

ROUTES CAN MESS IT UP

FROM THIS SEASON, CHART SUPPLIERS NAVIONICS, C-MAP AND BLUECHART, OFFER AUTOMATIC ROUTE PLANNING. WE HAVE TESTED ALL. THE DIFFERENCES IN BOTH USER INTERFACE AND QUALITY OF THE ROUTES VARIES GREATLY.



Auto guidance is a well-known feature of car navigators and has been around for many years. Garmin, who is the leader in car navigation systems, was first to offer the feature called Auto Guidance in their own BlueChart. In 2016, Navionics launched Dock-to-Dock Autorouting in its charts, and in spring 2017, C-Map also developed its Easy Routing system. All of the three leading providers of electronic charts for the leisure market now offer a feature that automatically generates a route from one point to another. The feature is clearly attractive to users who do not have much navigation experience, and it is undoubtedly easy to ask the chartplotter to create a route between two points, such as Risør and Langesund. All of the charts are developed by

international companies for a significantly larger market than the Nordic countries. In combination with the fact that we have some unique waters in the Nordic region that offer absolutely unique navigation challenges, it is interesting to see how the three systems manage the challenge in the archipelago. We took three different chartplotters to sea to test the features in the three maps.

DANGEROUSLY TEMPTING

It is obviously tempting to follow a route that the plotter defines automatically. One should, however, be aware that the function of the three chart manufacturers is highly different, and they can make up routes that no one with a hint of navigation





SCREEN EXEMPLE: Here, the C-Map puts the route proposal on the wrong side of a navaid, over shallow water and then over land.



REFUSE: BlueChart refuses consistently to draw a route through Blindleia but chooses rather to go on the outside.

skills would follow. The advantage of autorouting features is that they quickly and easily find a route between two points, mainly based on predefined factors such as draft and the boat's maximum height. Wind speed and direction, current, and night or day are factors that the navigator himself must include in assessing how safe or appropriate the route is.

To keep a logbook is the seaman's expression for keeping track of where the vessel is at all times, and it is one of the most basic things required by a boat driver: knowing where you are and where to go. The plotter shows with great accuracy wherever we are, but as this test shows, there is reason to be critical of its recommended routes to the place we want to go.

THREE CHARTS FOR TWO SYSTEMS

Two of the three products we have tested can be used on a number of plotters. Both C-Map and Navionics maps can be read virtually by all plotters on the market, including Simrad and Raymarine. However, we recommend checking the compatibility of the chart or chartplotter on the manufacturer's website before purchasing a chart with a routing feature. It is also an advantage that the chartplotter is up to date with the latest available software before using the chart. Garmin has its own charting system called BlueChart and is only used on Garmin plotters. The autorouting feature is not a specific chart or plotter

function, but requires a combination of charts and software and assumes that the chartplotter is of recent date. The actual calculation of the route takes place in the chartplotter, based on data from the chart. How the route is presented in the plotter varies from plotter brand to plotter brand.

SOME CRITERIA

In this test, we have mainly focused on the quality and safety of the routes suggested and how easy it is to adjust (edit) the routes. The other menu functionality, which is plotter-dependent, we have had very little focus on. However, we want to emphasize that the Garmin user interface is clearly the easiest to use. However, the routes suggested by the Garmin plotter must be edited, without exception, if they should be followed. On Raymarine and Navico (Lowrance, Simrad and B&G) products, routes are created by setting a starting point A and an end point B. Then the plotter calculates the route between the points. How many steps you must do to build a route depends on the menu system of the plotter. Raymarine and Garmin have the easiest functionality. The advantage of the Raymarine plotter is that it is easier to enter multiple waypoints to control the suggested route than in the Simrad plotter. In addition, in our test Garmin made the fastest route calculation, but this will probably vary from plotter to plotter, depending on processor capacity.

TEST 1 FOLLOW DIRECTION OF FAIRWAY AND NAV AIDS

GARMIN BLUECHART AUTOGUIDANCE

BlueChart is quite consistent at one point, which is that it does not take into account nav aids or follow the direction of fairway. It obviously sets the route without consideration of where sailable water is.

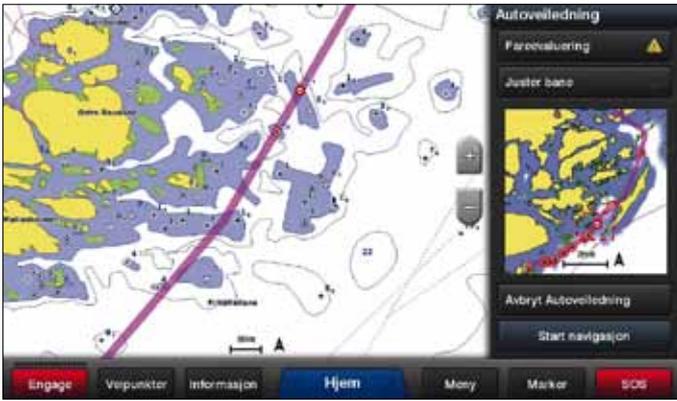
C-MAP EASY ROUTING

Although the C-Map creates a far more reliable route than BlueChart, it does not seem to pay attention to nav aids or the direction of fairway. C-Map is closer to Navionics in its route suggestions than BlueChart, but C-Map cuts some corners here and there, including going on the wrong side of the nav aids.

NAVIONICS DOCK-TO-DOCK

Navionics relies almost consistently on the nav aids and fairway direction and can actually be used for route planning. In the few cases we saw that it deviated from fairway, it still created a route in sailable waters with a safe distance to land and shallow water.

Navionics is the only one that takes into account navigation marks and fairways. The other two just seem to relate to depth and height.



OVER ROCKS: Here, BlueChart draws a route over a rock with 0.7 m depth, outside of sailable waters.



UNFAVORABLE: We would not choose this route even on a nice sunny day. If someone blindly follows this route in the darkness with the southwest strong breeze, it would not look good

TEST 2 ROUTE QUALITY (SAFETY)

GARMIN BLUECHART AUTOGUIDANCE

BlueChart fails all the way through. Not only are the routes it proposes totally illogical in relation to the sights and the direction of fairway, but it also places the routes on the wrong side of nav aids, close to the shallows and seems to force the route over areas that are shallower than the predefined depth settings. If we had followed the BlueChart route suggestions without editing, it would bring both boat and crew up in dangerous situations.

C-MAP EASY ROUTING

Although C-Map also proposes some more creative than logical route choices, it recommends fewer routes that we consider to be dangerous than BlueChart. C-Map also proposes routes that we consider to be potentially dangerous, close to shallows and land, but also on the wrong side of the nav aids.

NAVIONICS DOCK-TO-DOCK

Since Navionics basically builds routes according to fairways directions and nav aids, with a few exceptions, with a safe distance to land and shallows, we could not find any points in the suggested routes that we considered potentially dangerous.

TEST 3 ROUTE PROPOSAL INSHORE

GARMIN BLUECHART AUTOGUIDANCE

We tried to force BlueChart both through Blindleia, through Kreppa between Kragerø and Langesund, and inside of Jomfruland by adding an additional waypoint. In all cases, it went offshore, including a route close to south of Jomfruland, almost up on the beach. If you want to add a route inshore with BlueChart, it must be edited manually.

C-MAP EASY ROUTING

C-Map defines routes that, in quality, are between Navionics and BlueChart. But C-Map does not calculate routes that follow fairway - neither inshore nor offshore. Although the procedure is a bit of a hassle, it is possible to add a third waypoint on the route to force it through defined areas. Navionics does not pay attention to bridges; it only gives warning. Both C-Map and BlueChart take into consideration bridges and put the route outside if the bridge is too low.

NAVIONICS DOCK-TO-DOCK

On this test, like the other tests, Navionics is supremely the best. It follows fairway, uses the nav aids and suggests routes both through Kreppa (between Kragerø and Langesund), through Blindleia and inside of Jomfruland.

TEST RESULTS

Prior to the test, the three plotters were configured with two meter depth and five meter height settings.

We tested the C-Map chart both in Raymarine and Simrad Plotters. We defined several different routes along the coast of southern Norway and around Koster in Sweden to judge the result.

OUTSIDE FAIRWAY: C-Map puts the route (red) on the wrong side of the navaid and over an area with dangerous shallows. The green line shows how Navionics follows the fairway.



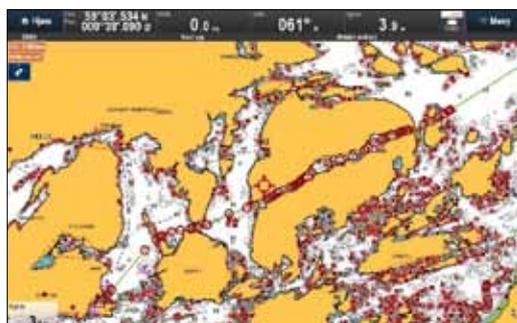
WRONG SIDE: Here is an example where BlueChart chooses to go on the opposite side of two navaid's without taking into account direction of fairway.



ILLOGICAL: Here, C-Map places the route on the wrong side of the red navaid, and unnecessarily close to the shallows. The green line shows Navionics' route suggestion.



SUPERB: Navionics Dock-to-Dock was superior to the other two in this test. It was the only one suggesting routes through narrow waters, like here through Kreppa between Kragerø and Langesund.



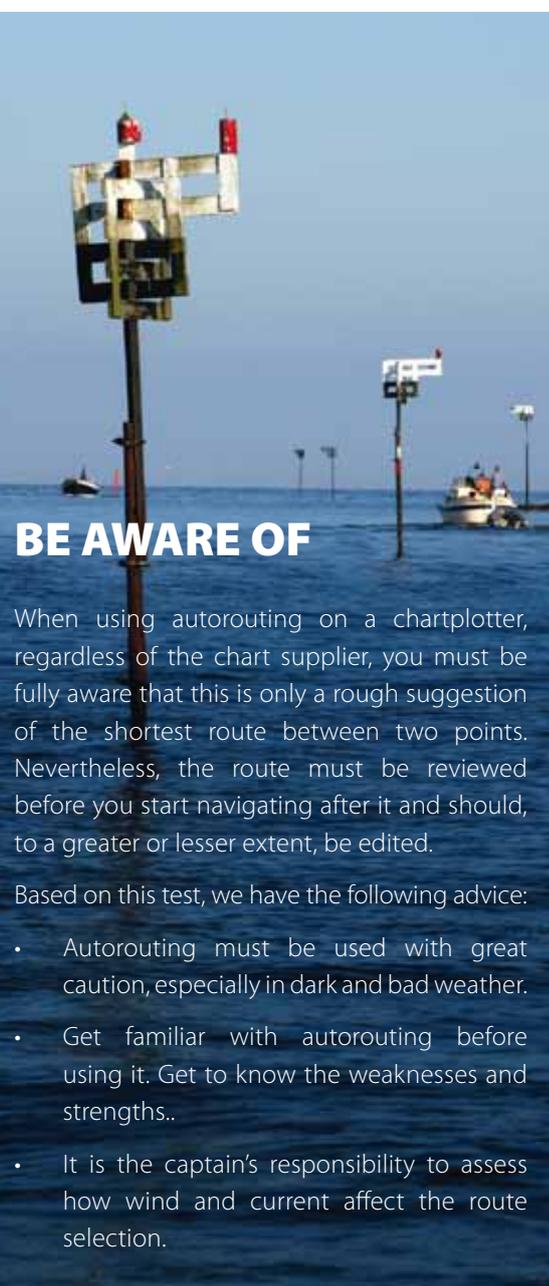
COMMENTS FROM GARMIN NORDIC NORWAY AS

BlueChart puts the route close to and above shallows:

By reviewing an Auto Guidance route, you get an overview of potential hazards and then it is easy to add a waypoint that takes you outside these dangers.

About presets set to two meter depth and five meter height explanation:

On Garmin, we have a third setting that you can access by going to Settings - Navigation - Auto guidance called Distance to shoreline. By default, this is set to "Normal," and we see that Auto Guidance has trouble taking you through narrow waters. If this is set to "Closest," we see that it is doing this task much better.



BE AWARE OF

When using autorouting on a chartplotter, regardless of the chart supplier, you must be fully aware that this is only a rough suggestion of the shortest route between two points. Nevertheless, the route must be reviewed before you start navigating after it and should, to a greater or lesser extent, be edited.

Based on this test, we have the following advice:

- Autorouting must be used with great caution, especially in dark and bad weather.
- Get familiar with autorouting before using it. Get to know the weaknesses and strengths..
- It is the captain's responsibility to assess how wind and current affect the route selection.

CONCLUSION

Whatever chart and route guidance supplier, the feature must be used with caution.

Among the three tested products, Navionics Dock-to-Dock distinguishes itself with the sovereignly most functional and reliable feature.

BlueChart is at the other end of the scale in terms of reliability, but the user interface and functionality of BlueChart is superior. Nevertheless, this applies to the almost self-explaining menu for route editing.

C-Map ends somewhere in the middle of the other two, presenting routes that apparently do not follow any logic.