

3.3.3 Navigation with a pilot on board

This section should be read in conjunction with section 2.7 – Passage planning and pilotage, and with reference to section 6 – Maritime pilotage.

3.3.3.1 Responsibilities

Once the pilot has embarked and has arrived on the bridge, the pilot will join the bridge team. The pilot has a specialised knowledge of navigation in local waters. Depending on local pilotage laws, the master may delegate the conduct of the ship to the pilot, who directs the navigation of the ship in close co-operation with the master and/or the OOW. It is important that the responsibilities of the pilot and the master are agreed and clearly understood so that the pilot can be integrated easily into the normal bridge management team and that any potential conflict is avoided. Should conflict arise, both parties have a responsibility to resolve this in a professional manner with the overriding priority of safety of navigation of the vessel. If the conduct of the vessel is delegated from the master to the pilot, this should be formalised and recorded.

The presence of a pilot does not relieve the master or the OOW of their duties and obligations for the safety of the ship. Both should be prepared to exercise their right not to proceed to a point where the ship would not be able to manoeuvre or would be in any danger.

3.3.3.2 Pilot embarkation/disembarkation

For information on pilot boarding arrangements, refer to annex A5.

3.3.3.3 Master/pilot information exchange on boarding (see bridge checklist B4)

The preliminary pilotage passage plan prepared in advance by the ship should be discussed and agreed with the pilot immediately after boarding. There should be sufficient time and searoom to allow this to happen safely.

Where lack of time or searoom does not allow the plan to be discussed fully, the bare essentials should be covered immediately and the rest of the discussion held as soon as it is safe to do so.

On a long pilotage passage, it may be appropriate to review and update the plan in stages.

3.3.3.4 Monitoring the pilotage

The safe progress of the ship as planned should be monitored closely at all times. This will also include track monitoring and regular fixing of the position of the ship, particularly after each course alteration, and monitoring underkeel clearance.

Verbal orders from the pilot also need to be checked to confirm that they have been carried out correctly. This will include monitoring both the rudder angle and rpm indicators when helm and engine orders are given.

It is recommended that communication between the pilot and the bridge team is conducted in the English language or a language common to all relevant personnel (see section 1.2.11).

If the master leaves the bridge, the OOW should always seek clarification from the pilot when in any doubt as to the pilot's actions or intentions. If a satisfactory explanation is not given, the OOW should notify the master immediately, taking whatever action is necessary before the master arrives. Whenever there is any disagreement with decisions of the pilot, the cause of concern should always be made clear to the pilot and an explanation sought.

The OOW should bear in mind that, during pilotage, the ship will need to be properly secured for sea. Excessive use of deck lighting at night may cause visibility interference.

3.3.4 At anchor (see bridge checklist B8)

On anchoring, a fix on the anchor drop position should be made and the ship's swinging circle ascertained, based upon the length of cable in use. Landmarks and transits should be selected for ease of monitoring the position of the ship as it lies at anchor, and appropriate light and shape signals should be exhibited in accordance with the COLREGS and any local regulations.

While at anchor, the OOW should maintain a check on the ship's position to monitor that the ship does not drag its anchor or move too close to any other anchored ship.

A proper look-out must be maintained and ship inspection rounds made periodically, particularly if the ship is anchored in waters which might present a risk of attack by pirates or armed robbers.

The master should be notified immediately if the ship drags her anchor, or if sea conditions or visibility deteriorate.

3.4 CONTROLLING THE SPEED AND DIRECTION OF THE SHIP

3.4.1 Use of the engines

In order not to jeopardise the safety of the ship, the OOW should not hesitate to use the engines to change speed on passage if the situation so requires.

Whenever possible, timely notice of intended changes to engine speed should be given to the engine room. If the ship is fitted with bridge control of the main engines, direct control of the engines will be possible from the bridge.

3.4.1.1 Safe speed

In compliance with the COLREGS, ships should at all times proceed at a safe speed. In restricted visibility, safe speed may require a reduction in service speed to reduce the stopping distance of the ship. When near ice, ships are specifically required to proceed at moderate speeds. Speed changes may be required to avoid a collision in circumstances where the ship is unable to alter course.

High speed craft and fast conventional ships should assess the risk caused by wash and wake, particularly in shallow water.

3.4.1.2 Control and different engine types

To control the main engines effectively, the OOW should be familiar with their operation from the bridge, as well as the operation of the propeller mechanism. The OOW should also be aware of any limitations the system may have and appreciate that the type and configuration of the ship's engines could have implications when changing speed. Direct-drive diesel, diesel through gearbox/clutch, turbo-electric and gas turbine engines all have relatively quick responses to change, provided the engines are on stand-by. Geared turbines are less responsive.

3.4.2 Steering control

Steering control of the ship will comprise manual steering, probably supplemented by an automatic pilot (autopilot) or other track control system.

In areas of high traffic density, in conditions of restricted visibility and in all other potentially hazardous situations, a helmsman should be available on the bridge, ready at all times to take over steering control immediately.

When steering the ship under autopilot, it is highly dangerous to allow a situation to develop to a point where the OOW is without assistance and has to break the continuity of the look-out in order to take emergency action and engage manual steering.

Changing between automatic and manual steering should always be made in good time under the supervision of the OOW. Manual steering should be tested once per watch and after prolonged use of the autopilot (see annex A7).

3.4.2.1 Use of override controls

Manual steering override controls can be used on those occasions when the autopilot is engaged and the OOW needs to take immediate and direct control of the steering.

Override controls typically have a non follow-up type of operation and are likely to differ from the main steering control position where follow-up control is usual.

The OOW needs to be familiar with the operation of the steering control systems on the bridge, as well as the method of control at the emergency steering position.

3.4.2.2 Manoeuvring data

Ship's manoeuvring data is contained on the Pilot Card and Wheelhouse Poster (see annexes A3 and A4). Some ships also have a manoeuvring booklet. The OOW needs to be familiar with this data.

It is important not only to record on the Pilot Card the ship's draught, but also any permanent or temporary ship idiosyncrasies that could affect the manoeuvrability of the ship. A ship may, for example, have a tendency to steer to port at full speed, but steer to starboard at slow speed.

3.5 RADIOCOMMUNICATIONS

3.5.1 General

The following basic principles apply to all communication carried out by radio:

- absolute priority should be given to distress, urgency and safety communications;
- interference with other radio users should be avoided;
- frequencies should be used for their correct purpose.

The 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.

3.5.2 Safety watchkeeping on GMDSS ships

The OOW should normally be in possession of a General Operator's Certificate (GOC). For ships operating only in GMDSS Area A1, a Restricted Operator's Certificate (ROC) is sufficient. The OOW will be responsible for ensuring compliance with the radio watchkeeping requirements of SOLAS, the ITU Radio Regulations and any local watchkeeping rules.

3.5.2.1 VHF watchkeeping

The VHF watchkeeping range is 20 to 30 nautical miles, depending upon antenna height. All ships must maintain a watch on:

- DSC Channel 70 (156.525 MHz) (Digital Selective Calling);
- Channel 16 (156.8 MHz) when practicable (Distress, safety and calling);
- Channel 13 (156.650 MHz) when practicable (Inter-ship).

3.5.2.2 MF (300–3000 kHz) watchkeeping

Medium frequency (MF) broadcasts will typically have a R/T range of between 150 and 250 nautical miles by day and a DSC range of 600 to 700 nautical miles. Reception range will be greater at night. Ships must keep a continuous watch on:

- the NAVTEX frequency 518 kHz, when in an area where the service is provided;
- the DSC frequency 2187.5 kHz.

3.5.2.3 HF (3000 kHz – 30 MHz) watchkeeping

High frequency (HF) broadcasts have an unlimited range. Ships fitted with HF must keep a continuous watch on:

- the DSC distress frequency 8414.5 kHz;
- at least one of the DSC frequencies 4207.5, 6312, 12577, 16804.5 kHz, as appropriate to the time of day and the position of the ship.

3.5.2.4 Satellite watchkeeping

Ships fitted with a ship earth station (SES) must keep a continuous watch on the satellite appropriate to the ship's position. The range of satellite broadcasts is unlimited (except in polar regions).

3.5.2.5 Maritime safety information

Maritime safety information (MSI) is defined as navigational and meteorological warnings, meteorological forecasts and other urgent safety related messages broadcast to ships.

A continuous MSI watch should be kept at sea at all times by all ships. The NAVTEX receiver meets this requirement while the ship is within a NAVTEX coverage area. Beyond such coverage, watchkeeping should be undertaken using the appropriate MF, HF or satellite frequencies on which MSI is broadcast.

3.5.3 Log keeping

A radio log must be maintained containing up to date records of all incidents connected with radiocommunications that appear to be of importance to the safety of life at sea. In particular, the following are normally required:

- a summary of communications relating to distress, urgency and safety traffic;
- a reference to important radio service incidents;
- the position of the ship at least once per day.

The log should contain the identities of other stations with which the ship communicates or attempts to communicate, and records of any difficulties experienced owing to congestion, interference, atmospheric noise or ionospheric disturbances.

Incidents involving obscene language or unnecessary transmissions should be recorded with the identities of the stations concerned, if known. This is particularly relevant to VHF Channel 16.

3.5.4 Testing of equipment and false alerts

Radio equipment should be tested at the intervals stated by the manufacturer and in accordance with flag state requirements. Great care should be taken to avoid the transmission of false alerts when testing equipment.

Regular testing of radio equipment will demonstrate continued compliance with the requirements of Regulation 4 of SOLAS Chapter IV (Functional requirements).

3.5.4.1 Cancellation of false alerts

If a distress alert is inadvertently transmitted by either VHF, MF or HF DSC:

- the equipment must be reset immediately;
- as appropriate, the equipment should be:
 - set to VHF Channel 16, or
 - tuned for R/T on MF 2182 kHz, or
 - tuned for R/T on the HF distress and safety frequency in each band in which the false alert was transmitted;
- a broadcast message to "all stations" must be transmitted, cancelling the false alert.

If a distress alert is inadvertently transmitted by a ship earth station (SES), the appropriate rescue co-ordination centre (RCC) should be notified that the alert is cancelled by sending a distress priority message by way of the same coast earth station (CES) through which the false distress alert was sent.

If a distress alert is inadvertently transmitted by an EPIRB, the appropriate RCC should be contacted through a shore station and the distress alert should be cancelled.

3.6 POLLUTION PREVENTION

The OOW should be aware of the serious effects of operational and accidental pollution of the marine environment and should be familiar with MARPOL and the ship's Shipboard Oil Pollution Emergency Plan (SOPEP) or Shipboard Marine Pollution Emergency Plan (SMPEP) as appropriate. (An SMPEP can be a combined document for the oil pollution emergency plan and that for noxious liquid substances.)

3.6.1 Reporting obligations

All ships should make a report to the relevant authorities when an incident involving another ship is observed or an incident on their own ship involves:

- o a discharge or probable discharge of oil or of noxious liquid substances above the permitted level for whatever reason, including securing the safety of the ship or saving life; or
- o 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. It should be noted that reports are not normally required if there has only been a breakdown or failure of machinery or equipment.

3.6.1.1 Reporting points

The SOPEP/SMPEP should include as an appendix the list of agencies or officials of administrations that should be contacted.

In the absence of a local agency or if there is any delay in contacting a listed reporting point, the nearest coastal radio station, designated ship movement reporting station or RCC should be contacted by the fastest available means.

3.7 EMERGENCY SITUATIONS

3.7.1 General

The OOW should be fully conversant with the emergency checklists contained in Part C of this Guide or similar checklists within the ship operator's Safety Management System and should know what initial action to take in response to emergency situations.

A collision (see emergency checklist C2), a grounding (see emergency checklist C3) or a man overboard (see emergency checklist C4) are examples of situations that will require immediate action from the OOW before the master arrives on the bridge.

SOLAS requires emergency training, drills and mustering exercises to be carried out. These drills will involve the OOW on those ships where the bridge is the designated emergency control station. The OOW should be fully conversant with the general emergency alarm signals, the actions to be taken on hearing or instigating an alarm and the ship's emergency plans.

An illustrated table describing the ship's life saving appliances should be kept on the bridge. Ships or persons in distress should use the prescribed signals when communicating with life-saving stations, maritime rescue units, MRCCs and aircraft engaged in search and rescue operations.

3.7.2 Reporting

The OOW should be aware that SOLAS Chapter V Regulation 32 provides details of the obligation to broadcast danger messages to ships in the area and the nearest coast station with notification of conditions that include:

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

The safety signal should be used when announcing danger messages (see section 4.12.3.3).

3.7.3 Search and rescue (see emergency checklist C7)

The OOW should be aware that SOLAS Chapter V Regulation 33 includes details of ships' search and rescue (SAR) obligations.

On receiving a signal from any source that persons are in distress at sea, ships that are in a position to provide assistance are bound to proceed with all speed to their assistance. Ships can also be requisitioned to provide assistance.

During SAR operations, ship-to-ship communication should be by VHF or MF. Satellite channels should be kept free for communications with rescue co-ordination centres.

Guidance on search and rescue activity can be found in the IAMSAR Manual published by IMO.

3.7.4 Helicopter operations

The OOW of a ship that is likely to be engaged in the transfer of personnel or stores by helicopter should become familiar with the ICS *Guide to Helicopter/Ship Operations*.

3.7.5 Piracy

The OOW of a ship that is likely to operate in waters that may present a risk of attack by pirates or armed robbers should be familiar with the latest edition of the ICS/ISF publication *Pirates and Armed Robbers: Guidelines on Prevention for Masters and Ship Security Officers*.