be notified;

Note: it is an offence by the owner and or the operator if either of the above requirements are not carried out.

- b. The above registration should be sent to: **EPIRB Registration, MRCC Falmouth, MCA, Pendennis Point, Castle Drive, Falmouth, Cornwall TR1 4WZ** on the prescribed form supplied by the manufacturers, or available from the EPIRB registry. 406 MHz beacons installed on aircraft are known as Emergency Locator Transmitters (ELTs). Details of ELTs and PLBs carried by British registered aircraft are maintained on the UK ELT Registry at UKMCC, UKARCC, RAF Kinloss, Forres, Moray IV36 3UH. Although the 121.5 MHz and to a lesser extent 243 MHz frequencies are monitored by Air Traffic Control Centres and by many aircraft, they are not monitored by vessels or HMCG. Within the northern hemisphere, particularly in the North Atlantic, there is good probability that beacon homing transmissions on 121.5 MHz will be received by overflying aircraft on the busy commercial air routes. It should be noted that Cospas-Sarsat satellite processing of the 121.5 and 243.0 MHz ceased on 1st February 2009.
- c. Under the Fishing Vessels (Life Saving Appliances) Regulations 1988, it has been mandatory since 15th April 1992 for all fishing vessels carrying a 121.5 MHz distress beacon to carry one operating on 406.0 - 406.1 MHz. Any EPIRBs installed after 15th March 1988 must be of the 406 MHz type with auxiliary 121.5 MHz homing transmitters.
- d. Once an 406 MHz alert has been received by the SAR authorities, the transmissions on 121.5 and 243 MHz are essential as homing aids in connection with SAR aircraft and they can greatly reduce the time taken to locate the vessel in distress (see paragraphs 31.f., 32.k. and APPENDIX B). 406 MHz EPIRBs / PLBs are also equipped with an auxiliary 121.5 MHz transmitter (some with both 121.5 and 243 MHz) for homing purposes, or a SAR transponder. Many SAR aircraft are fitted with equipment which can identify and home in on signals on these frequencies at distances of up to 50 n miles. Although still in the minority, an increasing number of SAR-dedicated helicopters and fixed-wing aircraft have 406 MHz homing equipment. Cospas-Sarsat beacons are useful supplements to conventional maritime radio equipment. Once an EPIRB or PLB has been activated for a genuine SAR incident, it should not be switched off until the casualties have been located and rescued. It is important that, without unnecessary risk to rescuers, beacons should be switched off as soon as possible, so that searching aircraft can concentrate on missing casualties without confusing transmissions from rescued casualties' beacons.
- e. It is recommended that the beacons be sited in accordance with the statutory requirements, where these exist, or the manufacturer's instructions. Great care should be exercised in finding suitable unencumbered sites to place float-free EPIRBs and considerations should also be given to the accessibility of all EPIRBs for transfer to survival craft and/or manual activation.
- f. It is very important that owners and potential users of the beacons are aware of the possible consequences of misuse. The frequencies 121.5 MHz and/or 243 MHz are the frequencies used by aircraft in an emergency and it is possible that misuse or accidental activation of a beacon could mask a genuine alert by an aircraft in trouble. Also, with regards to 121.5 MHz and 243 MHz beacon alerts, the SAR services have no way of distinguishing genuine distress calls from false alarms. Once these services are aware, they will respond with very expensive resources that may jeopardise their ability to respond to genuine distress situations elsewhere. It is vital that any accidental triggering of an EPIRB, ELT or PLB should be reported to the UKMCC (Tel: +44 (0)1309 678304) or the closest known MRCC immediately. Prompt and responsible reporting of accidental activation will be sympathetically received by the SAR authorities.

Cospas-Sarsat - Phase-Out of 121.5/243 MHz satellite alerting services

- g. Since 1 February 2009, beacons primarily using 121.5 and 243 MHz have been rendered obsolete as those frequencies are no longer monitored by Cospas-Sarsat satellites. These older beacons have now been entirely replaced by 406 MHz beacons that use the 121.5 and 243 MHz frequencies only for the final stage of short-range homing to casualties. 121.5 MHz is mandated for homing and 243 MHz may be regarded as an additional extra homing frequency
Note: Further details may be found on the document C/S R.010 is available for downloading from the Cospas-Sarsat website at www.cospas-sarsat.org

- h. In the UK, an aeroplane operating for the purposes of public transport, with Certificate of Airworthiness (C of A) first issued before 1 Jan 2002, needs either a portable or an automatic 406 MHz ELT with a homing frequency of 121.5 MHz and if the C of A is issued after that date it must have an automatic ELT. Helicopters, according to their performance and type of operation will be required to carry either an automatic or automatically deployable ELT. Schedule 4 of Air Navigation Order 2005 is the authoritative UK document on the subject. The Council of the International Civil Aviation Organization (ICAO) agreed that Cospas-Sarsat processing of 121.5 MHz ELTs could be discontinued from 2008.

23. Listening watchkeeping procedures

- a. In accordance with the Merchant Shipping (Radio Installations) Regulations 1998 and the Merchant Shipping (Radio (Fishing Vessels) Regulations 1999, all UK passenger vessels, cargo vessels of 300 GT and upwards and fishing vessels of 12 metres or more in length must maintain a continuous radio watch in accordance with the relevant provisions of ITU Radio Regulations and the SOLAS Convention appropriate to the sea area in which the vessel is sailing and the equipment fitted, namely that:
 - (i) ships equipped for sailing in sea area A1 only will maintain a DSC watch on VHF Channel 70 with a dedicated DSC watchkeeping receiver;
 - (ii) ships equipped for sailing outside sea area A1 will also maintain a DSC watch as appropriate on the distress and safety frequency 2187.5 kHz with a dedicated DSC watchkeeping receiver and, if the ship is fitted with an HF radio installation, on the distress and safety frequency 8414.5 kHz and, additionally, on at least one of the distress and safety frequencies 4207.5 kHz, 6312 kHz, 12,577 kHz or 16804.5 kHz, appropriate to the season, time of day and the geographical position of the ship (this watch may be kept by means of a dedicated DSC scanning receiver);
 - (iii) ships fitted with a GMDSS compliant ship earth station will maintain watch for satellite distress alerts.
- b. When practicable, every such vessel shall keep a continuous radiotelephone distress and safety watch on the frequency VHF Channel 16 and guard VHF Channel 13, for communications related to safety of navigation.
- c. A continuous watch for broadcasts of maritime safety information shall also be kept, for the area in which the vessel is sailing, by:
 - (i) NAVTEX (518 kHz);
 - (ii) Inmarsat C or EGC SafetyNET Receiver.

Weather and Navigational Warnings are also transmitted at fixed times throughout the day by coast stations on MF, HF and VHF. Further information is available in ALRS Volumes 3 (NP283) and 5 (NP285) and the ITU *List of Coast Stations and Special Service Stations*.

- d. Any vessel which receives a distress message concerning a mobile station which is beyond any possible doubt in its vicinity must acknowledge receipt on the appropriate distress and safety working frequency. If however the mobile station in distress is beyond any possible doubt not in the immediate vicinity, a short interval of time must be allowed before acknowledging receipt, so that vessels nearer to the station in distress can answer and acknowledge receipt without interference. The radio operator on watch should alert the master of the vessel and the radio operator designated as having primary responsibility for radiocommunications during distress incidents promptly to the receipt of a “Distress Alert” and the content of any subsequent communications. The radio operator designated as having primary responsibility for radiocommunications during distress incidents will then evaluate the situation and immediately assume responsibility for applying the relevant procedures of the ITU Radio Regulations and ITU-R Recommendations, having regard to the proximity of an RCC or CRS and the means of communication available. A summary of the distress traffic must be entered into the radio records (log book) as noted above in [paragraph 17](#). Any vessel which is not in a position to render assistance and which has heard a distress message which has not been immediately acknowledged, must take all possible steps to attract the attention of the shore-based authorities or of other vessels which are in a better position to render assistance. Those coast stations maintaining a continuous watch on the DSC distress and safety frequencies are listed in the GMDSS Master Plan, the ITU *List of Coast Station and Special Service Stations* and in various national publications, e.g. ALRS Volumes 1 (NP281) and 5 (NP285). The CRS in the UK are HMCG MRCCs.
- e. Detailed radiocommunication watchkeeping requirements are set out in Parts A-VIII and B-VIII of the STCW Code.

24. Survival craft equipment

- a. Most British vessels and fishing vessels are provided with radio equipment, portable or otherwise, for use in the vessel’s survival craft. This consists of:
 - (i) Portable VHF radio apparatus for communications between survival craft and to/from rescue craft.
 - (ii) 406 MHz EPIRB and/or PLB, which can also be used for locating survivors (see ALRS Volume 5 (NP285) chapter 2).
 - (iii) Search and Rescue Transponder (SART) for homing by vessels and aircraft (See ALRS Volume 5 (NP285) chapter 6).

25. Vessels reported missing or overdue

- a. *Other than fishing vessels.* Owners of vessels—other than fishing vessels—who are anxious for the safety of one of their vessels owing to the absence of radio reports or who fail to get in touch with her direct or to obtain news of her from other sources are advised to contact the nearest HMCg Coordination Centre. Action will be taken to locate the vessel via all means of communication, Lloyd's Intelligence, and SARNET (an extension of Inmarsat for the exclusive use of RCCs for the promulgation of information and requesting information from other RCCs). The following information about the vessel should be made available:
- (i) Name of vessel, call sign and MMSI Number
 - (ii) Port of registry
 - (iii) Type and size of vessel
 - (iv) Communications fitted if exempt from the GMDSS regulations
 - (v) Last and next ports of call
 - (vi) Last known position including date and time
 - (vii) Anticipated track, course and speed if known
 - (viii) Number of persons on board
 - (ix) Any other relevant information
- b. *Fishing Vessels.* HMCg is responsible for initiating SAR measures in relation to overdue fishing vessels. When an owner, or any other person, considers a fishing vessel to be missing or overdue, a report should be made directly to the nearest MRCC, giving the following information about the vessel:
- (i) Name of vessel and Port letter and number.
 - (ii) Description.
 - (iii) Whether GMDSS fitted (MMSI Number), and if not, what communications equipment is carried, giving call sign and frequency on which she operates.
 - (iv) Last known position.
 - (v) Date last seen, or heard on the air.
 - (vi) Probable fishing area.
 - (vii) Full details of all safety equipment carried.
 - (viii) Number of persons on board.
 - (ix) Any other relevant information.
- c. A list of the MRCCs, together with telephone, fax and telex numbers, is given in [APPENDIX C](#).
- d. Owners and/or agents should not delay in making the necessary report where they have any doubts concerning the safety of vessels.

26. Counter pollution and salvage

The Counter Pollution and Salvage branch of the UK Maritime and Coastguard Agency (MCA) is responsible for and will respond to oil and chemical spills, assess reports of marine pollution and potential pollution and take appropriate action. It also provides scientific and technical advice on shore line clean up, and training for local authority oil pollution officers. The branch will assess reports of vessels broken down particularly those likely to cause serious harm to the environment or UK waters. It is empowered through the Secretary of State's Representative (SOSREP) to exercise intervention powers to whatever extent is required in the public interest.

27. Intervention powers

The Secretary of State's statutory powers of intervention are now to be found in Schedule 3A to the Merchant Shipping Act 1995 as amended by the Marine Safety Act (MSA) 2003. This legislation has consolidated and extended the powers of intervention that were established in the original draft of the MSA 1995 and extended by the Merchant Shipping and Maritime Security Act 1997. The powers relate to incidents where there is a risk to safety (within UK territorial waters) and/or pollution by a hazardous substance (anywhere within the UK Pollution Control Zone).

Hazardous substances include:

- Oil (defined in Section 151(1) of the MSA 1995).
- Any other substance prescribed by Statutory Instrument (currently listed in The Merchant Shipping (Prevention of Pollution: Substances other than Oil) (Intervention) Order 1997 SI No 1997/1869).
- Any other substance which creates a hazard to human health, harms living resources or marine life, damages amenities or interferes with lawful use of the sea.

The “trigger situation” which renders these powers exercisable is one in which an “accident” (e.g. collision of ships, a stranding, another incident of navigation or another event, whether on board a ship or not, which results in material damage to a ship or its cargo or is an imminent threat of material damage to a ship or its cargo) has occurred to or in the ship and has created a risk to safety (in UK waters only) or a risk of pollution by a hazardous substance and, in the opinion of the Secretary of State, a direction is necessary to remove or reduce the risk.

Directions for the purposes above can be given to owners of ships, persons in charge of ships, harbour masters or harbour authorities. The nature of these directions could not be wider ranging and may require them to take, or not take, any action of any kind whatsoever in relation to a ship or anything in, on or towed by the ship, or any person on the ship.

Directions can also be given to persons in control of coastal land or premises requiring them to grant access to, or use of facilities in relation to a ship or any person or thing which is, or was, on the ship. This includes permitting persons to land, making facilities available for undertaking repairs or other works and making facilities available for the landing, storage and disposal of cargo or of other things.

In addition, if a person does not comply with a Direction, or if the Secretary of State feels that giving a Direction would be unlikely to achieve a sufficient result, the Secretary of State can authorise persons to take the action on his behalf. This includes entering premises on land, boarding ships and making arrangements for the destruction of a ship.

There are similar powers of intervention in cases where there is pollution, or risk of pollution, in relation to offshore installations. These are contained in The Offshore Installations (Emergency Pollution Control) Regulations 2002, SI no 2002/1861.

The UK has appointed the Secretary of State’s Representative, Maritime Salvage and Intervention (SOSREP) to act on behalf of the Secretary of State in all matters of intervention and salvage. The SOSREP works closely with the MCA, HMCG and the Department of Trade and Industry and is contactable on a 24 x 7 basis through a duty Counter Pollution and Salvage Officer system.

SOSREP has the sole responsibility to intervene and issue Directions. However, he may also take action himself, or authorise action to be taken by others in lieu of a Direction.

The role of the SOSREP is to exercise “ultimate control” over salvage operations acting in the over-riding interests of the United Kingdom and the environment.

Once SOSREP or HMCG has decided that the “trigger point” for intervention is nearing and it may be necessary to intervene, he will advise the parties in charge of the casualty, or to whom the Directions are likely to be given, accordingly. Initial intervention is likely to follow a prior warning to the casualty that the powers of intervention may be exercised. This will be accompanied by an offer of help from the MCA and a request for information about the master’s intentions.

Offences in relation to non-compliance with Directions and obstructing persons enforcing a Direction are set out in Paragraphs 5 – 7 of Schedule 3A to the Merchant Shipping Act 1995 as amended by the Marine Safety Act 2003. Persons guilty of such offences are liable to a fine.

| Similar powers are also exercisable by the Government of the Republic of Ireland.

| 28. Visual signals used between shore stations in the UK and vessels in distress

In the event of a vessel being in distress off or stranded on the coast of the UK, the following signals may be used by life-saving stations when communicating with her, and by the vessel when communicating with life-saving stations.

- a. Replies from life-saving stations or maritime rescue units to distress signals made by a vessel or person:

| <i>Signals</i> | <i>Signification</i> |
|---|--|
| <p>By day: Orange smoke signal or combined light and sound signal (thunderlight) consisting of three single signals which are fired at intervals of approximately one minute.</p> <p>By night: White star rocket consisting of three single signals which are fired at intervals of approximately one minute.</p> <p><i>Note:</i> If necessary the day signals may be given at night or the night signals by day.</p> | <p>You are seen — assistance will be given as soon as possible</p> <p>(Repetition of such signals shall have the same meaning)</p> |

b. Landing signals for the guidance of small boats with crews or persons in distress:

| <i>Signals</i> | <i>Signification</i> |
|--|---|
| <p>By day: Vertical motion of a white flag or the arms, or signalling the code letter K (—●—) given by light or sound signal apparatus.</p> <p>By night: Vertical motion of a white light or flare, or signalling the code letter K (—●—) given by light or sound signal apparatus. A range (indication of direction) may be given by placing a steady white light or flare at a lower level and in line with the observer.</p> | This is the best place to land |
| <p>By day: Horizontal motion of a white flag or arms extended horizontally or signalling the code letter S (●●●) given by light or sound signal apparatus.</p> <p>By night: Horizontal motion of a white light or flare or signalling the code letter S (●●●) given by light or sound signal apparatus.</p> | Landing here highly dangerous |
| <p>By day: Horizontal motion of a white flag, followed by the placing of the white flag in the ground and the carrying of another white flag in the direction to be indicated; and/or a white star signal in the direction towards the better landing place; or signalling the code letter S (●●●) followed by the code letter R (●—●) if a better landing place for the craft in distress is located more to the right in the direction of approach; or signalling the code letter L(●—●●) if a better landing place for the craft in distress is located more to the left in the direction of approach.</p> <p>By night: Horizontal motion of a white light or flare, followed by the placing of the white light or flare on the ground and the carrying of another white light or flare in the direction to be indicated; and/or a white star signal in the direction towards the better landing place or signalling the code letter S (●●●) followed by code letter R (●—●) if a better landing place for the craft in distress is located more to the right in the direction of approach; or signalling the code letter L(●—●●) if a better landing place for the craft in distress is located more to the left in the direction of approach.</p> | Landing here highly dangerous. A more favourable location for landing is in the direction indicated |

c. Signals to be employed in connection with the use of shore life-saving apparatus:

| <i>Signals</i> | <i>Signification</i> |
|--|---|
| <p>By day: Vertical motion of a white flag or the arms.</p> <p>By night: Vertical motion of a white flag or flare.</p> | <p>In general — “Affirmative”</p> <p>Specifically — “Rocket line is held” “Tail block is made fast” “Man is in breeches buoy” “Haul away”</p> |
| <p>By day: Horizontal motion of a white flag, or the arms, with arms extended horizontally.</p> <p>By night: Horizontal motion of a white flag or flare.</p> | <p>In general — “Negative”</p> <p>Specifically — “Slack away” “Avast hauling”</p> |

d. Signals to be used to warn a vessel which is standing into danger:

| <i>Signals</i> | <i>Signification</i> |
|---|-------------------------------|
| <p>The International Code Signals U or NF.</p> <p>The letter U (●●—) flashed by lamp or made by fog horn or whistle, etc.</p> | “You are running into danger” |

If it should prove necessary, the attention of the vessel is called to these signals by a white flare, a rocket showing white stars on bursting, or an explosive sound signal.

29. Cooperation between a vessel's crew and shore rescue teams in the use of rocket rescue equipment.

Note: Rocket rescue equipment is no longer used by HMCG.

- a. Should lives be in danger and your vessel be in a position where rescue using the rocket rescue equipment is possible, a rocket with line attached will be fired from the shore across your vessel. Get hold of this line as soon as you can. When you have got hold of it, signal to the shore as indicated in [paragraph 28.c](#) above.
- b. Should your vessel carry a line-throwing appliance, it may be preferable to use this and fire a line ashore, but this should not be done without first consulting the rescue company on shore. If this method is used, the rocket line may not be of sufficient strength to haul out the whip and jackstay and those on shore will secure it to a stouter rocket line. When this is done, they will signal as indicated in [paragraph 28.c](#) above. On seeing the signal, haul in the line which was fired from the vessel until the stouter line is on board.
- c. Then, when the rocket line is held, make the appropriate signal to the shore ([paragraph 28.c](#)) and proceed as follows:
 - (i) When you see the appropriate signal, i.e. "haul away", made from the shore, haul upon the rocket line until you get a tail block with an endless fall rove through it (called the "whip"), and with a jackstay attached to the becket of the tail block.
 - (ii) Cut or cast off the rocket line and make the tail block fast, close up to the mast or other convenient position, bearing in mind that the fall should be kept clear from chafing any part of the vessel. Before cutting or casting off the rocket line, make sure that you have the tail attached to the block well in hand. When the tail block is made fast, signal to the shore again (as in [paragraph 28.c](#)).
 - (iii) As soon as this signal is seen, the shore party will then set the jackstay taut, and by means of the whip will haul the breeches buoy out to the vessel. The person to be rescued should get in to the breeches buoy and sit well down. When he is secure he should signal again to the shore as indicated in [paragraph 28.c](#) and the men on shore will haul the person in the breeches buoy to the shore. When he is landed the empty breeches buoy will be hauled back to the vessel. This operation will be repeated until all persons are landed.
 - (iv) During the course of the operations should it be necessary to signal, either from your vessel to the shore, or from the shore to your vessel, to "Slack away" or "Avast hauling" this should be done as indicated in [paragraph 28.c](#).
- d. It may sometimes happen that the state of the weather and/or the condition or position of the vessel will require the aforementioned procedures to be modified. Where this is the case, the rescue company will always attempt to advise you of the procedures to be followed.
- e. Normally, all women, children, passengers and helpless persons should be landed before the crew of the vessel but there may be occasions when, perhaps because of communications difficulties between the casualty and the rescue company ashore, it would be sensible if the first person to be landed were a responsible member of the vessel's crew.
- f. A poster drawing attention to the use of this equipment and other life saving signals is published by the Department of Transport as SOLAS No. 1 which is obtained from Marine Offices in the UK.

30. Use of rocket line-throwing apparatus between vessels

- a. Where an assisting vessel proposes to establish communication by means of a line-throwing apparatus she should, before making her final approach, ascertain whether or not it is safe for her to fire the rocket, particularly if the other vessel is a tanker. If it is safe she should manoeuvre to WINDWARD before firing over the other vessel's deck. If not, she should go to LEEWARD and prepare to receive a line. EXTREME CAUTION must be exercised when firing line-throwing rockets between vessels when helicopters are in the vicinity.
- b. When a vessel in distress is carrying petrol spirit or other highly inflammable liquid and is leaking, the following signals should be exhibited to show that it is dangerous to fire a line-carrying rocket by reason of the risk of ignition:
 - (i) By day: Flag B of the International Code of Signals hoisted at the masthead.
 - (ii) By night: A red light hoisted at the masthead.
- c. When visibility is bad the above signals should be supplemented by the use of the following International Code Signal made in sound:

GU (— — ● ● —) "It is not safe to fire a rocket."

| 31. Use of aircraft in assisting vessels

- a. RAF aircraft (other than helicopters) used on SAR duties usually carry droppable survival equipment and pyrotechnics. These aircraft may be able to assist a vessel in distress by:
 - (i) Locating her when her position is in doubt and informing SAR helicopters and the shore authorities so that SAR assets in the vicinity going to her assistance may be given her precise position;
 - (ii) Guiding surface craft to the casualty or, if the vessel has been abandoned, to survivors in lifeboats, on rafts or in the sea;
 - (iii) Keeping the casualty under observation;
 - (iv) Illuminating an area to assist rescue operations;
 - (v) Dropping survival equipment;
 - (vi) Providing top cover for SAR helicopters and enhancing communications between ship, shore and SAR helicopters involved in the incident.
- b. Helicopters may be able to pick up survivors ([see paragraph 33.f.](#)) but their carrying capacity is limited ([see paragraph 33.h.](#))
- c. The air droppable survival equipment carried by RAF SAR fixed wing aircraft is Air Sea Rescue Apparatus (ASRA) Mk 4, once called Lindholme Gear, which consists of three cylindrical containers connected in series by long orange-coloured buoyant ropes to facilitate interception and recovery by survivors. The longest container (container No. 2 in the series of 3) carries a lifecraft which can take 10 persons; it is designed to inflate automatically on striking the water. The other containers carry supplies. The overall length of the apparatus on the water is approximately 457 m (500 yards). Additional lifecrafts may also be dropped in pairs.
- d. The pilot always endeavours to drop the equipment up-wind of survivors so that the equipment will drift towards the survivors. When the buoyant line reaches the survivors, the rescue gear should be hauled in. Additional lifecrafts will be dropped up-wind of the survivors if required.
- e. Outer containers should be discarded by sinking when emptied. The contents should be secured in case of loss in rough seas, and should not be unpacked until required for use. Spare polythene containers are provided for storage purposes.
- f. When a number of aircraft are engaged on a search for a casualty at sea, the procedure followed is to search an area which has been calculated to include the most probable position of the incident, allowing for any movement due to drift during the period of search. The common technique is for the aircraft to carry out “creeping line ahead” searches for as long as the aircraft’s endurance on task will permit. An additional technique is the “square search” which is an expanding square centred on the most probable position of the survivor. The spacing between the tracks flown by the aircraft depends on the visibility, the characteristics of the object being searched (e.g. lifeboat or lifecraft, etc.) and the type, if any, of electronic search aid used.
 - (i) Maritime aircraft may be employed to search at night for shipping known to be in distress or overdue, or for survivors in lifeboats or lifecrafts. Unless distressed personnel are able and know how to indicate their position to the aircraft the search may be valueless and could result in failure to locate survivors and transfer of the search to another area.
 - (ii) The aircraft will fly through the search area below cloud, and may fire a green flare approximately every five to ten minutes and at each turning point. When a green flare is sighted it is most important that the following actions are taken:
 - Wait for the glare of the green flare to die out.
 - Fire one red flare.
 - Fire another red flare after about 20 seconds (this enables the aircraft to line up on your bearing).
 - Fire a third red flare if the aircraft appears to be going badly off course.
 - (iii) Points to note:
 - Each lifeboat or lifecraft should carry at least three red flares.
 - If the aircraft is diverted to the search from another task it may fire flares of another colour (except red)—reply as above.
 - If all else fails, use any means at your disposal to attract attention.
 - Survivors should ensure that pyrotechnics are not aimed directly at aircraft, particularly helicopters approaching overhead. Some rocket pyrotechnics have considerable energy and can hazard search aircraft.

- g. RAF aircraft, SAR-dedicated and those diverted to SAR, are fitted with some or all of UHF, VHF, and HF radio installations. HM Coastguard and RN SAR helicopters carry HF and VHF/UHF equipment. UK military aircraft engaged on SAR operations will usually maintain the following continuous watches:
- (i) HF communications with the UKARCC at RAF Kinloss (the ARCC maintains a permanent watch on 5680 kHz, but may allocate to an aircraft any HF frequency, dependent on prevailing ionospheric conditions or operating criteria).
 - (ii) Listening watch on 121.5 and 243 MHz.
- h. The following is included for information:
- (i) Nimrod Maritime Patrol Aircraft have the capability to transmit and receive on 2182 kHz, but cannot home on this frequency. They will not be standing watch on 2182 kHz.
 - (ii) SAR-dedicated helicopters can communicate on the principal VHF, FM, IMM channels including VHF Channel 16, with distressed and participating vessels, HM Coastguard, RNLI and other SAR authorities. They can home on 2182 kHz, using their DF equipment. The S92 and AW139 helicopters can home on 2182 kHz and on 121.5/243/406 MHz, both aircraft carry MF and Satcoms.
 - (iii) HM vessels have VHF IMM channels installed, suitable for intercommunication with merchant vessels so equipped. HM vessels also carry compatible VHF/UHF Airband equipment for communications with military aircraft. In cases where effective communications between merchant vessels and SAR aircraft cannot be established, HM vessels, when present, may be used to link with these aircraft.
 - (iv) Most SAR aircraft of other nations carry communication installations similar to that of UK SAR-dedicated aircraft. Some are equipped to communicate and to home to transmissions on 121.5 MHz, 243 MHz and 2182 kHz. Some can home to SARTs in the 9 GHz band.
 - (v) When operational on SAR missions, UK and most European SAR aircraft use voice call signs prefixed by the word "RESCUE". RAF aircraft diverted to SAR are equipped with some or all of UHF, VHF, HF and MF RT equipment. HM Coastguard and RN SAR helicopters carry HF/VHF/UHF RT equipment; other RN aircraft carry HF/UHF RT equipment.

32. Helicopter operations with merchant vessels

Helicopters based ashore in the UK and on HM vessels at sea may operate from time to time with merchant vessels at sea. The helicopter will establish contact with the vessel on VHF Channel 16 or, in the case of an emergency, the frequency assigned by the Coastguard to the emergency situation. During routine training, SAR helicopters may wish to practise putting the winchman on a vessel's deck. If this is intended, the helicopter crew will initially seek to make contact with the vessel's captain on VHF Channel 16 to seek permission prior to switching to a working frequency. These operations can be hazardous unless the following safety precautions are taken:

- (i) For helicopter winching, the vessel must be on a steady course giving minimum vessel motion, as directed by the helicopter pilot. As a guide, relative wind should be maintained as follows:
 - For helicopter operating area
 - Aft - 30° on Port Bow.
 - Midships - 30° on Port Bow or a beam wind.
 - Forward - 30° on Starboard Quarter.
 - If this is not possible the vessel should remain stationary head to wind. A helicopter will normally approach the winching area and depart from it along a flight path on the port side of a vessel because the captain sits on the right hand side of the cockpit.
- (ii) An indication of relative wind direction should be given. Flags and pennants, illuminated at night, are suitable for this purpose. Smoke from a galley funnel may also give an indication of the wind but in all cases where any funnel is making exhaust, the wind must be at least two points off the Port Bow.
- (iii) Clear as large an area of deck (or covered hatchway) as possible and mark the area with a yellow dot 5 metres in diameter (Merchant Shipping Notice 1506) gives guidance on the provision of permanent winching and low-hover areas). Whip or wire aerials in and around the area should, if at all possible, be struck.
- (iv) **All loose articles must be securely tied down or removed from the transfer area.** The downwash from the helicopter's rotor will easily lift unsecured covers, tarpaulins, hoses, rope and gash etc., thereby presenting a severe flying hazard. Even small pieces of paper, if ingested by a helicopter engine, can cause the helicopter to crash.
- (v) If a clear area cannot be provided, personnel can be lifted from a boat being towed astern on a long painter.
- (vi) On no account must the winch wire or load be secured to, or be allowed to foul any part of the vessel or rigging. In the event of excess loading or the winch wire becoming snagged, the helicopter crew will cut the winch wire.

- (vii) A helicopter can quickly build up a charge of static electricity which, if discharged through a person handling the winch wire, can cause an electric shock and so should be avoided if possible. The helicopter crew will normally discharge the static electricity before commencing the operation by dipping the winch wire (or the earthing lead attached to the hook and hanging below the winchman) in the sea or allowing the hook (or lead) to touch the vessel's deck. However, under some conditions sufficient static electricity can build up during the operation to give unprotected personnel a substantial shock.
- (viii) The helicopter will approach heading into the relative wind. For operating areas Aft and Midships the helicopter will approach from astern or abeam, and for operating area Forward it will approach from the bow. The maximum length of winch cable is normally about 90 m (295ft) / 75 m (246 ft) but may be less in some cases. A low-hover area may be practicable: the advantage of such an area is the reduction of time to transfer survivors because they can board the helicopter directly from the deck. This is particularly relevant in the case of a passenger ferry where there may be large numbers of persons to evacuate. A clear area sufficient to accommodate the helicopter is required: as a general guideline, a minimum diameter of 23 metres is essential (full requirements are detailed in Merchant Shipping Notice 1506). The success of low-hover operations depends on the behaviour of the vessel. If any movement is taking place the operation may be dangerous. The decision on whether to use this technique will be made by the helicopter captain. In any event, the operating area should be such that the helicopter pilot can have an unobstructed view of the vessel. The area should, as far as practicable, be clear of accommodation spaces, provide sufficient adjacent deck area for people to muster and provide safe access to the area from at least two separate directions.
- (ix) When being landed from a helicopter, personnel must obey the instructions given by the helicopter crew since there is a danger of inadvertently walking into the tail rotor which, due to its high speed of rotation, is difficult to see.
- (x) **EXTREME CAUTION** must be exercised when firing line-throwing rockets or any pyrotechnics when low-flying aircraft or helicopters are in the vicinity.

Note: The IAMSAR Manual gives further guidance on working with helicopters and should be read in conjunction with this Notice.

33. Use of helicopters at sea for rescue and medical evacuation

- a. **General.** The use of helicopters has become commonplace to evacuate a limited number of persons from vessels following a casualty, for rendering medical assistance and for landing specialist personnel for fire-fighting, damage control and salvage purposes. Consequently, it has become important that provision be made on board vessel for such eventualities. Such provision includes the selection of an area or areas over which a helicopter can safely operate, the preparation of contingency plans for helicopter operations and the carrying out of drills. This is particularly important in the case of passenger vessels which operate within helicopter coverage from the nearest coast.
- b. Most helicopter operations are successfully executed due primarily to the skill of helicopter crews. However, these operations are often of a hazardous nature and their success can be better assured if owners, masters and officers have given consideration beforehand to making suitable provision and preparations.
- c. **Contingency plans, drills and communications.** In order that those on board are prepared for an emergency helicopter operation, contingency plans and check lists should be prepared and periodic drills carried out. An example of a shipboard safety check list is given at [APPENDIX D](#).
- d. It is possible to communicate with a SAR helicopter on VHF Channel 16, or an agreed working frequency, as it is approaching the vessel. If difficulties are experienced, communications may be relayed by another unit on the scene - an Aircraft Co-ordinator if designated - or by the coordinating MRCC. However, it should be noted that communications will be difficult when the helicopter is overhead due to engine noise unless the vessel's VHF equipment is fitted with headphones or other suitable devices for use in high ambient noise conditions. Face-to-face communications will be possible if a winchman is lowered onto the vessel.
- e. Guidance on the conduct of emergency helicopter operations will be found in the Department of Transport Merchant Shipping Notice 1506, the IAMSAR Manual and in the ICS publication "Guide to Helicopter/Ship Operations"
- f. When a distress message is received either visually or by radio from a vessel in distress, steps taken by the rescue authorities ashore may include asking the nearest RCC to despatch a helicopter to assist in the rescue.
- g. It is essential that the vessel's position should be given as accurately as possible if the original distress signal is made by radio. The bearing (state whether magnetic or true) and distance from a fixed object, like a headland or lighthouse, should be given if possible. The type of vessel and colour of hull should be included if time allows.

- h. The main types of helicopter employed on SAR duties in the UK are the Sea King and Sikorsky S-61N, S-92 and AW139. These helicopters have an automatic hover control system and so can affect rescues at night and in fog where there are no visual hover references. Typical radial operating distances from base of the helicopters are:- RAF Sea Kings, 240 n miles; RN Sea Kings, 220 n miles; S-92, 290 n miles; AW-139, 228 n miles; and Sikorsky S-61N, up to 235 n miles. These ranges can be extended by forward refuelling. The helicopters in their various configurations can carry between 6 and 20 survivors, but this number can usually be increased if the occasion so demands. The exact capability of all helicopters in given circumstances will be determined by the aircrew at the time.
- i. SAR helicopters are fitted with VHF FM and AM, UHF and HF RT; they do not normally carry MF. Communication between vessel and helicopter should normally be achieved on Marine Band VHF / FM, but 2182 kHz is also available. If contact is difficult, it can be achieved through a Nimrod or other fixed-wing SAR aircraft if one is on scene, or through a lifeboat or the HMCG.
- j. Once the helicopter has become airborne, the speed with which it locates the vessel and the effectiveness of its work depends to a large extent on the cooperation of the vessel herself. On long range incidents, a supporting Nimrod is usually tasked as top cover and using its speed and excellent radar it normally locates the vessel before the helicopter arrives in the area and vectors the helicopter straight to it with the minimum of wasted time and fuel.
- k. From the air, especially if there is a lot of shipping in the area, it is very difficult for the pilot of a helicopter to pick out the particular vessel he is looking for from the many in sight. To ease identification, the vessel's crew should read out their exact position and course on the radio. The vessel should then use a distinctive distress signal which can clearly be seen by the helicopter pilot. Any, or all of the following may be used:
- (i) An effective method, if the necessary equipment is installed on the aircraft, is by use of a SART, which responds to radar interrogation by transmitting a swept frequency signal which generates as a line of 12 blip code on a radar screen outward from the SART's position, along its line of bearing. RAF Nimrods and RN/RAF SAR Sea Kings do not have this capability.
 - (ii) The use of an orange-coloured smoke signal during daylight or a flare at night, provide a very distinctive position indicator from the air.
 - (iii) A well trained Aldis lamp can be seen except in very bright sunlight when the lifeboat heliograph could be used. It is not suggested, of course, that the Aldis lamp need necessarily be used to pass messages in Morse. At night, other than at long/medium range, until the helicopter has identified the casualty vessel, avoid shining lights directly at the helicopter as this will saturate Night Vision Goggles. Once the helicopter has obviously turned towards the subject vessel, shine lights on the deck or superstructure.
 - (iv) The aircraft may request a VHF transmission - slow count from one to ten, for example for homing purposes.
 - (v) The display of these signals will save valuable time in the helicopter locating the casualty, and may mean all the difference between success and failure.
 - (vi) The crew of the vessel can often see and identify the SAR helicopter before the helicopter crew can identify them. Using radio, an efficient method of directing the helicopter to the vessel is to use the clock method where the nose and tail of the aircraft is 12 o'clock and 6 o'clock respectively, and to state the location of the vessel relative to the helicopter. For example, "We are in your 2 o'clock, range 2 miles".
- l. If, from the vessel in trouble, it is observed that the helicopter is going to pass by, or is on a course which will take it away, continued use should be made of visual distress signals, and at the same time, if fitted with radio, the fact reported to the helicopter (as in [paragraph g.](#) above) stating its present bearing and distance from the vessel.
- m. It would assist an aerial search for a fishing vessel in distress, if all fishing vessels were clearly marked on the top of their wheelhouses or some other prominent horizontal surface with their Fishing Letter and Number as large as space allows and as described in Schedule 4 of the Merchant Shipping (Registration of Fishing Vessels) Regulations 1988. It will be appreciated that by doing so it helps a searching pilot to identify the vessel requiring assistance and also importantly it helps him to quickly establish those vessels in his search area which do not need assistance.
- n. Whenever possible and when time allows, all the safety precautions in [paragraph 32.](#) above should be taken. However, in a distress situation it may not be possible to meet all the requirements. Under such circumstances the operation may necessarily be slower than a routine operation but, because of their operational limitations helicopters should not be unnecessarily delayed at the scene of the rescue. Cases have arisen where the rescue has been seriously hampered by survivors trying to take personal belongings with them when being rescued by helicopter. In distress situations, transfers are limited to personnel only.
- o. When cooperating with helicopters in SAR operations, vessels should not attempt to provide a lee whilst helicopters are engaged in winching operations as this tends to create turbulence.
- p. The helicopter pilot and crewman are professionals in methods of rescue and well intentioned assistance from either the survivor himself or third parties in securing survivors invariably result in delays. The deck party should, therefore, remain stationary and allow the helicopter to move to them.

The following rescue methods are employed:

- (i) The survivor, whether on deck or in the water, is rescued by means of the strop. Whenever possible the crewman is lowered from the helicopter together with the strop which is secured around the survivor's back and chest, and both are winched up into the helicopter.

- (ii) On certain occasions it may be necessary for the survivor to position the strop himself. The following procedure should be followed:
 - Grasp the strop and put both arms and head through the loop.
 - Ensure the wide padded part is as high as possible across the **back**, with the two straps coming under the armpits and up in front of the face.
 - Pull the toggle down as far as possible.
 - When ready to be lifted, look up at the helicopter, put one arm out to full extent and give a “thumbs-up”.
 - Put both arms down beside the body **and keep them there**.
 - On being winched up alongside the helicopter do nothing until instructed by the helicopter crew.
 - (iii) If a survivor on a deck is injured to the extent that the use of a strop around his back and chest would aggravate the injury or cause suffering, a crewman is lowered on to the deck with a stretcher. The survivor is placed in the stretcher, strapped-in in such a manner that it is impossible for him to slip or fall out, and both stretcher and crewman are winched up into the helicopter. If possible the helicopter will be carrying a doctor who will be lowered to the deck and will assist the survivors as necessary. If the patient is already in a Neil Robertson type stretcher this can either be lifted straight into the aircraft or placed in the rigid frame stretcher. It may also be possible to land the crewman with a portable radio for direct communication with the helicopter.
 - (iv) Hi-Line technique: In very bad weather it may not be possible to lower the crewman and/or strop directly on deck. In such a case a rope extension of the winch wire may be lowered to the vessel. This should be handled by a member of the vessel's crew and the slack taken in as the helicopter pays out the winch wire. The extension rope should be put in a bucket or coiled down on deck clear of snags but **on no account should it be made fast or wrapped around any part of the body**. When the winch wire is fully paid out the helicopter will move out to one side of the vessel and descend. As the descent is being made the vessel's crew should continue to take in the slack of the extension rope until the winch hook and strop are to hand. A winchman will usually be lowered with the strop. The earthing lead or winch hook must be allowed to touch the deck before the wire is handled. The casualty will then be secured in the strop and when he or another member of the vessel's crew signifies that he is ready, the helicopter will ascend and hoist in the winch wire. As this occurs, the extension rope should be paid out with enough weight on it to keep it taut until the end is reached when it should be cast clear of the vessel's side unless further lifts are required. If this is the case, the end of the extension rope should be kept in hand if possible (**but not wrapped around a limb or secured**) to facilitate the recovery of the strop for the next lift. Where a large number of casualties are to be lifted, two strops may be offered simultaneously and one casualty should be placed in each strop in the normal manner.
- q. When being landed from a helicopter, personnel must obey the instructions given by the helicopter crew since there is a danger of inadvertently walking into the tail rotor which, due to its high speed of rotation, is difficult to see.

AIRCRAFT CASUALTIES AT SEA

34. Distress communications

- a. *Visual Signals.* An aircraft may indicate she is in distress by firing a succession of red pyrotechnic lights, by signalling SOS with signalling apparatus or by firing a parachute flare showing a red light. Navigation markers dropped by aircraft at sea, emitting smoke, or flames and smoke, should not be mistaken for distress signals. Low flying is not in itself an indication of distress.
- b. An aircraft which has located another aircraft in distress may notify vessels in the vicinity by passing a message in plain language by signalling lamp using the prefix “XXX” It may also give the following signals, together or separately, to attract a vessel's attention:
 - (i) a succession of white pyrotechnic lights;
 - (ii) the repeated switching on and off of the aircraft's landing lights and;
 - (iii) the irregular repeated switching on and off of the aircraft's navigational lights.
- c. If it wishes to guide a vessel to the casualty or survivors it will fly low round the vessel or cross the projected course of the vessel close ahead at a low altitude opening and closing the throttle or changing the propeller pitch. It will then fly off in the direction in which the vessel is to be led. British pilots are instructed to rock their aircraft laterally when flying off in the direction of the casualty. The vessel should acknowledge receipt of the signals by hoisting the Code and Answering Pennant close up, or by flashing a succession of “T's” on the signal lamp, and may indicate the inability to comply by hoisting the International Code Flag “N” or flashing a succession of “N's” on the signal lamp. It should then either follow the aircraft or indicate by visual or radio means that it is unable to comply. The procedure for cancelling these instructions is for the aircraft to cross the wake of the surface craft close astern at a low altitude, rocking the wings or opening and closing the throttle or changing the propeller pitch.
- d. In order to take advantage of the greater visibility of pyrotechnics by night, searching aircraft will fly a creeping line ahead type of search, firing off green pyrotechnics at 5-10 minute intervals and watching for a replying red from the survivor.

- e. Survivors from crashed aircraft in rubber lifecrafts may give the following distress signals:
 - (i) fire pyrotechnic signals emitting one or more red stars or orange/red smoke.
 - (ii) flash a heliograph.
 - (iii) flash SOS or other distinctive signal by hand torch or other signalling lamp. Some lifecrafts may show a steady or a flashing light.
 - (iv) blow whistles.
 - (v) use a fluorescent dye marker giving an extensive bright green colour to the sea around the survivors.
 - (vi) fly a yellow kite from the lifecraft to support the aerial for the emergency radio transmitter.
- f. *Radio Signals.* Because aircraft usually remain in two way radio contact with an Air Traffic Control Centre (ATCC) throughout their flights, a distress message is normally transmitted on the frequency in use. If there is no response to the initial call, it is repeated on 121.5 or 243 MHz as appropriate.
- g. There is close liaison between shore stations, including ATCC, UKARCC and HMCG, and merchant vessels will ordinarily be informed of aircraft casualties at sea by broadcast messages from the HMCG made on the international distress frequencies of 2182 kHz and VHF Channel 16. Vessels may, however, become aware of the casualty by:
 - (i) intercepting a distress signal from an aircraft using radiotelephony on 2182 kHz (rarely) or VHF Channel 16. (The form of such messages is given in [APPENDIX A](#)), or
 - (ii) by picking up a message from a SAR aircraft.

35. Action taken to render assistance

- a. Throughout their flight, civil commercial aircraft are in two-way radio contact with the ATCC appropriate to the area in which they are operating. In the UK there are four such centres; Scottish ATCC, London ATCC, Swanwick ATCC and the Shanwick Oceanic Control Area. In the case of aircraft in distress or overdue, UKARCC will be alerted immediately by the ATCC. The ARCC or HMCG is then responsible for initiating such action as may be necessary, including alerting HM Coastguard for maritime assistance. Aircraft will be sent, if necessary and practicable, to search for and fix as accurately as possible the position of the casualty. Although these aircraft will carry droppable survival equipment the survivors must normally be rescued by SAR helicopters, naval and merchant vessels or lifeboats of the RNLI.
- b. Aircraft usually sink quickly (i.e. within a few minutes) and vessels making for an aircraft in distress should consequently steam at full speed.
- c. Every endeavour will be made to give merchant vessels an accurate position of an aircraft casualty or lifecraft. An aircraft will, if practicable, be kept over survivors at least during daylight hours, until they are rescued. When given such a fix the vessel should at once consult any other vessels in the neighbourhood on the best procedure to be adopted, as is the practice in the case of casualties to vessels; the vessels going to the rescue should answer the station sending the broadcast and give her identity, position and intended action.
- d. If a merchant vessel should pick up an SOS message direct from an aircraft in distress, she should act as indicated in [paragraph c.](#) above and also relay the message to the nearest HMCG or CRS. Moreover, a merchant vessel which has received an SOS message direct from an aircraft in distress and is going to the rescue should take a bearing on the transmission, and inform the HMCG, CRS or other vessels in the vicinity of the call signal of the distressed aircraft and the time at which the distress message was received, followed by the bearing and time at which the signal ceased.

36. Action to be taken when survivors are picked up

- a. A survivor from an aircraft casualty at sea who is picked up by a vessel may be able to give information which will assist in the rescue of other survivors. Masters are therefore asked to put the following questions to rescued survivors of an aircraft casualty and to communicate the answers to an HMCG. They should also give the position of the rescuing vessel and the time when the survivor was picked up.
 - (i) Did you bale out or was the aircraft ditched? What was the time and date?
 - (ii) If you baled out, at what altitude?
 - (iii) How many others did you see leave the aircraft by parachute?
 - (iv) How many ditched with the aircraft?
 - (v) How many did you see leave the aircraft after ditching?
 - (vi) How many survivors did you see in the water?
 - (vii) What flotation gear had they?
 - (viii) What was the total number of persons aboard the aircraft prior to the accident?
 - (ix) What caused the emergency?

- b. Masters are reminded that survivors may, especially in colder climates, be suffering from hypothermia, and that qualified medical advice should be provided at the earliest opportunity.
- c. If a survivor is recovered wearing an activated PLB or if there is an EPIRB in or attached to a lifecraft, it is important, without further risk to rescuers, that these be switched off as they may compromise the effectiveness of SAR homing to nearby casualties and create uncertainty within SAR agencies as to whether or not the user has been recovered.

37. Action to be taken when an aircraft is forced to “ditch” (alight on the sea)

- a. The captain of a distressed aircraft will be materially assisted in locating a vessel if the latter:
 - (i) Transmits homing bearings to the aircraft, or (if so requested) transmits signals enabling the aircraft to take its own bearings;
 - (ii) By day makes black smoke;
 - (iii) By night directs a searchlight vertically.
- b. Ditching an aircraft is difficult and usually dangerous. A vessel which knows that an aircraft intends to ditch should, if practicable, try to provide a lee of calm water. This may be achieved by any means at the master’s discretion, such as steering on a circular course through 360 degrees, with the addition, if possible, of a wave quelling oil.
- c. The captain of an aircraft normally sits on the port side of the cockpit, and thus has better visibility on that side. An aircraft will therefore usually ditch on the starboard side of a vessel and heading into wind, although, when seas are running high, it may be expected to attempt to land along the trough of the seas. In the absence of a pre-arranged plan, the vessel should steam into wind and assume that the aircraft will ditch on her starboard side. Helicopter Captains sit on the starboard side of the aircraft and would, therefore, normally ditch on the port side of a vessel heading into wind.
- d. If it is dark, the vessel should illuminate the sea as much as possible by searchlight on the side upon which the aircraft is expected to ditch. Care should be taken not to dazzle the pilot who might otherwise lose control of his aircraft at a critical moment. It will help the pilot considerably if flame floats or preferably, in view of the danger of aviation fuel coming into contact with them, battery operated floats are laid line astern to indicate the direction of the suggested alighting area. Six floats should be laid at 200 yard intervals.
- e. The vessel’s master should, if possible, tell the captain of an aircraft which is going to ditch the general weather conditions, including wind speed and direction, visibility, state of sea and swell, approximate cloud base and barometric pressure.
- f. An aircraft may break up immediately on striking the water, and lifecrafts may be damaged. The vessel should therefore have a lifeboat ready for launching and if possible boarding nets should be lowered from the vessel and heaving lines made ready in the vessel and the lifeboat. Survivors of the aircraft may have orange lifejackets, water torches and whistles.
- g. The method of picking up survivors from lifecrafts must be left to the judgment of the Captain of the vessel carrying out the rescue operation.
- h. The drift rate of a lifecraft would normally be expected to exceed that of a vessel, so that with the vessel to windward, the lifecraft might drift away from the vessel unless some suitable means were available to catch the lifecraft and hold it alongside. This might involve the vessel having to repeat the whole procedure of coming alongside again. However, if the vessel were stopped long enough for her full drift rate to develop, this rate should exceed that of the lifecraft which would decrease as the lee afforded by the vessel increased. On the other hand, vessels of low freeboard would not afford much protection in any seaway, and the drift rate of the lifecraft might not be arrested, and heavy seas washing over the lee side would make it difficult to take survivors on board. Another point to be considered is the lack of manoeuvrability once a vessel is stopped.
- i. With the vessel to leeward, there should be no difficulty in keeping the lifecraft alongside, but with heavy seas running, there is the risk of the lifecraft being dashed against the vessel’s side, and greater difficulty in taking survivors on board.
- j. It should be borne in mind that military aircraft seats are often fitted with an ejection seat mechanism, the position of which is indicated by a red solid triangle. The mechanism is activated by black and yellow striped handles. Handles or knobs, switches, etc. coloured red and with black and yellow stripes should not be touched, as the consequences of so doing may be injurious or even fatal to both rescuer and rescued.

APPENDIX A TO ANNUAL NOTICE TO MARINERS No. 4

FORM OF DISTRESS CALLS AND MESSAGES FROM AIRCRAFT

1. The exact form of a distress call or message from an aircraft in flight will depend on the time available to send it between the onset of the emergency and the landing of the aircraft in the sea. This may be only a matter of seconds.
2. When time permits, the form of distress call and distress message sent by civil aircraft will be as follows:
 - a. Distress Call

radiotelephony.

 - the distress signal MAYDAY spoken three times
 - the words THIS IS
 - the identification of the aircraft in distress spoken three times.
 - the radio frequency used in the transmission of the distress call.
 - b. Distress Message
 - (i) the distress signal (sent once);
 - (ii) the call sign or identification of the aircraft in distress, and as much as possible of the following information;
 - (iii) nature of distress and kind of assistance required;
 - (iv) position, time of position and height, heading (magnetic or true) and indicated air speed (in knots).
 - (v) any other information which might facilitate the rescue (including the intention of the person in command, e.g. ditching).

Notes: “Heading” gives the direction of the aircraft in the air, the speed and direction of the wind will have to be allowed for to ascertain the actual direction over the sea.

“Indicated airspeed” does not give the speed of the aircraft over the water as it does not allow, amongst other things, for the effect of the wind or the correction that has to be made for height.

3. After the transmission of its distress message, the aircraft in distress may be requested to transmit suitable signals followed by its call sign or identification, to permit direction finding stations to determine its position. This request may be repeated at frequent intervals.
4. If the aircraft is to be ditched, the radio transmitter may be set for continuous transmission immediately prior to ditching, if circumstances permit.
5. Civil aircraft using radiotelephony will use one of the following types of call sign:

General Aviation -

- a. five character call sign, which is the official registration mark of the aircraft, e.g. GABCD.

Commercial Aviation -

- a. a code word denoting the aircraft operating company followed by the flight number of the service on which the aircraft is operating, e.g. SPEEDBIRD BA639 (SPEEDBIRD is the code word denoting British Airways).
 - b. a code word denoting the aircraft operating company followed by a five character call sign, e.g. SPEEDBIRD GABCD.
6. After communication has been established when using the type of call sign in 5.b. an abridged call sign, consisting of the airline code word and the last two characters of the five letter call sign may be used, e.g. SPEEDBIRD CD.
 7. The following pronunciation is used when transmitting numerals:

| <i>Numeral or numeral element</i> | <i>Pronunciation</i> |
|-----------------------------------|----------------------|
| 0 | ZE-RO |
| 1 | WUN |
| 2 | TOO |
| 3 | TREE |
| 4 | FOW-ER |
| 5 | FIVE |

| <i>Numeral or numeral element</i> | <i>Pronunciation</i> |
|-----------------------------------|----------------------|
| 6 | SIX |
| 7 | SEV-en |
| 8 | AIT |
| 9 | NINE-er |
| Decimal point | DAY SE MAL |
| Thousand | Tousand |

Note: The syllables shown in capital letters should be emphasised.

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8. In radiotelephony all numbers are transmitted by pronouncing each digit separately, except that whole thousands are transmitted by pronouncing each digit in the number of thousands followed by the word “THOUSAND”:

e.g. 600 is spoken as “Six zero zero”
 1580 is spoken as “One five eight zero.”
 12,000 is spoken as “One two thousand.”

9. The phonetic alphabet which is used with the English pronunciation is as follows:

| Letter | Word | Pronounced as | Letter | Word | Pronounced as |
|--------|---------|------------------------------------|--------|----------|---|
| A | Alfa | <u>AL</u> FAH | N | November | NO <u>VEM</u> BER |
| B | Bravo | <u>BRAH</u> VOH | O | Oscar | <u>OSS</u> CAH |
| C | Charlie | <u>CHAR</u> LEE or <u>SHAR</u> LEE | P | Papa | PAH <u>PAH</u> |
| D | Delta | <u>DELL</u> TAH | Q | Quebec | KEH <u>BECK</u> |
| E | Echo | <u>ECK</u> OH | R | Romeo | <u>ROW</u> ME OH |
| F | Foxtrot | <u>FOKS</u> TROT | S | Sierra | SEE <u>AIR</u> RAH |
| G | Golf | GOLF | T | Tango | <u>TANG</u> GO |
| H | Hotel | HOH <u>TELL</u> | U | Uniform | <u>YOU</u> NEE FORM or <u>OO</u> NEE FORM |
| I | India | <u>IN</u> DEE AH | V | Victor | VIK TAH |
| J | Juliett | <u>JEW</u> LEE <u>ETT</u> | W | Whiskey | <u>WISS</u> KEY |
| K | Kilo | <u>KEY</u> LOH | X | X ray | <u>ECKS</u> RAY |
| L | Lima | <u>LEE</u> MAH | Y | Yankee | <u>YANG</u> KEY |
| M | Mike | MIKE | Z | Zulu | <u>ZOO</u> LOO |

Note: The syllables to be emphasised are underlined.

10. The following is an example of a Distress Call and Message transmitted by radiotelephony:

Distress Call “MAYDAY MAYDAY MAYDAY THIS IS SPEEDBIRD
 GABCD SPEEDBIRD GABCD SPEEDBIRD GABCD”

Distress Message “MAYDAY SPEEDBIRD GABCD ENGINE FAILURE MY
 POSITION FIVE TWO TWO ZERO NORTH ONE FIVE
 THREE ZERO WEST AT EIGHT THOUSAND FEET TRUE
 HEADING ZERO NINE ZERO TWO FIVE ZERO KNOTS
 WILL HAVE TO DITCH”

APPENDIX B TO ANNUAL NOTICE TO MARINERS No. 4

MOUNTING OF SEARCH AND RESCUE TRANSPONDER (SART) AND USE OF HAND HELD VHF RADIOS

- The SART will produce a distinctive signal - 12 dashes - on the display of a vessel or aircraft radar operating in the 9GHz band.
- To maximise the efficiency of the SART, the device should be mounted at a height in the survival craft of at least one metre above sea level. This may be achieved either through use of the pole provided, or if conditions preclude the easy deployment of the pole, by hanging within the survival craft.
- A continuous watch should be maintained on VHF Channel 16 using the portable radio apparatus, for communications with search units.

APPENDIX C TO ANNUAL NOTICE TO MARINERS No. 4

HM COASTGUARD and AERONAUTICAL RESCUE COORDINATION CENTRES

e-mail addresses shown are not constantly monitored and should therefore not be used for operational SAR incidents.

List of Maritime Rescue Coordination Centres

| | <i>Address</i> | <i>Telephone +44</i> | <i>Fax +44</i> | <i>e-mail</i> |
|---|--|----------------------|----------------|--|
| Scotland and Northern Ireland Region | | | | |
| MRCC Aberdeen | Marine House, Blaikies Quay, Aberdeen. AB11 5PB | 01224 592334 | 01224 575920 | aberdeencoastguard@mcga.gov.uk |
| MRCC Shetland | Knab Road, Lerwick, Shetland. ZE1 0AX | 01595 692976 | 01595 693634 | shetlandcoastguard@mcga.gov.uk |
| MRCC Forth | Fifeness, Crail, Fife. KY10 3XN | 01333 450666 | 01333 450703 | forthcoastguard@mcga.gov.uk |
| MRCC Clyde | Navy Buildings, Eldon Street, Greenock, Renfrew. PA16 7QY | 01475 729988 | 01475 888095 | clydecoastguard@mcga.gov.uk |
| MRCC Belfast | Bregenz House, Quay Street, Bangor, Co. Down. BT20 5ED | 02891 463933 | 02891 469854 | belfastcoastguard@mcga.gov.uk |
| MRCC Stornoway | Battery Point, Stornoway, Isle of Lewis. H51 2RT | 01851 702013 | 01851 706796 | stornowaycoastguard@mcga.gov.uk |
| East of England Region | | | | |
| MRCC Yarmouth | Haven Bridge House, Great Yarmouth, Norfolk. NR30 1HZ | 01493 851338 | 01493 331975 | yarmouthcoastguard@mcga.gov.uk |
| MRCC Humber | Lime Kiln Lane, Bridlington, N. Humberside. YO15 2LX | 01262 672317 | 01262 400779 | humbercoastguard@mcga.gov.uk |
| MRCC Thames | East Terrace, Walton on Naze, Essex. CO14 8PY | 01255 675518 | 01255 679415 | thamescoastguard@mcga.gov.uk |
| London Coastguard | Thames Barrier Navigation Centre, Unit 28, 34 Bowater Road, Woolwich, London. SE18 5TF | 0208 3127380 | 02083 098196 | londoncoastguard@mcga.gov.uk |
| MRCC Portland | Custom House Quay, Weymouth, Dorset. DT4 8BE | 01305 760439 | 01305 760451 | portlandcoastguard@mcga.gov.uk |
| MRCC Dover | Langdon Battery, Swingate, Dover, Kent. CT15 5NA | 01304 210008 | 01304 225762 | dovercoastguard@mcga.gov.uk |
| MRCC Solent | Marine Parade West, Lee on Solent, Gosport, Hants. PO13 9NR | 02392 552100 | 02392 554131 | solentcoastguard@mcga.gov.uk |
| Wales and West of England Region | | | | |
| MRCC Swansea | Tutt Head, Mumbles, Swansea, West Glamorgan. SA3 4EX | 01792 366534 | 01792 368371 | swansea-coastguard@mcga.gov.uk |
| MRCC Falmouth | Pendennis Point, Castle Drive, Falmouth, Cornwall. TR11 4WZ | 01326 317575 | 01326 315610 | falmouthcoastguard@mcga.gov.uk |
| MRCC Brixham | Kings Quay, Brixham, Devon. TQ5 9TW | 01803 882704 | 01803 859562 | brixhamcoastguard@mcga.gov.uk |
| MRCC Milford Haven | Gorsewood Drive, Hakin, Milford Haven. SA73 2HD | 01646 690909 | 01646 697287 | milfordhaven-coastguard@mcga.gov.uk |
| MRCC Holyhead | Holyhead, Anglesey, Gwynedd. LL65 1ET | 01407 762051 | 01407 761613 | holyheadcoastguard@mcga.gov.uk |
| MRCC Liverpool | Hall Road West, Crosby, Liverpool. L23 8SY | 0151 9313341 | 01519 320978 | liverpoolcoastguard@mcga.gov.uk |

MRCC Voice call sign is the geographical name followed by "Coastguard", e.g. "SWANSEA COASTGUARD".

United Kingdom Aeronautical Rescue Coordination Centre (UKARCC) / United Kingdom Mission Control Centre (UKMCC) for Cospas-Sarsat

| <i>Name</i> | <i>Address</i> | <i>Telephone +44</i> | <i>Fax +44</i> | <i>e-mail and AFTN Routeing Indicator</i> |
|-------------|--|----------------------------------|----------------------------------|---|
| UKARCC | UKARCC Kinloss, RAF Kinloss, Forres, Moray, Scotland, IV36 3UH | (0)1309 678302 (0)1309 678303 | (0)1309 678308 (0)1309 616216 | kinarcc1@btconnect.com |
| UKMCC | UKMCC, UKARCC, RAF Kinloss, Forres, Moray, Scotland, IV36 3UH | (0)1309 678304 (0)1309 690469 | (0)1309 678309 (0)1309 690717 | ukmcc@atlas.co.uk AFTN - EGQPZSZX |

UKARCC HF / VHF voice call-sign is "Kinloss Rescue".

List of VHF Direction Finding Facilities

A number of HMCG stations operate direction finding antennae around the coasts of the UK from which the bearings of vessels within range, and transmitting on VHF, can be determined.

On request from a vessel in distress the HMCG station will transmit from the direction finding site the bearing of the vessel from the direction finding antenna.

This service is available for emergency use only and is at present available from the following stations:

| <i>Aerial Site</i> | <i>Aerial Position</i> | <i>Controlling Station (for contact details see list of MRCCs above)</i> |
|---|--|--|
| Compass Head Widford Hill | 59° 52'·066N., 1° 16'·318W. 58° 59'·296N., 3° 01'·447W. | MRCC Shetland |
| Dunnet Head Windy Head Noss Head | 58° 40'·313N., 3° 22'·490W. 57° 38'·924N., 2° 14'·590W. 58° 28'·75N., 3° 02'·97W. | MRCC Aberdeen |
| MRCC Crosslaw Inverbervie | 56° 16'·731N., 2° 35'·380W. 55° 54'·0N., 2° 12'·1W. 56° 51'·2N., 2° 15'·7W. | MRCC Forth |
| Flamborough Easington Newton Cullercoats Hartlepool Boulby | 54° 07'·848N., 0° 05'·205W. 53° 39'·10N., 0° 05'·90E. 55° 31'·026N., 1° 37'·147W. 55° 04'·374N., 1° 27'·799W. 54° 41'·784N., 1° 10'·467W. 54° 33'·000N., 0° 50'·000W. | MRCC Humber |
| Trimingham Lowestoft Skegness | 52° 54'·605N., 1° 20'·619E. 52° 28'·578N., 1° 45'·759E. 53° 08'·916N., 0° 20'·784E. | MRCC Yarmouth |
| MRCC Shoeburyness Bawdsey | 51° 51'·3N., 1° 16'·9W. 51° 31'·347N., 0° 46'·670E. 51° 59'·599N., 1° 24'·607E. | MRCC Thames |
| North Foreland MRCC Fairlight | 51° 22'·494N., 1° 26'·830E. 51° 07'·8N., 1° 20'·2E. 50° 52'·3N., 0° 38'·1E. | MRCC Dover |
| Newhaven Selsey Boniface Down | 50° 46'·913N., 0° 03'·105E. 50° 43'·788N., 0° 48'·141W. 50° 36'·211N., 1° 11'·770W. | MRCC Solent |
| Hengistbury Head The Grove | 50° 42'·881N., 1° 45'·458W. 50° 32'·885N., 2° 25'·098W. | MRCC Portland |
| Berry Head East Prawle Rame Head | 50° 24'·0N., 3° 29'·0W. 50° 13'·2N., 3° 42'·5W. 50° 19'·0N., 4° 13'·1W. | MRCC Brixham |

| <i>Aerial Site</i> | <i>Aerial Position</i> | <i>Controlling Station (for contact details see list of MRCCs above)</i> |
|--|--|--|
| Lizard S. Mary's, Isles of Scilly Land's End Trevose Head | 49° 57'·820N., 5° 12'·396W. 49° 55'·710N., 6° 18'·180W. 50° 08'·068N., 5° 38'·096W. 50° 32'·8N., 5° 02'·3W. | MRCC Falmouth |
| Hartland Point | 51° 01'·133N., 4° 31'·060W. | MRCC Swansea |
| S. Anne's Head | 51° 40'·947N., 5° 10'·488W. | MRCC Milford Haven |
| Rhiw Great Ormes Head | 52° 49'·990N., 4° 37'·760W. 53° 19'·923N., 3° 51'·207W. | MRCC Holyhead |
| Snaefell | 54° 15'·829N., 4° 27'·596W. | MRCC Liverpool |
| Orlock Head West Torr | 54° 40'·416N., 5° 34'·966W. 55° 11'·894N., 6° 05'·593W. | MRCC Belfast |
| Law Hill Tiree Kilchiaran | 55° 41'·76N., 4° 50'·46W. 56° 30'·50N., 6° 57'·77W. 55° 45'·92N., 6° 27'·19W. | MRCC Clyde |
| Barra Rodel Portnaguran | 57° 00'·667N., 7° 30'·478W. 57° 44'·9N., 6° 57'·5W. 58° 14'·817N., 6° 09'·817W. | MRCC Stornoway |

APPENDIX D TO ANNUAL NOTICE TO MARINERS No. 4

Helicopter Operations - Shipboard Safety Check List

1. General:

- a. Have all objects within and adjacent to the operating area been secured or removed?
- b. Have all aerials, standing or running gear above and in the vicinity of the operating area been lowered or secured?
- c. Has a pennant or windsock been hoisted where it can be clearly seen by the helicopter pilot?
- d. Has the officer of the watch been consulted about the vessel's readiness?
- e. Does the leader of the deck party have a portable radio transceiver (with earphones, etc.), on the correct channel, for communicating with the bridge?
- f. Are the fire pumps running and is there adequate pressure on deck?
- g. Are fire hoses ready (near to but clear of the operating area)?
- h. Are foam hoses, monitors and portable foam equipment ready?
- i. Are dry powder fire extinguishers available and ready for use?
- j. Is the deck party complete, correctly dressed, pockets and hats secured, and in position?
- k. Are the fire hoses and foam nozzles pointing away from the operating area in case of inadvertent discharge?
- l. Has a rescue party been detailed?
- m. Is a man overboard rescue boat, (with radio) ready for lowering?
- n. Are the following items of equipment to hand?
 - (i) Large axe
 - (ii) Crowbar
 - (iii) Wire cutters
 - (iv) Red emergency signal/torch
 - (v) Marshalling batons (at night)
 - (vi) First aid equipment
- o. Has the correct lighting (including special navigation lights) been switched on prior to night operations?
- p. Is the deck party ready, wearing brightly coloured tabards and protective helmets, and are all passengers clear of the operating area?
- q. Has the hook handler been equipped with helmet, strong rubber gloves and rubber soled shoes to avoid the danger of static discharge?
- r. Is access to and egress from the operating area clear?

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2. **Landing on:**

- a. Is the deck party aware that a landing is to be made?
- b. Is the operating area free of heavy spray or seas on deck?
- c. Have side rails and awnings, stanchions and other obstructions been lowered or removed?
- d. Have portable pipes been removed and have the remaining apex ends been blanked off?
- e. Are rope messengers to hand for securing the helicopter, if necessary? (*Note: only the helicopter pilot may decide whether or not to secure the helicopter.*)
- f. Have all personnel been warned to keep clear of rotors and exhausts?

3. **Tankers:**

- a. Vessels not fitted with an inert gas system: has pressure been released from tanks within 30 minutes of commencement of helicopter operations?
- b. Vessels fitted with an inert gas system: has pressure in cargo tanks been reduced to slight positive pressure?
- c. All tankers: have all tank openings been secured following venting operations?

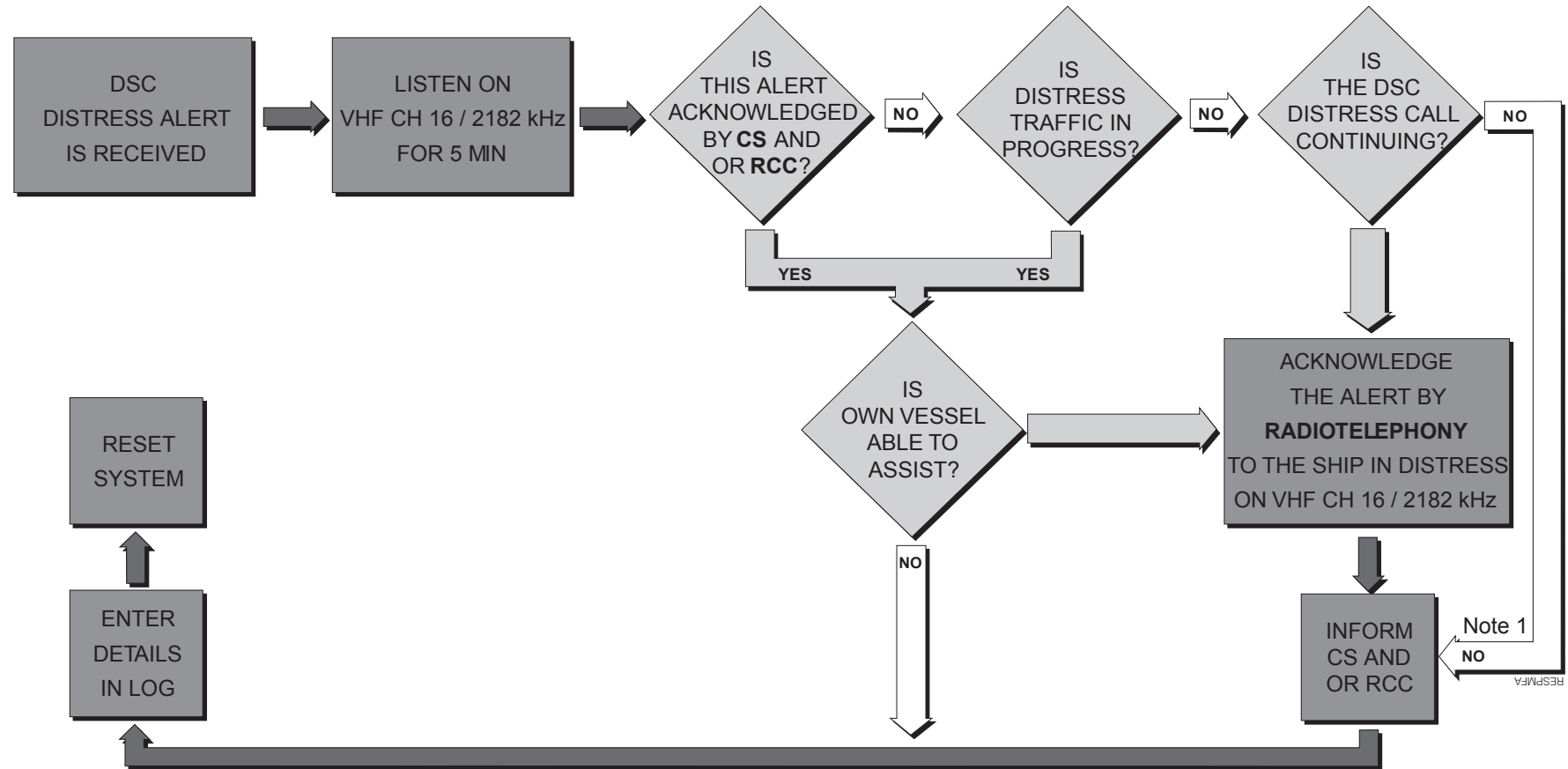
4. **Bulk carriers and combination carriers:**

- a. Has surface ventilation to dry bulk cargoes ceased?
- b. Have all hatch openings been fully battened down prior to helicopter operations?

5. **Gas carriers:**

- a. Have all precautions been taken to prevent vapour emission on deck?

Actions by ships upon receipt of **VHF / MF** DSC Distress Alert



1 - 51

REMARKS:

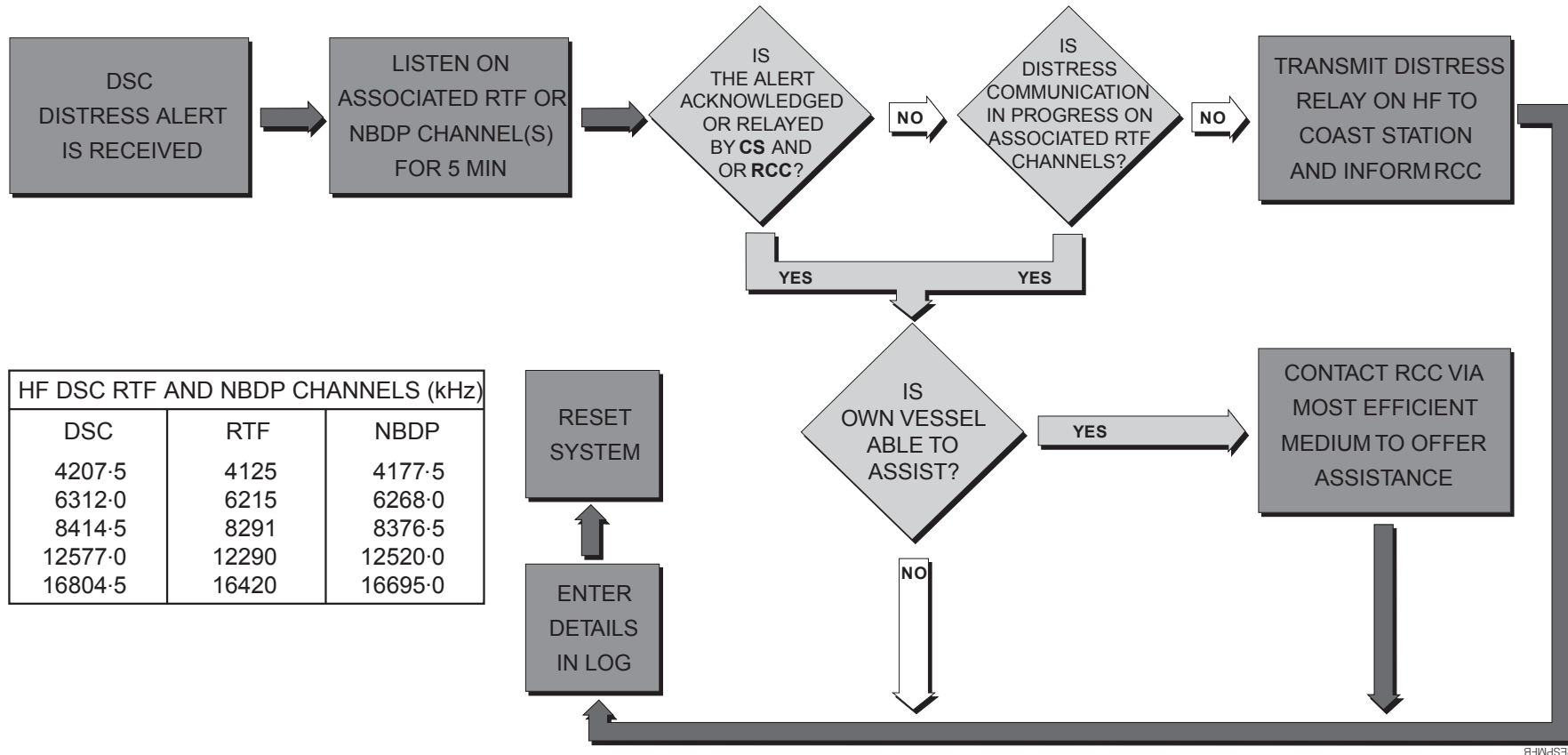
Note 1: Appropriate or relevant RCC and/or Coast Station shall be informed accordingly. If further DSC alerts are received from the same source and the ship in distress is beyond doubt in the vicinity, a DSC acknowledgement may, after consultation with an RCC or Coast Station, be sent to terminate the call.

Note 2: In no case is a ship permitted to transmit a DSC distress relay call on receipt of a DSC distress alert on either VHF Channel 70 or MF Channel 2187.5 kHz

CS = Coast Station

RCC = Rescue Co-ordination Centre

Actions by ships upon receipt of **HF** DSC Distress Alert



1 - 52

- Note 1: If it is clear the ship or person in distress is not in the vicinity and/or other crafts are better placed to assist, superfluous communications which could interfere with search and rescue activities are to be avoided. Details should be recorded in the appropriate log book.
- Note 2: The ship should establish communications with the station controlling the distress as directed and render such assistance as required and appropriate.
- Note 3: Distress relay calls should be initiated manually

CS = Coast Station

RCC = Rescue Co-ordination Centre