



ECDIS – E-NAVIGATION FOR PILOTS

(CE-012-014-ENG-ECDIS)

This course complies with the American Pilot Association navigation technology committee's guidelines and recommendations.

Objectives:

1. Understand the navigational functions of ECDIS;
2. Use the relevant information, including understanding the potential errors of displayed data and the common errors of interpretation;
3. Learn why ECDIS should not be relied upon as the sole source of navigational information;
4. Get familiar with the features that are common to all ECDIS systems; and
5. Properly incorporate ECDIS into normal piloting practices.

Duration:

14 hours (2 days)

Schedule:

Begins at 08:30

This schedule may be tailored for specific requirements.

Participants:

Maximum six (6) participants.

Prerequisite:

None.

Teaching strategies used:

Theoretical explanations with presentations.

Case studies, demonstration by the Instructor/Pilot and exercises on the Navigation Simulator.

Training activities:

Theory followed by simulation exercises. Simulation exercises can be done in two parts:

1. Initial familiarization on simulators, in which the instructor can walk participants through functionality and features. Each participant will be required to perform these functions at his/her individual station.
2. Full mission simulation allowing the student to integrate the use of ECDIS in piloting during simple exercises.

Certification:

MSRC training certificate.

Course outline

1. Overview of ECDIS carriage requirements

- a. Implementation schedule
- b. Compliance
- c. Terminology (this includes ECS)
- d. ECDIS performance requirements (i.e., what is required vs. what is actually in use)

2. Electronic charts

- a. Types: Raster and Vector
 - i. Detail differences in data acquisition and display
- b. S-57, S-100 and unofficial charts
 - i. Hydrographic sources
- c. Datum issues
 - i. Horizontal
 - 1. WGS-84
 - 2. Other datum and their effect on the system
 - ii. Vertical
- d. S-52 : Symbology and Colors
 - i. Chart colors
 - ii. Symbol overview
 - 1. Traditional
 - 2. Simplified
 - iii. Conditional symbology
 - 1. SCAMIN and temporary or seasonal
- e. Errors and limitations

3. ECDIS Navigational Functions

- a. Modes
 - i. Planning
 - ii. Monitoring
- b. Displays
 - i. Display, Standard, all other information
 - ii. True and relative
 - iii. North up and head up
- c. Chart scale
 - i. Issues related to overscale and SCAMIN
- d. Information query
 - i. Scope of information available
- e. Depth contours
 - i. Safety contours, depth and coloring
- f. Routes
 - i. Display and verification
 - ii. Waypoints

- g. Navigation tools
 - i. Description of required tools (EBL, VRM, track, etc.)
 - ii. "Look ahead" functions
- h. Vessel footprint
- i. Positioning device
 - i. ECDIS tools used for position fix
 - ii. Verification of device in use
- j. Predictors
 - i. Inputs used to device predicted path
- k. Recording

4. Sensor integration

- a. Required vs. available
 - i. GPS
 - ii. Gyro
 - iii. Speed input
 - iv. Radar/ARPA
 - 1. Overlay issues
 - v. AIS
 - vi. Echo sounder

5. Integrated Navigation Systems (INS)

- a. Track Pilot
- b. Predictors

6. Alarms

- a. Overview of alarms

7. Errors

- a. Displayed data
- b. Interpretation
- c. Over-reliance