

Bridge Instructions



Bridge Instructions

The Swedish Club 2011, Edition 2

The Bridge Instructions are based in accordance with IMO's International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 and 2010 as per the Manila amendments (STCW-Convention), ICS' Bridge Procedures Guide and The Nautical Institute's Bridge Watchkeeping.



Published by The Swedish Club
P.O. Box 171, SE-401 22 Gothenburg, Sweden
Tel +46 31 638 400, Fax +46 31 156 711
E-mail swedish.club@swedishclub.com

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1. The Master

- 1.1 has the ultimate responsibility for the safe and efficient operation of the vessel and always has overall command.
- 1.2 shall ensure that each officer of the watch (OOW) is sufficiently familiar with the ship's navigational equipment, parameters to be used, manoeuvring capabilities and all safety equipment.
- 1.3 shall ensure that the OOW is prepared and ready to assume sole operational responsibility for the watch at sea.
- 1.4 shall expressly inform the OOW when he assumes control of the vessel's navigation as well as when he returns the responsibility for the navigation of the vessel to the OOW.
- 1.5 shall ensure that all communication is done by closed loop.
- 1.6 shall organise the watchkeeping, ensuring that the bridge team members (himself included) are allowed sufficient rest periods in accordance with the STCW convention and/or national rules and regulations.
- 1.7 shall issue written standing orders and special instructions as necessary.

- 1.8 shall at least assess traffic density, danger zones, weather conditions, experience of the Officer and ensure that sufficient crewing for the safe navigation of the vessel is never compromised and that all factors regarding the safe navigation of the vessel are prudently assessed. This is not an exclusive list.
- 1.9 shall ensure that all members of the bridge teams are properly trained regarding all steering modes.
- 1.10 shall ensure that all bridge team members are familiar with the company's Safety Management System (SMS).
- 1.11 shall only allow the OOW to be sole watchkeeper if the situation has been carefully assessed. Assistance should be available immediately to assist the OOW if the situation changes.
- 1.12 shall ensure that there is a climate onboard that encourage challenges and assertiveness.

2. The Officer of the Watch (OOW)

- 2.1 is the master's representative and his primary responsibility at all times for the safe navigation of the vessel. The OOW shall comply at all times with the applicable regulations for preventing collisions at sea.
- 2.2 shall ensure that a good lookout is maintained at all times using all means available, including but not limited to, visual, audible and electronic.
- 2.3 shall ensure that all communication is carried on by closed loop.
- 2.4 shall always comply with the master's written standing and special orders.
- 2.5 shall ensure that members of the bridge team are informed and updated on occurrences during the watch that are of significance to the safe navigation of the vessel.
- 2.6 shall always comply with the vessel's SMS.
- 2.7 shall check during every watch at least the following list, which is not exhaustive:
- latest weather
 - reporting points
 - compliance with environmental regulations
 - autopilot parameters
 - ECDIS parameters
 - radar parameters
 - AIS is updated
 - check the different steering modes

- GPS signal strength and accuracy
 - the gyro and magnetic compass errors and the synchronisation between the compass repeaters and the main gyro;
 - lights and signals
 - the operation of the GMDSS equipment.
- 2.8 shall call for reinforcement of the watch whenever required.
- 2.9 shall use SMS-approved checklists for critical operations.
- 2.10 shall not use any distracting devices i.e. mobile phones or computers that are not related to the safe navigation of the vessel or the operation.
- 2.11 shall immediately call the master:
- in accordance with the master's standing orders and as per the company's SMS
 - when visibility deteriorates below the limit stated in the master's standing orders
 - when in doubt regarding the intentions of other vessels
 - if there is the slightest doubt of the vessel's true position
 - when there is an engine breakdown, when steering gear or any essential navigational equipment not working properly, and for any other reason causing doubt about the safe navigation of the vessel
 - if you are thinking about calling the Master, you should call the Master.

3. The Lookout

- 3.1 A good lookout shall be maintained at all times using all means available, including (but not limited to) visual, audible and electronic means.
- 3.2 The duties of the lookout shall be clearly communicated to the AB assuming the watch.

THE LOOKOUT

- 3.3 shall use closed loop communication.
- 3.4 should be briefed about what to expect during the watch, such as lights i.e. changing visibility conditions, traffic density, distracting light from shores.
- 3.5 shall report all visible lights and objects.
- 3.6 should be positioned so his/her night vision is not affected.
- 3.7 shall be trained to use basic functions of the radar.
- 3.8 shall not be occupied on activities that may impede the lookout.

4. Bridge Team

To have an efficient and safe Bridge team, it is very important that all tasks are well defined and familiar. In a well functioning system, all team members should know what to expect from each other and who is responsible for what; the goal is to eliminate assumptions.

The advantages of the system will be obvious in situations requiring a high degree of attention and close monitoring of the navigation, such as navigating in waters with dense traffic, fog and during arrival and departure.

In the ideal system, there will be several Officers and Lookouts but this is not always achievable with smaller crews. This system should still be capable of being implemented with team members having several roles.

The definition of the duties is;

COMMAND

The Master has always overall command of the vessel but not necessarily the Conn.

CONN

- will be in operational control
- informs all team members about planned manoeuvres and actions
- delegates defined tasks to team members
- shall request challenges from team members when limits are exceeded

MONITOR

- shall monitor the progress of the vessel and ensure that actions of the Conning officer have the desired effect
- shall challenge the actions of the Conning officer when limits in the passage plan are exceeded or when in doubt about the Conning officer's actions
- shall be updated on the progress of the vessel to the extent that he/she can assume control of the vessel at any time
- under most circumstances, it is an advantage if the more senior officer acts as the Monitor

NAV

- Plotting position
- Completing the logbook
- Completing Checklists

LOOKOUT

- Reporting visible traffic or objects
- Hand steering

It is prudent to rotate the different tasks between the team members, so that all are familiar with every task.

Before arrival and departure a pre-arrival and pre-departure meeting should be held. During this meeting what to expect and how the operation should be executed safely should be discussed and tasks should be delegated.

During a normal sea watch it is common to have one officer on the bridge and one lookout. The officer will monitor the vessel's progress. This system requires that the bridge is manned with a minimum of two officers. The officer with the Conn will be in operational command of the vessel and ideally will be in the cockpit all the time, whilst the Monitor will monitor the vessel's progress and the effect of the Conning officer's actions, and that orders are given and executed correctly. The Monitor should be assertive and question orders. The level of attention and follow-up by the Monitor shall be such that he/she can assume control of

the navigation of the vessel at any given moment. The officer with the NAV task should plot the vessel's position, fill out the checklist and the logbook and deal with issues that the conning officer cannot handle from the cockpit.

The Lookout should report all visible traffic and objects, and be on standby for hand steering at anytime.

In an ideal world each separate duty should be handled by one team member only. This is not always possible, and a team member can have several duties.

Command = Master

Conn = Master, Pilot, OOW

Monitor = Master, OOW

Nav = OOW

Lookout = AB

For this system to work it is imperative that correct information is received by all team members and that closed loop communication is used. It should always be clear who has the Conn i.e. if the OOW has the Conn, the Master must clearly inform the bridge team when he takes the Conn.

5. Navigation

- 5.1 The OOW must be familiar with the operation of the engine controls including, but not limited to, limiting and override functions.
- 5.2 The OOW and the helmsman must be familiar with the changeover between manual/automatic steering. In addition, the OOW needs to know the characteristics of the steering system including:
- the emergency steering system;
 - all automatic steering settings and override functions;
 - and all other different steering modes and their capabilities and limits.
- 5.3 The OOW must understand the factors influencing the manoeuvring characteristics of the vessel such as squat and the propeller rotation.
- 5.4 The OOW shall refer to the wheelhouse poster and learn the vessel's stopping distances and turning characteristics.
- 5.5 The anchors shall be ready for immediate use during arrival and departure.
- 5.6 The use of automatic or manual steering mode should be dictated by e.g. visibility, traffic situation and the Master's standing orders.
- 5.7 Special consideration needs to be taken aboard vessels with high efficiency rudders or azipods.

- 5.8 Course alterations should be ordered by indicating to the helmsman the direction and rudder angle that is desired to execute the turn (see IMO Standard Marine Navigational Vocabulary).
- 5.9 The execution of helm orders shall be closely monitored by the OOW.
- 5.10 All orders and courses should be repeated loud and clear.
- 5.11 Closed loop communication should be used. A closed loop sequence of orders may be illustrated as follows – the pilot orders – “starboard, steer three-five-five”. The helmsman repeats the order verbatim – “starboard, steer three five-five”. The pilot then closes the loop by confirming to the helmsman that the order was correctly repeated.
- 5.12 Ensure that correct parameters on the ECDIS, DP and autopilot are chosen.
- 5.13 Ensure that proper radar scale is chosen and be aware of the limits and errors in the radar. Use different scales on the radars and change the range frequently to detect targets both far and close.
- 5.14 Ensure that the GPS is working properly and check the signal strength. Be aware of the position error of the GPS even if DGPS is available.
- 5.15 Have planned RoT or turn radius for next alteration.
- 5.16 Plan for squat and bank effect in shallow waters.
- 5.17 If the bridge is ECDIS-approved, verify that the electronic chart uses an approved ENC; if not paper charts should be used.

- 5.18 Never use the AIS for navigation or collision avoidance.
- 5.19 Never be reliant on one system; always double check, if possible to do a two-person check for critical operations.
- 5.20 Visitors should not be present on the bridge during critical operations unless with the Master's approval.

6. On passage – Voyage Planning

- 6.1 Suggestions on how to execute good voyage planning can be found i.e. in the Bridge Procedures Guide published by the International Chamber of Shipping.
- 6.2 Information about the most favourable route should be gathered from officially updated charts, pilot books, tide tables and tidal current tables, notices to mariners and radio navigation warnings; all possible means are to be used.
- 6.3 Ensure that all charts, publications and ENC's are updated for the current voyage.
- 6.4 Courses should be laid down in the charts and, where appropriate, wheel over position and turning radius should be marked on the chart. PI to be used when possible. Keep only the present voyage track in the chart. Plan should be berth to berth.
- 6.5 Maximum allowable cross track margin should be indicated on the chart as well as danger zones with minimum clearing distances. Environmental areas should be marked in the plan as per MARPOL regulations, port state regulations, i.e. SECA area or other local regulations, to be aware when discharge is allowed and not or any other special regulations for the current trading area.
- 6.6 Information about reporting points, relevant VHF channels as well as required speed changes should also be indicated in the passage plan and MARSEC levels as per flag regulations for different port and areas.

- 6.7 The OOW shall frequently verify the vessel's position. When using electronic positioning aids, such as GPS, independent positioning methods should be used to verify that the instruments are functioning properly. In proximity to land GPS should ideally not be used for verification of the position; radar is to be preferred.
- 6.8 The passage plan should be signed by all Officers and the Master.

7. Collision Avoidance

- 7.1 To be able to correctly evaluate your options in a close quarter situation it is imperative to know the vessel's position at all times and its proximity to navigational dangers.
- 7.2 Proceed at safe speed and take into consideration the visibility, traffic density, vessel manoeuvrability, weather conditions, radar scale and the radar's limits and built-in errors.
- 7.3 Use all available means to determine whether any risk of collision exists. If in doubt, a risk shall be deemed to exist. Never use AIS information for collision avoidance, as the information is based on the other vessel's unit.
- 7.4 Every effort must be made to ascertain whether a close quarter situation is developing and must be determined by repeated and systematic observations.
- 7.5 The give-way vessel shall, as far as possible, take early and substantial action to keep well clear.
- 7.6 The effectiveness of the avoidance manoeuvre shall be carefully monitored until the other vessel is finally past and clear.
- 7.7 When it becomes apparent that the give-way vessel is not taking appropriate action under the rules to avoid a collision, the stand-on vessel may take action to avoid the collision by manoeuvre alone. If it is apparent that imminent collision will occur, the stand-on vessel should do everything to avoid the collision.

- 7.8 The use of whistle signals in accordance with the COLREGS is obligatory in situations where a vessel creates uncertainty about the vessel's intentions and should, therefore, take priority over attempts to contact the vessel by other means such as VHF.
- 7.9 In restricted visibility:
Proceed at safe speed adapted to the circumstances and the vessel's capability.
- Keep the engines ready for immediate manoeuvre.
 - Post a lookout.
 - Sound fog signals.
 - Inform the master when visibility deteriorates below the limit specified in the master's standing orders.
 - Use all radars.
 - Determine the risks of close quarter situations by plotting and other systematic observations.
 - Be aware of the requirements under Rule 19 of the Collision Regulations.

8. Avoid Close Quarter Situations

- 8.1 Use long-range scanning to obtain early warning of risk of collision.
- 8.2 Change range on the radar frequently to detect objects both close to and at a distance.
- 8.3 Use systematic observation and plotting of detected objects to determine closest point of approach and if any risk of collision exists.
- 8.4 Do not make assumptions based on unreliable information, in particular unreliable radar information.
- 8.5 A risk of collision shall be deemed to exist if the compass bearing of an approaching vessel does not change appreciably.
- 8.6 Inform bridge team members when the range is changed on the radar.
- 8.7 Consider adding additional members to the bridge team.
- 8.8 Consider the present situation when deciding the appropriate crewing level and constantly reevaluate the situation.

9. Relief of the Watch

- 9.1 The OOW should not hand over the watch if there is any reason to believe that the relieving officer is unfit or temporarily unable to carry out his duties effectively.
- 9.2 Before taking over the watch, the relieving officer must be satisfied that the ship's position is correct and that the intended track, course and speed are appropriate.
- 9.3 The OOW is to supply information to the relieving watch about important developments during the watch, such as the proximity to navigational dangers, traffic situation, course changes, weather information, navigational warnings and the master's special orders.
- 9.4 The relieving watch must arrive on time to the bridge so their eyes have time to adjust to night vision before they assume responsibility of the watch.
- 9.5 The handing over of the watch should be done at a time when the vessel is not involved in manoeuvring or taking action to avoid a hazard.

10. Navigation with Pilot on Board

- 10.1 The presence of a pilot on board does not relieve the master or OOW from their duties and obligations for the safety of the ship.
- 10.2 Upon boarding, the pilot should be handed a completed pilot card with details of drafts and a summary of the vessel's manoeuvring information as illustrated in the Bridge Procedures Guide (IMO Resolution A.601(15)).
- 10.3 When the pilot boards the vessel, the bridge team shall require information about the passage plan, expected traffic, tugs, speed reductions and other important information concerning the passage.
- 10.4 During pilotage, the OOW is to continuously monitor that the vessel is proceeding according to the passage plan and to record positions in the chart at frequent intervals.
- 10.5 The OOW shall ensure that steering orders and engine movements are executed according to the pilot's orders.
- 10.6 The OOW must cooperate closely with the pilot and, if in doubt as to the pilot's actions or intentions, he must immediately seek clarification from the pilot. If doubt still exists, the master should be called and the OOW should take whatever action is necessary.
- 10.7 If the pilot is executing course changes on the autopilot, the OOW must require the pilot to inform him of any course changes and to inform the pilot to use closed loop communication.

EMBARKATION AND DISEMBARKATION

- 10.8 Before the pilot disembarks, the bridge team should obtain information about the expected traffic situation in the vicinity of the pilot station and other information relevant for the safe passage from the pilot station.
- 10.9 Before a pilot is to embark or disembark, the boarding arrangements should be prepared in accordance with the pilot's instructions and the requirements of the International Maritime Pilots Association. Ensure there is sufficient lee during embarkation and disembarkation.
- 10.10 Ensure that a lifebuoy with light, heaving line, manropes and appropriate lighting are positioned at the pilot ladder.
- 10.11 An officer who is able to communicate with the bridge is to supervise the embarkation and disembarkation of the pilot.

11. At Anchor

- 11.1 When at anchor, the OOW needs to consider i.e. the condition of the holding ground, weather and tidal conditions as well as traffic flow.
- 11.2 On anchoring, the position and swing circle should be determined.
- 11.3 To detect dragging, the vessel's position should be checked frequently, preferably by different methods (visual bearings, radar bearing, GPS, ECDIS and distance).
- 11.4 Distances to surrounding vessels and navigational dangers should be recorded.
- 11.5 Proper lights and shapes should be displayed.
- 11.6 Monitor the movements of other vessels in the anchorage.
- 11.7 Observe changes regarding weather, tide and currents.
- 11.8 If the weather deteriorates or there is a risk of dragging, inform the master and make the engines ready for manoeuvre. If necessary, consider lowering a second anchor but be aware of the extra risk of the anchors being entangled.

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Contact

Head Office Gothenburg

Visiting address:

Gullbergs Strandgata 6, 411 04 Gothenburg

Postal address:

P.O. Box 171, SE-401 22 Gothenburg, Sweden

Tel +46 31 638 400

Fax +46 31 156 711

E-mail: swedish.club@swedishclub.com

Emergency tel +46 31 151 328

Piraeus

5th Floor, 87 Akti Miaouli

GR-185 38 Piraeus, Greece

Tel +30 211 120 8400

Fax +30 210 452 5957

E-mail: mail.piraeus@swedishclub.com

Emergency tel +30 6944 530 856

Hong Kong

Suite 6306, Central Plaza

18 Harbour Road, Wanchai, Hong Kong

Tel +852 2598 6238

Fax +852 2845 9203

E-mail: mail.hongkong@swedishclub.com

Emergency tel +852 2598 6464

Tokyo

2-14, 3 Chome, Oshima, Kawasaki-Ku,

Kawasaki, Kanagawa 210-0834, Japan

Tel +81 44 222 0082

Fax +81 44 222 0145

E-mail: mail.tokyo@swedishclub.com

Emergency tel +8 44 222 0082

Oslo

Tjuvholmen Allé 17, NO-0252 Oslo

Tel +47 9828 1822/9828 0514

E-mail: mail.oslo@swedishclub.com

Emergency tel +46 31 151 328