



OUT WITH THE NEW, IN WITH THE OLD

ECDIS AND PAPER CHARTS

BY STEVE MONK

IN THIS MODERN DAY OF GLOBAL POSITIONING SYSTEMS (GPS), computers and electronic charts, the younger generation are probably wondering why the dinosaurs on the bridge are still getting all wrapped up in paper charts and not casting doubt to the four winds in order to embrace the ability to navigate on an Electronic Chart Display and Information System (ECDIS).

And indeed, this old dinosaur who grew up on paper, then migrated to ECDIS and embraced it wholeheartedly would agree. But (there's always a but) there's a bit more to consider when it comes to electronic navigation and particularly with respect to the Superyacht Industry. As a quick reminder in respect to the regulations, to be able to ditch the paper charts over the side and use the ECDIS as the primary means of navigation it's necessary to meet a few requirements namely:

- The ECDIS, log, gyro and positioning system (likely GPS) need to be Class approved.
- There needs to be a maintenance service in place for the hard and software such that everything gets the latest upgrades and patches.
- The electronic charts in use must be approved by the International Hydrographic Office and up-to-date for the forthcoming passage.
- Those crew operating the ECDIS must have completed an approved

Generic ECDIS course in accordance with IMO Model course 1.27 as well as some form of 'familiarisation training' (which does **not** need to be at an approved training centre ashore).

- A risk assessment needs to have been done, Masters Standing orders should encompass aspects relevant to operating with the ECDIS and the management SMS should similarly give guidance on ECDIS operation.

Crack those basics and off you go. Everything's wonderful and you begin to think what could possibly go wrong? Unfortunately the let-down is normally with the charts. As mentioned above, the charts must be formally approved which in loose layman's term means Admiralty Vector Chart Service (AVCS). OK, so they're ready available – where's the problem?

According to the United Kingdom Hydrographic Office (UKHO) the world is mapped for Electronic Navigation Charts (ENC's) to a commercial standard. The key word there is 'commercial'. If you own a shipping company trading along the main shipping routes and to the major world ports you've nothing to worry about as the ENC's you require will be available at a suitable scale safe for navigation to the level of detail you require, however Superyachts have a tendency not to navigate along these routes or want to tie up in the commercial ports. Owners and guests probably don't appreciate strolling among

the containers and grain stores to reach their favourite restaurant. They want to go to the exclusive bays, beaches, marinas and remote areas of the world where they can feel they have the planet to themselves but here-in lies the snag. Don't believe me? Flash up your ECDIS and turn on the CATZOC's (the category zones of confidence) to see what level of data you have in your favourite remote anchorages in respect to the survey. There's a good chance you'll find a 'U' or if you're lucky two stars indicating the confidence in the accuracy of the data is poor at best. So with that in mind according to the regulations it becomes necessary to revert to the Raster charts (likely Admiralty Raster Chart Service (ARCS) which have to be backed up by paper charts. Hang on, we wanted to ditch the paper and now we need it back? Take a look at the area in more detail on the ECDIS and you'll probably find the spot sounds are well spread out or if you interrogate further, you'll find they're from a survey conducted several hundred years ago by drunken sailors with dodgy sextants and a lead line working off days old DR's or some inaccurate bearing of the shoreline and no idea of the datum. Perhaps not always a nightmare out in deep open water but when you start creeping inshore, do you still get that warm comfy feeling?

'Never mind', you say I'll use those other electronic charts we purchased – the C-Map Pro+ or the Transas TX-97's or the Nobeltec or the Navionics or the iSailor app. Crack on, just remember none of them are 'approved' by the IHO and subsequently should you have an accident and park yourself on the ground unexpectedly, you'll find yourself standing in front of a judge trying to mitigate why you grounded while the insurance company rub their hands listening to the mitigation waiver and subsequent payout value diminishing as your career grinds to a halt faster than the yacht did.

Not good is it. Some of you probably thought all those other chart options were acceptable and if displayed on your charting system you were operating ECDIS, but alas no. Put those charts on as the primary source of data and you're simply on an Electronic Chart Service (ECS) which isn't approved.

So let's get this right. I want to navigate on electronic charts in remote areas of the planet where the ENC data quality is poor (which includes some Greek islands, most of the Caribbean as well as much of the Pacific and Indian Ocean) and some bloke's now telling me all the good data I have on the chart systems listed above isn't acceptable?

Yup.

So surely there's a way around this? I mean, yachts are being fitted with ECDIS (not that those under 3000GT are mandated to carry it) and want to embrace technology as well as reduce the paper chart carriage and subsequent update processes. You're right and indeed why shouldn't they? If you follow the rules to the letter (and I'm not suggesting you shouldn't), as you can see above, if the official cell data isn't sufficient to be considered safe for navigation it's time to start a revolution, contact your navigation support service provider and complain so they can gather the evidence and take it back to the hydrographic offices (most of which are government organisations (thus skint) and tell them you want the unofficial data to be taken into account so it can be incorporated into the official charts making them approved for navigation. Some companies (including ours) are already engaged with the UKHO to find a way in which satellite derived bathymetry can be married up against 'ground truthed data', i.e. that from vessels which have passed over the ground in those locations, to crunch the numbers and bring confidence in the data to a level acceptable by the IHO. Then, and only then,

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is the chart data on your C-Map Pro+, TX-97's and so on going to be considered brought into the official ENC's making it legally safe to navigate on as the primary means of navigation.

Frustrated? You should be. It's crazy to think there's data gathered by non-official organisations by electronic means which is considerably more accurate than that drunken 200 year old sailor with his sextant yet it's the latter which the court of law will take into account as the primary means of navigation should something go wrong with your passage.

Of course, trying to sit and explain to the boss or guests that you've got this great ECDIS on the bridge but are limited where you can navigate on it unless you get out the good 'ole paper with its ancient survey, isn't necessarily something that'll be met with an 'OK Captain, take us somewhere more accurate'. The lovely attraction of the old is that they're the less likely visited and thus quieter (charts, not people). Your training, skills and professionalism now need to take 'all' data sources into account and risk assess the situation. Meet the formal requirements still but consider what can be done to help you appease the guests. Official charts, paper back-up, unofficial charts, the tender out in front with a lead line or WAASP system feeding depth data back to mother, a drone up in front of you looking at water discolouration or follow a deeper draught vessel are just some of the ways you might be able to sneak into the secluded anchorage but just make sure the mitigation you've gathered is substantiated.

In summary, the opportunity to fully relieve yourself of paper navigation charts in the yacht industry is limited to your area of operations and if those are lacking sufficient ENC data to make it safe to navigate in, sorry but you need the paper and subsequent updating processes. However, if like us you feel something needs to be done about this then feel free to get in touch and voice your concern to our argument to the HO's who in this modern day and age despite their HQ being in Monaco, seem to be moving painfully slowly in understanding why

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Superyachts exist, where they go and what they need to get there safely, accurately and preferably without old ancient paper chart data. >||

Steve Monk is a Royal Navy Specialist Navigator with nearly 30 years maritime experience navigating vessels of all sizes. He now manages the navigation support company Da Gama Maritime and as one of the World's first to achieve Chartered Master Mariner status is involved in training Superyacht crew in navigation procedures while also pushing Hydrographic organisations to improve the official chart data available to the industry for safety of navigation.

Contact: steve@dgmaritime.com

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