

Additional depth contours within ENC's

1. Background

The introduction of ECDIS changes the way ships are navigating. One of the functions which feature safe navigation with ECDIS at most, is the Safety Contour. This contour is the depth contour selected by the navigator from the available depth contours to distinguish navigable from shallow waters dependent on the particular draught of the vessel. This mode of operation works in three ways: First, by filling navigable and non-navigable waters in different background colors. Second, by displaying the selected contour as a much thicker line and therefore more prominent than all other depth contours, and third, by automatic detection of the contour to trigger alarms if the head up course of the vessel crosses the Safety Contour.

Usually, ENC's do adopt the depth contour schemes from the associated paper charts. This means that within the depth range from 0 m – 20 m (most important for navigation) only four depth contours are applied: 0 m, 5 m, 10 m, 20 m.

For paper chart navigation this scheme seems to be appropriate but seen to the new mode of ECDIS navigation this thematic presentation of topography does not appear adequate anymore. Since the average size and consequently the average draught of vessels in international shipping grow steadily over the last ten years, a substantial amount of vessels are underway with draughts of more than 10 meter. If the mariner uses such a draught value plus a safety margin to calculate the Safety Contour input value, he usually ends up with a value between 10 – 15 m. In this case, the standardized function of ECDIS to assign an available depth contour as Safety Contour rounds up to the next deeper contour for safety reasons. Consequently, in many cases the 20 m depth contour becomes the Safety Contour. This in turn means that ECDIS exposes only water deeper than 20 m as safe waters. The resulting effect is that for a seabed with a slight gradient (e.g. the Baltic Sea) the shippable areas are disproportionately restricted. This arrangement limits the navigable waters in an unnecessary and ineffective way. It can be anticipated that for the above reasons some mariners may select a Safety contour value of 10 m – even though they are underway with a draught deeper than this. The impracticality and potential hazard to navigation of this practice is obvious and has been addressed by experienced mariners on different levels at different occasions.

2. Proposal

In order to use the safety contour function of ECDIS more efficient and in contribution to ship's safety, it is proposed to introduce a 15 m depth contour into ENC's of Baltic waters. This contour would be of special relevance for the Baltic anyway, because 15 m is the accepted maximum draught for vessels to cross this sea basin.

It is proposed to undertake a thorough investigation, which ENC's might be affected in view of

- their respective navigational purpose,
- the amount of cartographic work the introduction of the 15 m contour would create, and
- any unintended consequences such a sequential amendment of existing ENC's would possibly have.

It should be noted that the introduction of an additional 15-m contour might not be accompanied by the same measure for the affected paper charts. As a consequence, ENC's and the respective paper charts associated to may diverge in this aspect, will remain identical in their presentation of sea bed topography.

The Commission is invited to

- take note of the report;
 - discuss the general usefulness of the introduction of the 15 m contour;
 - discuss the anticipated divergence to paper chart bathymetry;
 - decide about further steps to continue with this issue.
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