

EMPA RECOMMENDATION ON AUTOMATIC STEERING SYSTEMS

Introduction

Automatic steering systems are commonly used in the maritime industry on many vessel types and in both ocean navigation, coastal navigation and pilotage waters. Correctly adjusted "Automatic Steering Systems" can allow for the accurate steering of a vessel in differing conditions like;

- When the vessel is in loaded or ballast condition.
- When a vessel travels at a reasonable speed (at slow speeds automatic steering systems can be inaccurate).
- In different weather conditions.

Like all automatic systems, they are prone to error and need constant monitoring to ensure accuracy.

Consideration

Taking into account:

- IMO SOLAS Chapter V Regulation 24, 25 and 26.
- Automatic steering systems are commonly used in open and pilotage waters.
- That the use of automatic steering systems may be restricted by local regulations, with some local regulations specifying a helmsman.
- A contributory cause of many casualties has been the improper use and over-reliance upon heading control systems.
- Whether using automatic steering or a helmsman, a proper and effective lookout is required at all times to avoid a collision.
- In the event of system failure, a helmsman should always be available to take over steering to avoid collisions/groundings.
- All watchkeeping officers should be thoroughly familiar with the procedures when changing from automatic to manual steering and engaging emergency steering.

Policy

- The role of EMPA is to facilitate the exchange of information between its members to continuously improve the professional and technical proficiency of Maritime Pilots in its Member Associations, Pilots within the EU, and in neighboring countries.
- EMPA aims to assure the safety of all Maritime Pilots in the EU and neighboring countries by increasing the safety and efficiency of navigation, thereby enhancing environmental protection from ship-borne pollutants.
- EMPA strongly defends and advocates that Pilotage as an essential and unique service to the shipping industry, can only be performed in an environment free from competition.
- EMPA aims to work at the forefront of our profession and collaborate with all stakeholders.
- EMPA recommendations offer practical advice, drawing from its members' collective knowledge and experience, to be read in addition to local, national, and international regulations. These recommendations provide information to Pilots, shipowners, and Captains, advising also, stakeholders that directly or indirectly impact the maritime industry.
- EMPA recommendations should be read in conjunction with equipment instructions and manuals. These recommendations are to support training, not replace training and are not to be interpreted as conflicting with local, national, or international regulations.
- The Captain of the vessel must clarify that the "Autopilot" is fully functional and that the manual steering has been tested after prolonged use of automatic steering systems and before entering areas where navigation demands high precision.
- The pilot should know the limitations and consequent risks when using the Auto steering mode.
- Watchkeepers must understand the difference between using heading control systems in Follow-up (FU) and Non-follow-up (NFU) modes. In FU mode (wheel or tiller), the rudder will alter to the rudder angle the wheel/tiller is set to, but in NFU mode (joystick/buttons), the rudder will continue to turn as the joystick is moved to port or starboard or as long as the port or starboard button is pressed.
- Automatic steering systems struggle to accurately maintain set headings at slow speeds and/or in heavy seas. The performance of heading control systems depends upon correct control settings tailored to the prevailing conditions of the ship's speed, displacement and, particularly, the sea state. Automatic steering systems must be used within their designed parameters of operation.
- Older autopilot systems require heading alignment before engaging the autopilot. Should the heading not be correctly aligned on these older systems before engaging autopilot, the vessel may sheer suddenly to port or starboard.
- In areas requiring navigation with special caution, IMO SOLAS Chapter V Regulation 25 requires more than one steering gear power unit to be in operation.
- Routine checks should be conducted on all aspects of steering gear and systems before departure as specified in SOLAS Ch V Regulation 26.



- We expect emergency steering drills are carried out every three months as per SOLAS requirements.

EMPA Recommends:

- At all times, the requirements of SOLAS CH 5 regulations 24, 25 & 26 are met.
- Where the use of Automatic Steering Systems is not restricted by local regulations, the use of such devices in pilotage waters should be left to the professional judgement of the pilot in conjunction with normal Master/Pilot relationship and company requirements
- The pilot should never be obliged to operate the "Autopilot".
- Whenever the Auto Steering mode is used, a qualified helmsman should always be immediately available to take over the helm should the necessity arise.
- At all times, the vessel needs to comply with SOLAS Chapter V Regulation 24. In areas of high traffic density, in conditions of restricted visibility and in all other hazardous navigational situations where heading or track control systems are in use, it shall be possible to establish manual control of the ship's steering immediately. In the circumstances described above, the officer in charge of the navigational watch shall have available without delay the services of a qualified helmsman who shall be ready at all times to take over the steering control and the changeover from automatic to manual steering and vice versa shall be made under the supervision of a responsible officer.
- All steering pumps should be operational during pilotage, and the emergency steering system should be available for immediate use.
- Rudder limits and rates of turn should be adjusted correctly for the vessel's planned passage speed, loaded condition and prevailing circumstances and conditions.
- The off-course alarm should be active when using autopilot, and its limits should be adjusted within safe parameters.
- Pilots and bridge officers should exercise extreme caution when using automatic steering devices in areas with a strong tidal stream.
- When using river pilot systems, the Pilot should ensure they are thoroughly familiar with the system in use.
- Pilotage authorities should decide if track control systems are appropriate, considering the local circumstances and conditions. Furthermore, as track control systems are designed to keep the vessel on a pre-determined track, this track should be reviewed and approved by the Pilotage authority and Pilot before execution, taking into consideration various planning aspects of the intended track, such as courses and speeds for the different legs, wheel-over-points, turn radius, cross-track error allowance, proximity to hazards and minimum UKC.



