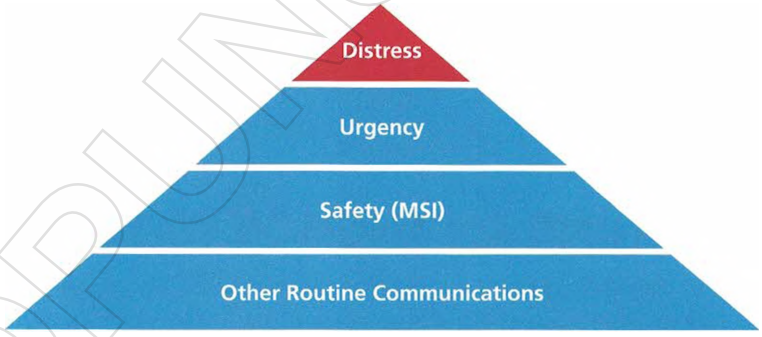
3.15 GMDSS WATCHKEEPING

To enable a ship to send and receive distress, urgency and safety information, the OOW should hold a General or Restricted Operator's Certificate (GOC/ROC) as appropriate, and be familiar with the requirements and procedures for GMDSS watchkeeping. In particular it is necessary to ensure that:

- All GMDSS communications are under the control of an appropriately certified operator;
- Communication procedures and discipline are followed so that interference with other radio users is avoided; and
- Frequencies are used for their correct purpose.

GMDSS communications are prioritised according to their importance for safety of life at sea as follows:



The International Telecommunications Union (ITU) publication *Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services* contains relevant extracts from the ITU Radio Regulations, setting out the correct procedures to be followed.

3.15.1 RADIO WATCHKEEPING

The OOW is responsible for ensuring compliance with the ship's radio watchkeeping requirements. In general, a radio watch should be maintained on all frequencies necessary to receive distress, urgency and safety messages appropriate to the sea area in which the ship is operating. An example of watchkeeping requirements is as follows:

	Sea Area			
	A1	A2	A3	A4
VHF Ch.16 (156.8 MHz)	X	X	X	X
VHF DSC Ch.70 (156.525 MHz)	X	X	X	X
MF DSC (2187.5 kHz)		X	X	X
HF DSC (8414.5 kHz)			X2	X
HF DSC (4207.5, 6312, 12577, 16804.5 kHz)			X24	X
NAVTEX (518 kHz)	X	X	X3	
Satellite (SES)	X1	X1	X2	
HF Direct-Printing (1605-27500 kHz)			X2	X

Notes:

1. If fitted due to operations exclusively in areas outside the range of a coast station broadcasting NAVTEX or HF direct-printing MSI service.
2. If fitted under SES or MF/HF option permitted for Sea Area A3.
3. If in range of a coast station broadcasting NAVTEX.
4. At least one of these frequencies should be monitored based on the time of day and geographical location of the ship.

3.15.2 EMERGENCY COMMUNICATIONS

The OOW should be familiar with the procedures for sending distress, urgency and safety messages contained in the *International Aeronautical and Maritime Search and Rescue Manual Volume III* (IAMSAR Vol III), Section 4. Particular care should be taken to ensure that alerts and messages sent by DSC, radio-telephony and satellite communications are given an appropriate priority.

In addition it is important for the OOW to ensure that:

- Alerts and messages are sent to ALL STATIONS;
- DSC alerts and messages are sent on appropriate frequencies;
- When the situation allows, DSC distress alerts are followed by a radio-telephony message;
- DSC urgency and safety alerts are followed by a radio-telephony message;
- Distress and urgency alerts are cancelled when the emergency is over; and
- During a distress a qualified operator is designated as being responsible for radio communications (on a passenger ship, the operator should have no other duties during a distress).

Every precaution should be taken to avoid false distress alerts being sent.

3.15.3 MARITIME SAFETY INFORMATION

A continuous MSI watch should be kept at sea at all times by all ships. NAVTEX should be used to meet this requirement whilst the ship is within range of a coast station broadcasting NAVTEX. Beyond this range, a watch should be kept on the appropriate MF or HF frequencies or on the ship earth station (SES) in order to receive MSI.

3.15.4 ROUTINE OR GENERAL COMMUNICATIONS

Routine and general communications are all those DSC, radio-telephony and satellite communications not related to emergencies or safety. The frequencies used by coast stations, port stations and reporting systems can be found in lists of radio signals. The OOW should ensure that routine and general communications do not interfere with emergency communications.

3.15.5 GMDSS LOG KEEPING

A GMDSS radio log should be kept in order to provide a record of all events connected with the radio communications facilities on board. As a minimum the following should be recorded:

- A summary of communications relating to distress, urgency and safety. This includes any periods when a radio watch is discontinued and the reasons for doing so;
- The position of the ship at least daily;
- The identities of other stations with which the ship communicates or attempts to communicate;
- Records of any difficulties experienced with communications;
- Incidents involving unnecessary or inappropriate transmissions with the identities of the stations concerned, if known; and
- Cancellation of any false alerts.

The requirements relating to the retention of radio logs are determined by the flag State and the ITU Radio Regulations and should be included in the SMS.

3.15.6 COMMUNICATIONS EQUIPMENT TESTS

Radio equipment should be tested in accordance with the SMS (including flag State requirements) and the manufacturers' maintenance and operation manuals. Particular care should be taken to avoid the transmission of false distress/urgency alerts when testing GMDSS equipment.

Daily, weekly and monthly radio tests should be recorded in the GMDSS radio log and demonstrate continued compliance with the functional requirements of SOLAS, and should include but not be limited to:

Daily	• Function of DSC facilities (VHF, MF and HF) using built-in test functions • Battery supplies to GMDSS equipment including charging condition
Weekly	• Function of DSC facilities by way of a test call with a coastal station (if in range or at the earliest opportunity if out of range) • Reserve power supplies to GMDSS equipment other than batteries • Enhanced group calling (EGC) function
Monthly	• EPIRB function (using built-in test) and condition • SART function (using built-in test) and condition • Condition and security of batteries • Condition of aerials and insulators • Function test of survival craft two-way VHF equipment

3.15.7 FALSE DISTRESS ALERTS

Bridge Teams should be aware that the transmission of false distress and urgency alerts is a significant problem for the GMDSS. All effort should be made to reduce the possibility of a false alert being sent. Actions to be taken in the event of a false distress alert being sent are identified in Checklist B19.

Ships should use any means available to inform the appropriate authorities that a false distress alert has been transmitted and that it should be cancelled. Records of any false alert and subsequent remedial actions should be maintained on board.

Unless repeated violations occur, no action will normally be taken against the ship provided that a false alert is reported and cancelled without inappropriate delay.

3.16 LONG RANGE IDENTIFICATION AND TRACKING

Cargo ships of 300 gross tonnage and upwards and all passenger ships engaged on international voyages are required to be fitted with a system to transmit automatically the following Long Range Identification and Tracking (LRIT) information:

- The identity of the ship;
- The position of the ship; and
- The date and time of position provided.

LRIT is not part of the GMDSS but can contribute to effective SAR efforts.

3.17 ENSURING ENVIRONMENTAL COMPLIANCE

3.17.1 POLLUTION PREVENTION

The OOW should be familiar with the International Convention for the Prevention of Pollution from Ships (MARPOL) and the ship's Shipboard Oil Pollution Emergency Plan (SOPEP) or Shipboard Marine Pollution Emergency Plan (SMPEP) and any additional Company or national/regional requirements, as appropriate. The OOW should be fully conversant with relevant requirements for:

- MARPOL Annexes I to VI, particularly regarding Special Areas (SA) and Emissions Control Areas (ECA);
- Particularly Sensitive Sea Areas (PSSA);
- Ballast water management requirements;
- Fuel changeover procedures; and
- Any other regional or national restrictions.

3.172 REPORTING OBLIGATIONS

A potential pollution incident may be indicated by a slick in the vicinity of the ship. All ships should make a report to the relevant authorities when an incident involving another ship is observed or when an on board incident involves:

- A discharge or probable discharge of oil or noxious liquid substances above the permitted level for whatever reason, including when securing the safety of the ship or saving life; or
- A discharge or probable discharge of harmful substances in packaged form, including those in containers, portable tanks, vehicles and barges.

A report is also required if the ship suffers damage, failure or a breakdown that affects the safety of the ship or impairs safe navigation, and results in a discharge or probable discharge into the sea of a harmful substance. Reports are not required simply because there has been a breakdown or failure of machinery or equipment.

3.17.3 REPORTING POINTS

The SOPEP/SMPEP should include in an appendix the list of agencies or officials of administrations designated to receive and process reports from ships.

In the absence of a local agency or if there is any delay in contacting a listed reporting point, the nearest coastal radio station, reporting station or Rescue Co-ordination Centre (RCC) should be contacted by the quickest available means.

3.18 PERIODIC CHECKS OF NAVIGATIONAL EQUIPMENT

3.18.1 OPERATIONAL CHECKS

Operational checks on navigational equipment should be undertaken when preparing for sea and prior to port entry (see Checklists B1, B6 & B7) and at any other time required by the SMS.

Before entering restricted or coastal waters, it is important also to check that full control of engine and steering function is available.

3.18.2 ROUTINE TESTS AND CHECKS

Daily tests and checks of bridge equipment should be undertaken, including the following:

- Manual steering should be tested at least once per watch (see Checklist B1);
- Gyro and magnetic compass errors should be checked and recorded at least once a watch, when this is possible;
- The synchronisation of all compass repeaters, including repeaters at the emergency steering position, should be regularly checked;
- To ensure adequate performance, information from electronic equipment should always be compared and verified against information from different independent sources; and
- All available positioning systems and sources (GNSS, DGNSS, satellite communications terminals with integrated GNSS, and terrestrial radio-navigation aids) should be cross-checked.

Checks should confirm that the equipment is functioning properly and that it is successfully communicating with any other bridge system to which it is connected:

- Built-in test facilities should be used frequently, including alarm self-test functions;
- Configuration settings should be checked and confirmed to be in accordance with the SMS and the passage plan; and
- Operational settings and alarms should be correctly set and checked on the equipment and/or the BNWAS.

3.18.3 SOFTWARE ANOMALIES

The OOW should be able to detect software anomalies (see Sections 4.1.3 & 4.1.4) as they occur by:

- Carrying out regular performance checks;
- Carrying out regular cross-checks of information with other systems; and
- Following manufacturer and SMS instructions for maintenance and operation.

3.19 RECORDING BRIDGE ACTIVITIES

Records of bridge activities should be maintained by the OOW. The Company should have a policy for the maintenance of navigational records on paper and/or electronically (if approved by the flag State) within the SMS.

Information concerning position, course and speed should be recorded with sufficient detail to reconstruct a complete voyage if necessary:

- Paper and/or electronic records from course recorders, echo sounders and NAVTEX receivers should be retained and be suitably dated and time marked if practicable; and
- Voyage Data Recorder (VDR) and ECDIS voyage records should be maintained and download procedures understood and followed. Procedures for preserving this information should be covered in the SMS.

3.20 EMERGENCY SITUATIONS

3.20.1 MANAGEMENT

The Bridge Team should be aware that it could be called upon to respond to an emergency on board its own ship or another vessel to which it is obliged to render assistance.

In order to effectively manage emergency situations, the OOW should:

- Be fully conversant with the emergency checklists contained in this Guide (see Annex 3, Section C) and similar checklists and procedures within the SMS;
- Be familiar with the initial action to take in response to emergency situations; and
- Know the general emergency alarm signals and the actions to be taken on hearing or sounding an alarm.

The OOW should not hesitate in taking immediate emergency action before the Master arrives on the bridge. Following initial response, checklists such as those in this Guide (see Annex 3, Section C), may be used to ensure that all actions for an effective response to an emergency are completed.

SOLAS requires that an illustrated table describing the ship's life-saving appliances should be kept on the bridge.

3.20.2 SEARCH AND RESCUE

The OOW should be aware of the obligations relating to distress at sea and the instructions in the *International Aeronautical and Maritime SAR Manual Volume 3* (IAMSAR Vol III) relating to the alert, conduct and co-ordination of a distress (see Checklist C9).

Ships may be requested to provide assistance by a Rescue Co-ordination Centre (RCC). Ships able to render assistance are required to proceed at their best speed towards the casualty. If responding to a distress, the co-ordinating RCC should be informed to assist its rescue planning. Any decision by a ship not to provide assistance should be justifiable, recorded in the log book by the Master and the appropriate RCC should be informed.

A ship is only released from the obligation to provide assistance when informed that assistance is no longer required by the vessel in distress, the appropriate RCC, or another vessel which has already rendered assistance.

Every passenger ship will have on board a plan for co-operation with appropriate SAR services for use in the event of an emergency. The plan should be reviewed regularly and updated as required. These plans should also be available for Port State Control (PSC) inspection.

Ship's personnel should be familiar with the prescribed signals for indicating distress and communicating with ships rendering assistance and SAR units (including aircraft).

3.21 DANGER REPORTING

Ships should broadcast danger messages as required by SOLAS. The OOW should send a danger message if the ship experiences any of the following:

- Dangerous ice;
- A dangerous derelict or any other direct danger to navigation;
- A tropical cyclone;
- Sub-freezing air temperatures associated with gale force winds causing severe ice accretion on superstructures; and
- Winds of Force 10 or above on the Beaufort scale for which no storm warning has been received.

All danger messages should be transmitted as safety messages and include the following basic information:

- The kind of ice, derelict or danger observed;
- The position of the ice, derelict or danger; and
- The UTC time and date when the danger was last observed.

3.22 HELICOPTER OPERATIONS

Watchkeeping officers on a ship that is likely to be engaged in the transfer of personnel or stores by helicopter should use and be familiar with the *ICS Guide to Helicopter/Ship Operations.*

3.23 SECURITY AWARENESS

Masters and watchkeeping officers should be familiar with:

- General guidance on measures to reduce security risks on ships provided by flag and coastal States;
- Responsibilities and procedures included in the Ship Security Plan (SSP) in response to changes in the security level; and

- Advice on reporting, identifying threats and appropriate ship protection measures as contained in the latest industry best practices and guidance on responses to piracy and armed robbery at sea.

Good situational awareness (see Section 3.8) when navigating in a reporting area or designated risk area, or in an area where the security level has been raised, is essential to timely identification of a threat and effective protection of the ship.