

TIME FOR A NEW LOOK?

THE HUMBLE PLOTTER IS LONG GONE. **DUNCAN KENT** OFFERS AN INSIGHT INTO THE LATEST CROP OF MULTIFUNCTION DISPLAYS

A question that frequently pops up on the sailing forums is, "Can I navigate using my phone, tablet or laptop, or should I spend much more on a dedicated navigation instrument such as one of the latest MFDs?" Well, the answer is really down to personal preference, although most meticulous navigators would more likely put safety foremost and choose the latter.

At home and at work people have become used to operating touch-screen devices, so it might seem natural to do the same with your navigation instruments. Touch-screen operation certainly speeds things up when you are changing the configuration or setting up waypoints and routes on a chart plotter/MFD, but only when you're at rest. Where they're not so good is when you're trying to make changes while being thrown about at sea. Some touch-screens can also behave rather oddly when they get wet.

Most of the mainstream marine manufacturers have a 'hybrid' range of MFDs with both manual and touch-screen controls. These are an ideal compromise and make them much easier to use under way.

WHAT FEATURES DO YOU REALLY NEED?

There's an obvious difference in navigation requirements between a daysail and an ocean passage. For the former you may get away with a fairly basic smartphone or tablet nav app, provided you have a paper chart in case the batteries go flat (which they will!). For the latter a few more features are certainly desirable, if not almost mandatory. But is it really worth spending £3,000 or more on an all-singing, networked MFD, when all you really want to do is get safely from A to B?

Before deciding I urge you to try one of the latest MFDs if you possibly can, and preferably one that is connected to a NMEA2000 network on a boat, rather than on a boat show stand. The myriad of features on offer



might sound tempting, but will you bother to use them? Most don't. In fact most navigators use only 20-30 per cent of the options, because often that's all that are needed.

Take the 'automatic route planning' function now being offered by most manufacturers, for instance. While it's designed to save you passage planning time by calculating a safe route for you, most can only use your draught and mast height data. Few factor tidal data into the equation, or hazards such as overfalls or local port regulations such as small-craft channels. Personally I would have to double-check it anyway before setting off, which rather defeats the object.

Many of the sonar options are also way beyond the needs of a sailor, too. Unless you want to analyse every rock on the seabed, I would stick with the forward-looking sounder option.

SHOULD I NETWORK?

The latest networking protocol is NMEA2000 (aka N2K), which is supposedly a 'plug-and-play' system, but isn't always. An N2K-compatible device connects to the network backbone using a simple, pre-terminated 'drop' lead and T-connector. Once coupled, every other device should immediately recognise that a new instrument has been added and start sharing data.

Older systems include NMEA-0183 and Raymarine's SeaTalk, which can be converted to N2K using a converter. The latest version of SeaTalk, SeaTalkng is Raymarine's version of N2K, only it uses a different cable type making it incompatible with an N2K network with a converter cable.

Although UK company, Actisense makes an excellent range of signal converters and multiplexers, not all older instruments will be able to 'talk' to an N2K network – particularly autopilots, so beware. If you're upgrading your chartplotter to a multifunction display there's a good chance you'll have to upgrade your autopilot too! If a

salesman says it'll be okay, get them to put it in writing and guarantee they'll rectify the situation if it doesn't work – at their expense.

INTERNET LINKED?

All the mainstream displays now feature wifi, offering the ability for you to monitor and control the system via a remote device such as a smartphone or tablet. In addition, a number of them also have the ability to connect directly to the internet in order to download the latest software updates – providing you're in wifi range of a router or connected wifi device, of course.



NOT ALL OLDER INSTRUMENTS WILL BE ABLE TO 'TALK' TO AN N2K NETWORK, SO BEWARE

FACING PAGE
Weigh up your options carefully before taking the plunge and investing thousands in an all-singing, all-dancing MFD

FURUNO

Furuno has a reputation for top quality marine instrumentation. Although previously leaning heavily towards commercial shipping, recently it has introduced a range of products aimed more towards the leisure marine market.

The smallest MFD from Furuno is its NavNet TZTouch2 12in touch-screen-only model. As with large domestic TV sets, many say once you've used a 12in display you won't want to go back to anything smaller – particularly if you plan to overlay AIS and radar onto it.

The TZT2 has a sleek, edge-to-edge, bonded glass screen that is coated so that it can be viewed through polarized sunglasses. It is, however, a little

reflective. Being a multi-touch screen device (its only button is the power key) makes swiping and pinching quick and easy. Data boxes and menus slide in from the sides and bottom of the screen for instant access and control of numerous, user-selectable features.

Initial set-up is straightforward and access to all the settings is clear through its logical menu-driven system. Pages and windows can be user-configured (single or split) to contain your most frequently used data. On a chart/chart or chart/radar split, windows can be synchronised or zoomed independently.

To create a route you simply touch the display at the start point, select New Route from the pop-up menu and then tap the chart where you want waypoints.

To move a waypoint you just press, hold and drag it to a new position. For a quick 'go-to', touch a point, select 'go-to' then slide over the data window for navigation details.

Lists show stored and active routes with WPT and BRG, distance and ETA at current speed, while simultaneously showing the route on an



inset chart window. Routes can also be marked by a chart icon at their end point, which, when touched, displays the entire route. Touching anywhere on the route line opens a menu, from which you can activate navigation and selecting a tide arrow along the way gives you local tide height and flow data.

RAYMARINE

Raymarine offers its A-series touch-screen MFD range with 5.7, 7.0, 9.0 and 12.1in displays, and its eS-series 7.0, 9.0 and 12.1in HybridTouch MFDs. Both models use Raymarine's own Lighthouse II user interface (UI), which is specifically designed to facilitate feature access and configuration.

THE RAYCONTROL APPLICATION ALLOWS MONITORING VIA A SMART DEVICE

The A9, A12 and all the eS devices have an integral 10Hz/72-channel GPS/GLONASS receiver, plus an external antenna option. All displays are optically-bonded and particularly easy to view in sunlight. The latest 12.1in displays are super-sharp WVGA at 1280 x 800pi resolution, while all 7in and 9in models are 800 x 480pi. All come with the basic Lighthouse background, but will also accept the very latest Navionics or C-Map cartography.

They also offer wireless internet connection for updating the software and charts, and to download waypoints from some apps. They can all also be used with the RayControl app that allows the device to be monitored and

ABOVE
HybridTouch by Raymarine

BELOW
Garmin's own BlueCharts are extremely clear and detailed

controlled via a smart device. There are several methods of setting the initial configuration, but it's great to zip up and down menus using the rotary knob on the eS models. The system parameters are set on the Home page, while item-specific features are adjusted via the drop-down menu of each page 'type' (radar, chart etc). Some of the menus are too short, though, so you need to remember to swipe up for additional functions.

When creating a route and after placing the first waypoint you can pan the chart with the pointer/cursor centralised, leaving a clear track-line behind to indicate the route. Moving an existing waypoint is simple,

but requires numerous clicks, and touching anywhere along a route line allows you to hide, edit or erase it.

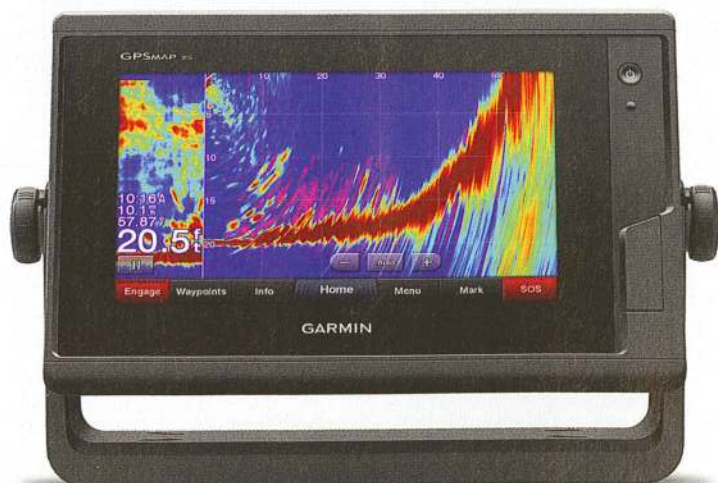
There are two data bars at the top of the screen (one permanent and one pull-down) that can be user-configured, although the figures are small and not easy to read from a distance. There are also two 'single item' windows available at the bottom. The Data page offers a user-selectable array of nav data in big, clearly visible characters. Swiping the display scrolls through numerous analogue and digital info pages. Put into a dual-split screen, this feature is very useful.

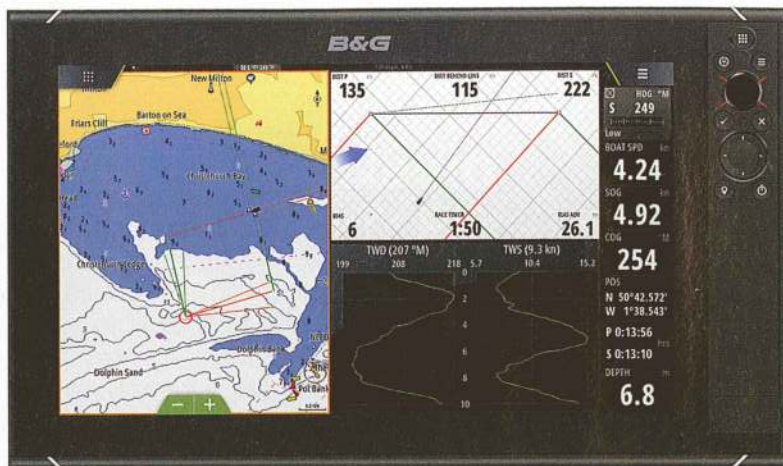
GARMIN

Garmin offers the 820 and 1020 button-control chart plotters or the 7000 and 8000 touch-screen MFD ranges. The 820, 1020 and 7000-series are intended for 25-70ft (7.6m-21.3m) cruising yachts, while the 8000-series is primarily for larger vessels.

The 7000 models come with 8in, 10in, 12in or 16in sunlight-viewable VGA resolution displays that are sharp, but slightly susceptible to reflection, and all contain an internal 10Hz GPS/GLONASS receiver. None will accept Navionics or C-Map charts, but Garmin's own BlueCharts are extremely clear and detailed.

There are two set-up levels, system and page, both of which are easy to locate and configure. The first sets up units, attached devices, wifi, vessel icons etc, whereas the page menu offers function adjustments (chart, radar, sonar and so on). Creating waypoints and





AUTO GUIDANCE USES YOUR DRAUGHT AND MAST HEIGHT FOR ROUTING

routes is not quite so easy though. Touching the screen marks the point and brings up a navigation menu that enables the creation of a new waypoint, but not a route.

The latter requires a lengthy procedure involving five key pushes, and to edit it later entails a further eight! Alternatively, you can use Auto Guidance, which operates similarly to the Autorouting on the Navionics, and Easyrouting on the C-Map charts, using your draught and mast height for guidance.

A menu bar along the bottom offers instant access to the home and menu pages, along with other page-specific functions. In Charts a steering compass tape can be selected, top or bottom, or comprehensive data bars for the top and/or side, and/or corners of the display. To configure them you simply chose overlays/data bars, touch the required data window and then select the data you want to see from the list.

When navigating, the chosen data bars appear and the course is highlighted on the chart. If you drift off course a purple line indicates the correction to be made. The Layline feature indicates the point at which to tack in order to make your next waypoint, but requires a networked wind instrument and chart tidal stream data. The COG heading lines, lay lines and wind rose views are also very helpful.

All 7000-series MFDs offer the Garmin Helm app for wireless remote control.

B&G

In the B&G brand you can choose between the Zeus hybrid range of MFDs and the touch-screen Vulcan. The Zeus2 has a bonded, edge-to-edge glass screen with excellent clarity and resolution and large, clear text. The new Zeus3 (spring 2017) will have a SolarMAX HD all-weather display, said to be even easier to read in sunlight and better in the wet. Zeus MFDs have both NMEA-0183 and 2000 connectivity and are compatible with all B&G-branded radars, AIS transceivers and autopilots.

All Vulcan and Zeus MFDs feature a built-in 10Hz GPS receiver, although you need an external antenna to use SailSteer. They also have Wi-Fi and Bluetooth for directly downloading weather data and updates, and for connecting to a remote tablet or phone running Navico's free Go-Free app.

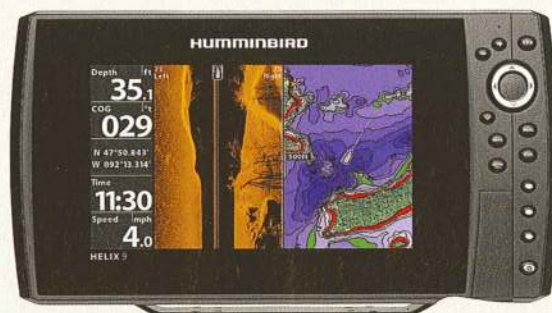
The Zeus has a home/tools page for system settings and separate menus for each page. You can choose to select one or two customisable data bars that can be turned on/off instantly using the power key menu. With access to boat speed, wind data and tidal current data, both models provide the 'SailSteer' feature to plot lay lines on the chart, showing optimum tacking angles and historic tack data. The SailSteer compass rose shows wind angles and tidal current rate/direction, and rapidly 'learns' your yacht's optimum angles of sail. It can be overlaid on the chart (where it can obscure some chart detail) or kept in a separate window.

Vertically alongside you can select a user-configurable window showing

ABOVE
B&G offers a hybrid range of MFDs (left), and the touch-screen Vulcan (right)

network instrument data, as well as location, SOG, cross-track error, heading, WPT bearing and TTW. Or, you can set the entire screen up as a giant instrument repeater and toggle between the two. Windows are easily customised by dragging and dropping. Touching the screen opens the new waypoint/route and go-to menu. To create a route you simply touch the screen where you want a waypoint then save it.

Boasting many of the features of the Zeus, the waterproof 5, 7 and 9in Vulcan offers a large waypoint and route memory, integral high-speed GPS receiver and autopilot integration. It accepts Navionics or C-Map cartography, but has only N2K networking facilities and only the V9 is radar-compatible.



Humminbird plotters

Besides the big four MFD brands stands Humminbird, a subsidiary of US giant Johnson Outdoors, which produces a range of reasonably priced MFDs aimed at the cruising market. The accent is on fishfinding, but the Helix range comes in sizes from 7in to 12in, with support for radar, GPS and AIS — as well as the full range of down, side and forward imaging. Without the extra sonar transducers, this unit sells for between £420 (7in) and £2,100 (12in).