On Deck

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Edited by Charles Mason

A chartplotter anchor alarm works well but a waypoint can be even better

Set a Safety Perimeter

Get your chartplotter working around the clock | BY JEFF STANDER

All chartplotters have an anchor alarm that can be set to sound when the boat moves outside a specific radius around a GPS position. The concept is great, but in the real world it is often not all that helpful. The reason is that the anchor alarm's radius is normally set on the boat's position rather than the position of the anchor. If the alarm is enabled when the hook touches bottom it should work as intended. But most of the time there is too much going on while anchoring to worry about pushing buttons on the chartplotter. What usually happens is that the alarm gets set after everything quiets down and the boat stops moving. At this point the skipper or navigator tries to select an alarm perimeter large enough that it won't create false alarms, but small enough to serve its purpose. In most cases a 130-foot radius is enough to avoid triggering a false alarm, but may not be enough to keep you from running aground or bumping into other boats in a tight anchorage.

NEW APPROACH

I've found it is more effective to use my chartplotter to establish what I call a safety perimeter. Basically, this is an exclusion zone centered on a waypoint. If the boat's GPS position moves into that zone, an alarm is triggered.

To establish a safety perimeter I use my chartplotter's waypoint proximity alarm function. If you place your safety-perimeter waypoint far enough away from the boat to create a safety zone directly behind your swinging area, the proximity alarm will sound if the boat crosses that perimeter, which is shown as a line on your screen (Fig 1).

After anchoring, I leave the tracking function enabled on my chartplotter and then zoom in to the screen's closest level. The boat then "paints" a path on the screen as it swings around its anchor (Fig 2). After a period of time, as the boat swings to conform to the varying wind and currents and as its anchor chain stretches out, its natural maximum swinging radius is described on the screen. Then I can set up a safety perimeter just beyond the safe ground of the swinging radius.

To do this I first determine the location of the waypoint and then enable the proximity alarm and set its radius; your chartplotter manual will tell you how to do this. If your boat crosses the boundary the alarm will go off. For example, if I establish a waypoint 660 feet downwind

FIG 1

perimeter alarm boundary

shoal

anchor alarm overlaps shoal
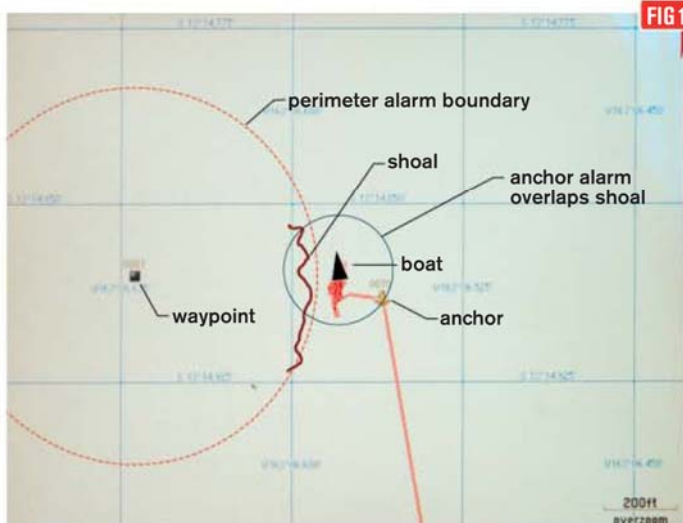
boat

waypoint

anchor

This image shows the boat's anchor about 110ft east of the boat, a waypoint set about 550ft west of the boat and a perimeter alarm boundary around the waypoint (dashed red line) set at 500ft. The dashed blue line demonstrates how a standard anchor drag alarm can overlap the shoal area while the perimeter alarm makes a precise "do not cross" boundary astern. The dashed blue anchor alarm circle and the mark for the shoal have been drawn in for clarity; the red dashed boundary is part of the chartplotter display

FIG 2

perimeter alarm boundary

boat

shoal

anchor
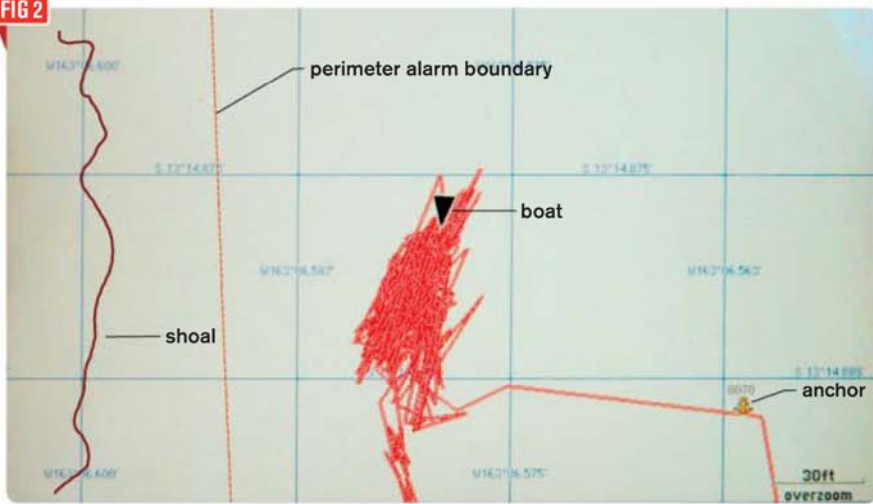
30ft
overzoom

Zooming the chartplotter scale down to 30ft shows the boat's location over several days as it swings at anchor. The red track line shows that the anchor is holding the boat at about 110ft from the anchor; the roughly 30ft width of red anchoring zone is created because the anchor rode stretches and shifts with the wind and current. But with the red dashed perimeter line set just 50ft astern of the swing zone, the alarm will sound if the anchor should drag more than this distance. Such accuracy would be impossible with a conventional anchor alarm

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and set the proximity alarm at 605 feet, I am creating a boundary just 50 feet behind the boat. If the anchor drags and the boat crosses the line, the alarm will go off. This gives me absolute control over the situation and, more importantly, I always know exactly where I am. To set multiple safety perimeters and box in the boat, all I have to do is establish more waypoints.

If the chartplotter's alarm is not loud enough to wake you, you can connect the chartplotter signal to a loud buzzer, siren, or alarm bell.

Obviously, this method relies on electronic equipment to guard your flank. If there is strong wind or other unusual circumstances, you should always think about setting a formal anchor watch.

But even when someone is standing an anchor watch, the plotter's safety perimeter and tracking display can still be very helpful because it can confirm that your anchor is holding and it will let you know promptly if you start to drag.

Computer-based navigation software with a boundary-zone function is often even easier to use when you want to establish a safety perimeter. All you have to do is draw the boundary with your mouse and then establish the alarm conditions. But the PC's alarm may not be loud enough to wake you, so this is another case where you should consider connecting the computer alarm to external speakers. ⨯