

Comments on recent MAIB reports on the groundings of Pride of Canterbury and CFL Performer by David Edmonds

The Importance of Scale & Safety Contour Settings

These incidents illustrate some fundamental aspects of ECDIS chart display that must be understood.

There are a small number of settings that need to be applied to ensure that the chart gives an appropriate display for the passage in hand. These include setting a safety contour. The safety contour is important visually because a thick black line is placed around the safety contour itself, thus highlighting safe water; and as an alarm setting, because it is this contour that will generate an alarm based on the parameters set for approaching shallow water. Another important effect of the safety contour is that any hazard with a depth less than the safety contour is given the isolated danger symbol which may not be recognisable to the untrained navigator. Instead of, for example, a wreck symbol, the navigator will see a magenta symbol that looks like a Phillips screw head.

However in the case of Pride of Canterbury it seems likely that neither wreck nor danger symbols were shown on the display and this is almost certainly due to the scale chosen to display the chart.

In fact ECDIS behaves little different to paper charts in this respect. Pull out BA1828 (1:37,500) or BA 323 (1:75000) and wrecks in the vicinity are clearly shown (Figure 1). But move to BA1610 (1:150000) and hazards disappear (Figure 2).

A similar regime applies to ENCs. With safety contour set to 10m, cell GB40282A (1:22000) and GB302820 (1:45000) (Figure 3) clearly show the danger symbol, representing the wreck; but zoom out to GB202900 (1:90,000) (Figure 4) and the hazards disappear.

One can imagine why the navigator might choose to zoom out to this level on ECDIS, because at this scale he can see the coastline, but it is not an appropriate scale for the task in hand.

ECDIS has these safeguards:

1. If the ECDIS is not displaying the largest scale ENC for vessel position an indication will be given: "Larger scale ENC available for vessel position"
2. The ECDIS will automatically generate safety contour and hazard alarms from the largest scale ENC available.
3. Overscale \ underscale level will be shown.

But the navigator must have the knowledge to enable him to understand the importance of the warnings and indications he sees on screen so that he chooses the appropriate display scale for the conditions. And he must be sufficiently trained in the specific ECDIS in use to know its capabilities and how to use them.

By the way ENC appearance is not a matter that should vary between ECDIS manufacturers. The look of the ENC and the detail that is shown is subject to IHO specifications. Hence this is a topic that must be covered in generic ECDIS training courses.

However, in the case of CFL Performer, although a safety contour alarm is mandatory under ECDIS standards, it was possible on the particular ECDIS onboard for this alarm not to be activated by simply not setting a vector length for the alarm. If, as seems the case, the operators had not received training in the operation of the ECDIS, and were unaware of the need to set a vector for the safety contour alarm or even that this feature existed, it is likely that they had been sailing for some time without ever receiving the type of alarm that could have saved them from grounding. Moreover, had they set their safety contour to an appropriate level (10m) Haisborough Sand would have been

highlighted and hopefully they would have seen that they were on an inappropriate route (Figures 5 & 6).

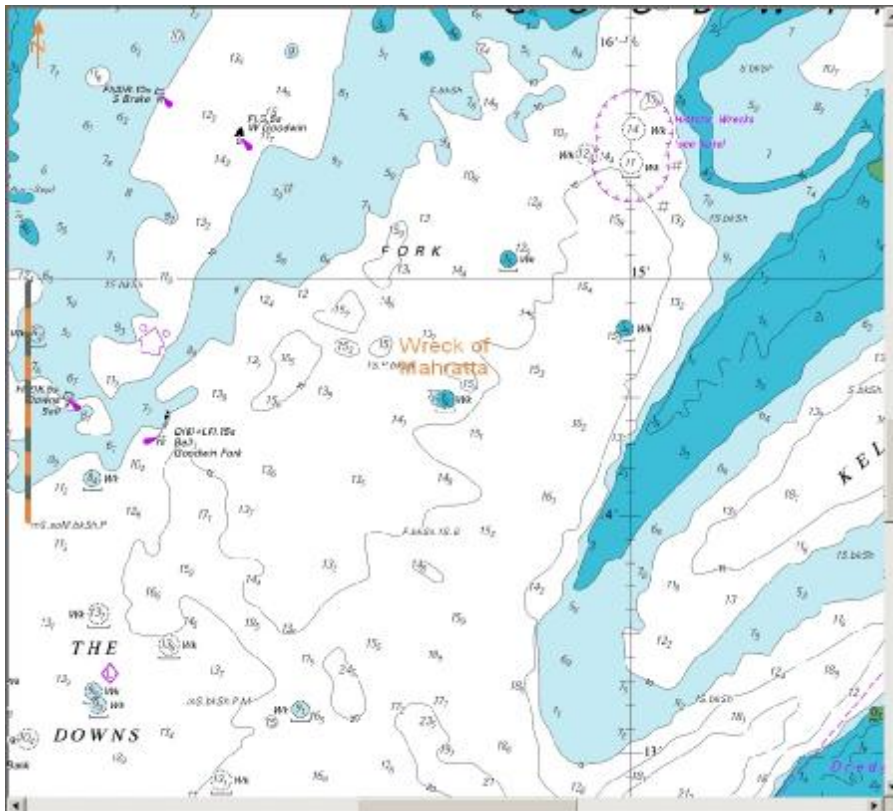


Figure 1 Paper chart \ ARCS 1:37500 hazards shown



Figure 2 BA paper chart \ ARCS 1:150000 - no hazards shown



Figure 3 ENC scale 1:45000 hazards beneath safety contour shown



Figure 4 ENC Scale 1:90,000 no hazard information



Figure 5 30m safety contour applied

With the default 30m safety contour setting Haisborough Sand does not stand out so well whereas with a 10m setting it is very clear indeed.



Figure 6 10m safety contour applied

References

MAIB Report on the investigation into the grounding of Pride of Canterbury, "The Downs" - off Deal, Kent, on 31 January 2008. Report No 2/2009. Published 14 January 2009.

http://www.maib.gov.uk/publications/investigation_reports/2009/pride_of_canterbury.cfm

MAIB Report on the Investigation of the grounding of CFL Performer on Haisborough Sand, North Sea. Report No 21/2008. Published 17 December 2008.

http://www.maib.gov.uk/publications/investigation_reports/2008/cfl_performer.cfm