MERCURY

Electronic Chart Display and Information Systems (ECDIS) Operational Training Course

15 – 19 February 2027
Rome (Italy)



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Electronic Chart Display and Information Systems (ECDIS) Operational Training Course

Ref: 25_1082010 **Date:** 15 – 19 February 2027 **Location:** Rome (Italy) **Fees:** 7200 Euro

The Electronic Chart Display and Information Systems ECDIS Operational Training Course is a one-week professional course for bridge watchkeeping officers, maritime navigators, and marine technical specialists managing digital charts and sensor inputs. Working through display configurations, route planning, and sensor alarm diagnostics, you construct an ECDIS Passage Planning and Navigation Safety Plan. This course is delivered by Mercury Training Center to ensure thorough operational chart proficiency.

About This Course

Navigators often struggle with sensor input discrepancies, alarm floods, and improper safety contour settings that create grounding risks and regulatory non-compliance. To follow this course, you must already possess navigational bridge watchkeeping experience and understand standard nautical charting principles. Through guided navigation simulator exercises, you configure display settings, execute route validation, and manage chart maintenance.

Who It Is For

- Professionals responsible for bridge watchkeeping, route execution, and anti-grounding monitoring during sea voyages
- Professionals responsible for marine passage planning, safety contour calculation, and navigation audit compliance
- Professionals responsible for electronic chart catalog maintenance, permit licensing, and chart update installation
- Professionals responsible for integrating marine sensors, position datums, and automated radar plotting aids into bridge displays

This course is not for complete maritime novices who require introductory navigation theory, nor is it for hydrographic cartographers seeking specialized digital chart production and survey compilation workflows.

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Competencies You Will Build

- Display Vector Configuration: Selecting chart presentation layers, depth contours, and display modes in compliance with IHO S-52 standards.
- Sensor Integrity Monitoring: Cross-checking position sources, detecting datum shifts, and identifying electronic sensor feed failures.
- Route Planning and Checking: Generating waypoints, calculating cross-track error corridors, and executing automated anti-grounding geometric verifications.
- Safety Contour Calculation: Computing vessel dynamic draft, squat allowances, and safety depths to establish vessel safety boundaries.
- Chart Data Management: Decrypting chart permits, installing electronic chart updates, and auditing chart update logs under IHO S-63 protocols.
- Fail-Safe Voyage Monitoring: Responding to positioning feed dropouts, dead reckoning transitions, and critical navigational alert thresholds.

What You Will Be Able to Do

By the end of the course you will be able to:

- From voyage departure coordinates, configure system display layers and safety contour values matching vessel draft and under-keel clearance policies.
- Given bridge sensor inputs, cross-verify primary satellite positions with radar overlays and dead reckoning modes to detect sensor drift.
- Using electronic chart catalogs, load and verify electronic navigational charts using IHO S-63 data protection decryption keys and update notices.
- From maritime passage parameters, construct validated routes with designated turn radiuses, waypoint speed limits, and cross-track margins.
- Given simulated navigational emergencies, manage alarm escalations and switch to auxiliary position referencing during primary sensor failures.
- Using navigation audit checklists, evaluate passage plan logs and system configuration settings against maritime navigation requirements.

Course Content

Day 1: Chart Display Standards and Sensor Inputs

- ECDIS Architecture and Operating Principles Under IMO Performance Standards
- IHO S-52 Display Specifications and Presentation Library Symbol Recognition
- Coordinate Datums, WGS84 Geodetic Reference, and Datum Shift Detection
- Sensor Inputs Integration Covering Heading, Speed Log, and Position Feeds
- Display Categories Selection Balancing Standard, Base, and Custom Information

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Day 2: Safety Parameters and Chart Data Licensing

- Safety Depth and Safety Contour Mathematical Formula Calculations
- Shallow and Deep Contour Definitions and Under-Keel Clearance Margin Rules
- Electronic Navigational Chart Structure and Vector Data under IHO S-57
- Data Protection and Encryption Key Management Under IHO S-63 Protocols
- Manual Chart Updates and Notice to Mariners Correction Verification

Day 3: Route Planning and Automated Route Checking

- Waypoint Creation, Rhumb Line and Great Circle Sailing Selection
- Cross-Track Margin Assignment Based on Fairway Width and Traffic Separation
- Automated Anti-Grounding Route Safety Inspection and Danger Area Audits
- Alternative Route Generation, Waypoint Notes, and Contingency Anchorages
- Tidal Height and Dynamic Squat Integration in Passage Schedules

Day 4: Route Monitoring and Bridge Alarm Management

- Look-Ahead Vector Settings, Safety Frame Scaling, and Guard Zone Geometry
- Radar Target Overlay Integration and Target Motion Tracking Alignment
- Navigation Watch Alarms, Failure Warnings, and Alert Acknowledgment Logic
- Loss of Position Sensor Transitions to Dead Reckoning and Parallel Indexing
- Bridge Logbook Automation, Route Archiving, and Playback Data Analysis

Day 5: Practical Navigation and Plan Finalization

- Exercise on Chart Updating, Permit Decryption, and S-63 Verification
- Exercise on Confined Waterway Passage Planning and Safety Contour Setup
- Exercise on Bridge Sensor Dropout Recovery and System Alarm Response
- Exercise on Voyage Route Execution and Continuous Watchkeeping Verification
- Finalization of the ECDIS Passage Planning and Navigation Safety Plan

Case Studies and Exercises

These suggested activities provide practical application of navigational principles and system operations across operational maritime environments:

- Case study: A commercial container carrier navigating a constrained archipelago channel where you calculate safety contours and resolve chart display clutter.
- Case study: An offshore supply vessel operating near drilling installations where you manage radar overlays and identify primary sensor positioning dropouts.
- Exercise: A confined fairway transit under low visibility where you plot parallel index lines and verify automated anti-grounding boundary alarms.
- Exercise: An electronic chart audit scenario where you apply weekly electronic chart updates and resolve licensing permit decryption errors.

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What You Take Back

The ECDIS Passage Planning and Navigation Safety Plan equips you to configure navigation workstations, maintain chart update integrity, and standardize voyage monitoring protocols during your first month back at work. You will use it to prevent navigation incidents, standardize watchkeeping handovers, and ensure audit readiness across bridge teams.

- Standardized navigation safety contour and depth setting calculation worksheet
- Bridge watchkeeping checklist for sensor verification and alarm status handovers
- Route validation and anti-grounding verification protocol for passage planning
- Chart updating and permit license audit log for voyage compliance documentation

Quick Answers FAQ

What background is required before attending the Electronic Chart Display and Information Systems ECDIS Operational Training Course?

You need working experience in marine navigation and bridge watchkeeping. Understanding nautical chart symbols, navigation planning, and basic bridge instrumentation helps you operate digital chart systems effectively.

How does this course differ from general maritime navigation training?

General navigation covers theoretical passage planning, position fixing methods, and collision regulations. This course focuses specifically on configuring digital vector charts, setting electronic safety envelopes, managing automated sensor inputs, and responding to system interface alarms.

How does ECDIS ensure safe vessel clearance in shallow waters?

The system calculates safety contours based on static vessel draft, dynamic squat, and required under-keel clearance. When properly set, it highlights no-go areas and triggers automated alarms whenever the projected course intersects unsafe depths.

What work product do you take back from the Electronic Chart Display and Information Systems ECDIS Operational Training Course?

You complete the ECDIS Passage Planning and Navigation Safety Plan, which includes safety contour calculation tools, route validation procedures, bridge handover checklists, and chart update management logs for immediate bridge use.

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For Your Manager

This course ensures your team member can reliably operate bridge electronic chart displays, calculate critical safety depth contours, and audit automated navigation feeds. They will return with an operational ECDIS Passage Planning and Navigation Safety Plan, used immediately to standardize bridge route checking and strengthen navigation watch safety.