ECDIS

Electronic Chart Display and Information Systems

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We have come a long way from this.....
…To this
2.1 All ships irrespective of size shall have:

2.1.4 nautical charts and nautical publications to plan and display the ship’s route for the intended voyage and to plot and monitor positions throughout the voyage; an electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this sub paragraph. Ships to which paragraph [2.10] applies shall comply with the carriage requirements for ECDIS detailed therein:
Para 2.10 further identifies a requirement for ships engaged on international voyages to be fitted with an ECDIS system under the following implementation schedule:

**July 2012:**
NEW PASSENGER SHIPS over 500 gross tons
NEW TANKERS over 3,000 gross tons

**July 2013:**
NEW CARGO SHIPS over 10,000 gross tons

**July 2014:**
EXISTING PASSENGER SHIPS over 500 gross tons
NEW CARGO SHIPS 3,000 gross tons
EXISTING TANKERS over 3,000 gross tons

EXISTING CARGO SHIPS

July 2016
EXISTING CARGO SHIPS over 50,000 gross tons

July 2017
EXISTING CARGO SHIPS over 20,000 gross tons

July 2018
EXISTING CARGO SHIPS over 10,000 gross tons
Vector (ENC) and Raster (RNC) Charts
ECDIS Example screenshot – real time position
ECDIS example screenshot – passage planning
ECDIS example screenshot – passage planning
### ECDIS example screenshot – passage planning

#### Plan Overview

<table>
<thead>
<tr>
<th></th>
<th>Distance (nm)</th>
<th>Time (Hrs)</th>
<th>Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>114</td>
<td>21.5</td>
<td>4.0</td>
</tr>
<tr>
<td>2</td>
<td>209</td>
<td>67.8</td>
<td>21.1</td>
</tr>
</tbody>
</table>

**Total tidal performance of plan:** 2.0%
ECDIS example screenshot – tide input
ECDIS example screenshot – AIS overlay
ECDIS example screenshot – radar input
ECDIS example screenshot – detailed view
ECDIS example screenshot – panning and zooming
ECDIS example screenshot – panning and zooming
ECDIS example screenshot – panning and zooming
ECDIS example screenshot - zooming
ECDIS example screenshot - zooming
GROUNDING/STRANDING: ECDIS with ENC should make accidental grounding of competently operated ships a thing of the past:

Active monitoring of ship’s position on passage:

- Comprehensive and easy to interpret passage planning
- No more manual chart corrections
- Automatic route checking
- Monitoring and alarm systems
- Safety contours – depths, hazards
MAIN ADVANTAGES (GOOD NEWS)

Some Operator Feedback:

• You always know where you are or will be (false sense of security?)
• Allows watch officers to focus on traffic not position fixing
• Reduces workload and fatigue
• Makes supplementary information about lights and tides far more readily available
• Switching on the AIS overlay assists situational awareness
MAIN DISADVANTAGES (BAD NEWS)

Some Operator Feedback

• Lack of standardisation – different ships in fleet have different ECDIS units
• Passage planning takes longer
• Screen is too small
• Plotting positions manually is tedious
• Too many useless options or functions – gimmicks
• Lack of situational awareness
• Significant areas such as Great Barrier Reef where the ECDIS/GPS do not give correct positions
RISK ANALYSIS (BAD NEWS)

**THE EQUIPMENT**: may suffer failure (both hardware and software) including power outages, sensor input failure and virus infection.

**THE CHARTS**: permits may expire, charts may not be corrected up to date, ENC charts may not be available requiring the system to be used in RCDS mode without paper chart available.

**THE OPERATION**: may be carried out by poorly trained crew following poor navigational practices and operational procedures such as excessive zooming or operating the chart for navigation with base information only displayed.
“CFL Performer”

Safety contour 30 metres, safety depth 6 metres. Note “red” title and track.
TRAINING

GENERIC ECDIS TRAINING

STCW Code Manila Amendments in force from 1 January 2012

• After 1 January 2012 ECDIS training following an IMO approved course is a requirement. Syllabus will usually require 3 to 5 days training.

• Flag states may, until 1 January 2017, continue to issue, recognise and endorse certificates without ECDIS for seafarers who, as of 1 July 2013, have already begun their seagoing service or are undergoing STCW required training.

• Certificates can be revalidated up to 1 January 2017 under transitional provisions without ECDIS training subject to Flag requirements. However, certain Flag States have issued requirements that if a ship is using ECDIS as a primary means of navigation then officers must have generic and type specific ECDIS training NOW.
TRAINING

TYPE SPECIFIC TRAINING

Type/model specific ECDIS training is a requirement of the ISM Code under Section 6:

“The Company should establish procedures to ensure that new personnel and personnel transferred to new assignments related to safety and protection of the environment are given proper familiarisation with their duties. Instructions which are essential to be provided prior to sailing should be identified, documented and given.”
KEEP A PROPER LOOKOUT BY ALL AVAILABLE MEANS
MONITOR SHIP’S TRACK AND LOOK OUT OF THE WINDOW!