



Much has been written over the past few years on the subject of electronic chart display and information systems (ECDIS) but predominantly from the technical point of view. This article is aimed more at you, the operator, the bridge watchkeeper, the person pressing the buttons, using the equipment at sea and ultimately charged with keeping the vessel safe. However, you may find it easier if read in conjunction with the more technical article in the February issue (101) of *The Yacht Report* entitled "ECDIS Coming of Age".

So let's paint the picture and be honest about it. Paper charts or electronic aid, which do we prefer? Where is the future taking us?

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Most officers of the watch today have been brought up with computers and a keyboard and find these more convenient to use than a pencil and paper. So, on watch on a modern, well-equipped bridge it is likely these crewmembers will prefer to use and believe the image on the computer screen over something Captain Cook worked with.

However, there are also a good number of captains who, like me, have grown up with paper charts, like and trust these and

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feel more comfortable with their crew using them. While these captains are not wrong for preferring these traditional methods, technology is advancing and we need to move forward with the times and embrace the imminent regulatory changes. This requires suitable training and a desire to accept the inevitable. Once an electronic navigation system has been fitted to your yacht, it is key to know whether it is an electronic navigation system (ENS) aid to navigation or a fully-accredited ECDIS, and it is important to know how to use whichever type is installed.

The positives behind having an ECDIS [and most ENSs also Ed.] include:

- Simplistic and expeditious voyage planning.
- Automated software updating of charts.
- Accurate real-time voyage monitoring.
- Constant monitoring of the depth and safety contours.
- Readily available information when approaching ports or a busy shipping area.

However, these require a system to be set up correctly and failure to do so can easily result in:

- Excessive information on the screen that will distract the operator.
- Becoming lost in the submenus.
- Unease at the small size of the screen compared to a chart.
- Misinterpretation of new chart symbols.
- Most worryingly, complacency due to the automatic plotting of the vessel's position.

The majority of maritime colleges offer ECDIS training in accordance with the International Maritime Organisation (IMO) course code 1.27, which should last 40 hours over a five-day period. However, students who attend these courses tend to only learn to operate the ECDIS system that particular college has installed, which may not be the same as the equipment onboard the crewmember's vessel. This generic training is not ideal but should include as a minimum:

- The function of ECDIS.
- Display interpretation.

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- Recognising and dealing with malfunctions.
- Understanding the system limitations.
- Legal implications of its use.

On successful completion the candidate returns to his or her yacht, certificate clutched in hand, permitting the vessel to take another step towards navigating electronically. Manufacturers often offer courses as part of the package sold to the yacht and, even if not mandatory, these are recommended.

While not all flag states presently require a risk assessment as part of the formal agreement to navigate primarily by electronic means, most do and any captain who does not wish to fall foul of a port inspection would be wise to have this simple procedure completed in accordance with MGN 285.

A system of updating the ECDIS charts must be in place, however being software based and available automatically over VSat it is much less onerous than paper corrections. It is important to note that most ECDISs lack antivirus software, so updates must be virus checked and additionally the navigation system should be regularly maintained eg defragmented and security scanned like any office machine.

The holding of paper charts is still necessary, although the numbers required will usually be reduced to a simple "get-me-home" folio of small-scale charts with one or two of larger scale covering the likely ports required to sail into in the event of crucial repairs. These must, of course, be updated as before. Information overload is a real risk with ECDIS' ability to display data from almost all current bridge equipment and crew lacking experience or training may not realise the ease with which you can swamp a screen with information. Indeed the Marine Accident Information Board (MAIB) has recently published several reports on ECDIS-assisted groundings – much like the radar-assisted collisions of yore.

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Although ECDIS is a phenomenal aid to navigation, if not set up correctly it can also show too little data due to the scale minimum (SCAMIN) value. SCAMIN can cause key details such as depth soundings or contour lines to be omitted from the display. This is one reason inexperienced users may become frustrated and revert to the paper charts' comfort zone.

However, if all else fails, remember to keep your master station on a 1:1 scale at standard settings and you should survive. To finalise, some key pointers to remember with any navigation system are:

- Look out of the bridge windows! Your Mark 1 eyeball is more often than not the most effective means of monitoring the situation around the vessel. Do not be drawn into ECDIS or completely rely on the electronic aids.
- Do not assume because it is an electronic chart that the information is based on a new survey. Like paper charts, surveys – especially of rarely travelled areas – may in fact go back to Cook and Drake.
- Allowing your ECDIS to drive the autopilot unsupervised can quickly lead to dangerous situations – refer to the COLREGs rules set out by the IMO.
- Do not ignore alarms as they are there for a reason.
- Programme depth alarms to the vessel's exact particulars.
- The safety depth is the point at which your hull will go "crunch". You programme this in.
- The safety contour is the next contour deeper than the safety depth; it is the minimum safe depth you have identified. If there is no integration of tidal prediction software to adjust local for tide, you will need to adjust your safety depth to take account of tidal ranges when entering or leaving port.
- Scan the route with the system but also look for errors. For example, the computer will not sound the alarm if you are going down a traffic separation scheme the wrong way.
- While the route to approved ECDIS use is a simple one, it requires proper training – ideally on the specific type of ECDIS onboard, as well as watchkeeper supervision to remain navigationally safe. At a minimum, simply pressing buttons and reading the operator's manual (although not when you are on watch of course) is a start to learning how your particular system works.

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