Paper for Consideration by ENCWG

ECDIS Presentation Problems with IEC_61174_Ed.4.0 and IHO_Pres Lib 4.0(.1)

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Executive Summary:	This paper outlines a possible dangerous situations with selecting Safety-Contour and Safety-Depth.
Related Documents:	S-52 and PresLib Ed. 4.0.1
Related Projects:	S-64,

Introduction / Background

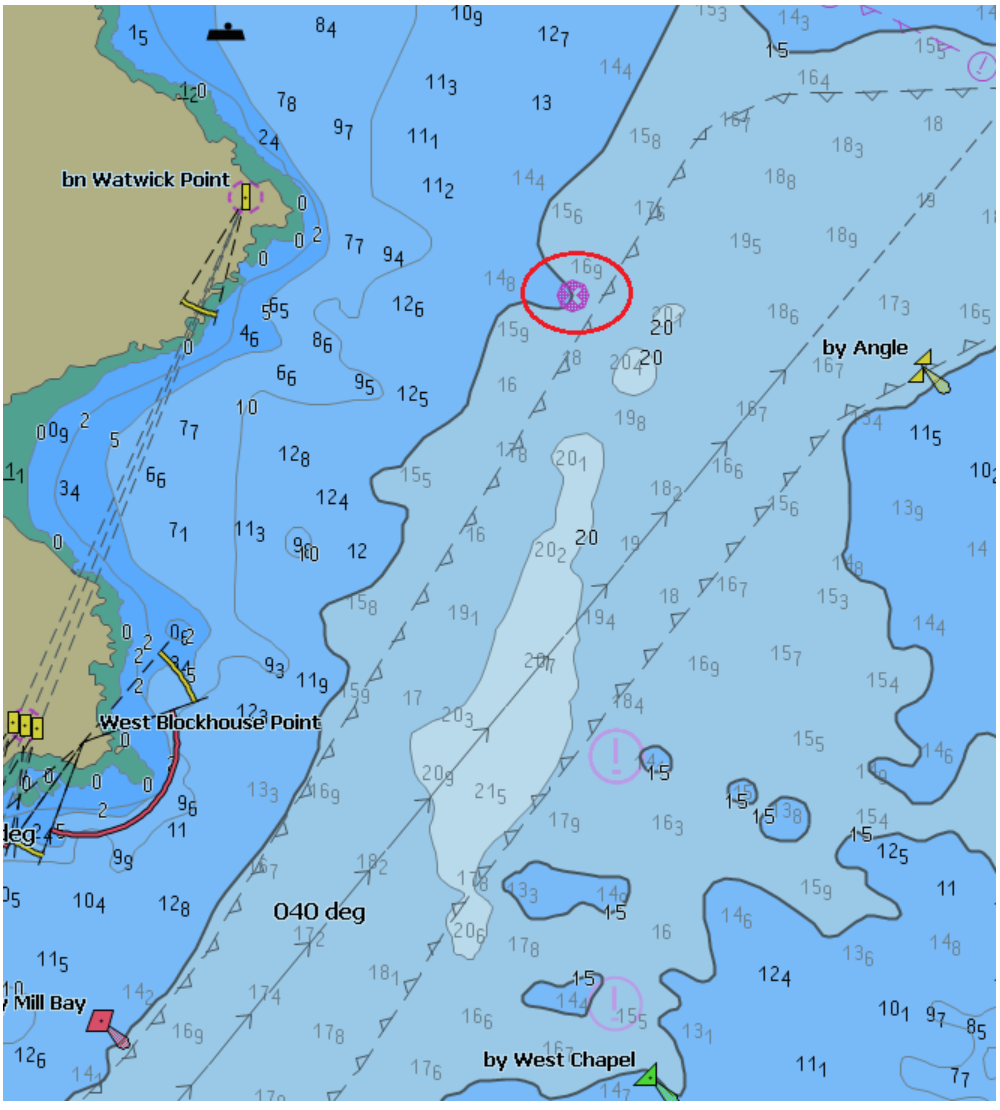
While reviewing the S-64 publication and datasets, some discrepancies were found when making a selection for Safety Contour and Safety Depth that impact the S-52 Conditional Symbol Procedures. An example using the S-64 datasets (to produce screen shots), is shown below.

Analysis/Discussion

<u>Possible dangerous situations with selecting Safety-Contour and Safety-Depth:</u>

In the 'real' ENC cell 'GB50162B' there is a Wreck object at 51°41.693'N, 005°08.773'W with a VALSOU=10.9 m, Category="dangerous", Exposition of sounding="shoaler than range of depth of the surrounding depth area". If a ship has for example a draught of 12m, then the user should have selected the 'Safety Depth' of (e.g.) 13 m and the 'Safety Contour' next available = 15 m. With these settings the picture above will be visible and according to S52 CSP 'UDWHAZ05' the 'Isolated Danger Symbol' will be displayed.

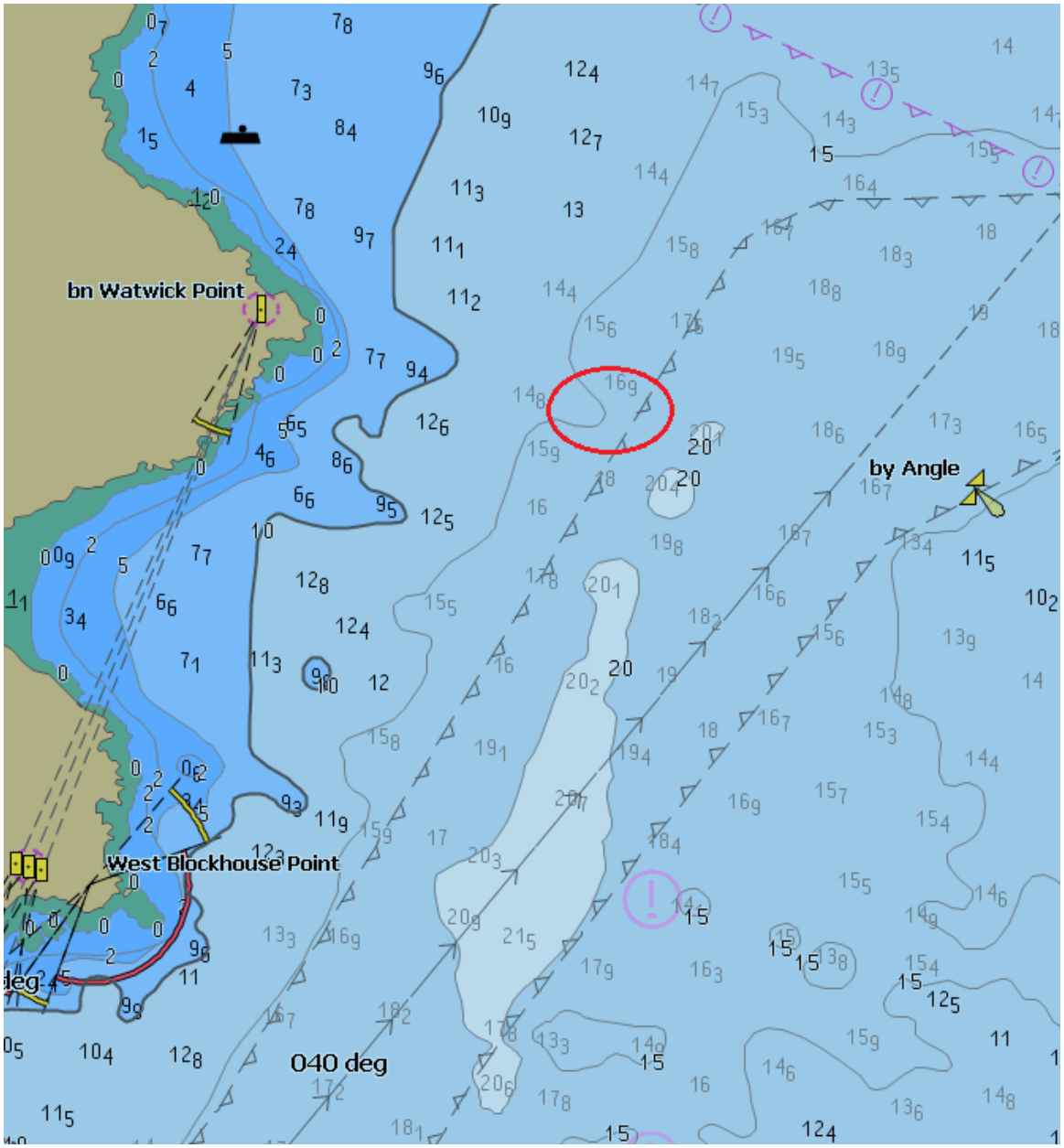
Additionally also the 'Detection of Navigational Hazard' will work correctly for this wreck. (ENC cell 'GB50162B)



Possible user selection for Safety Contour and Safety Depth:

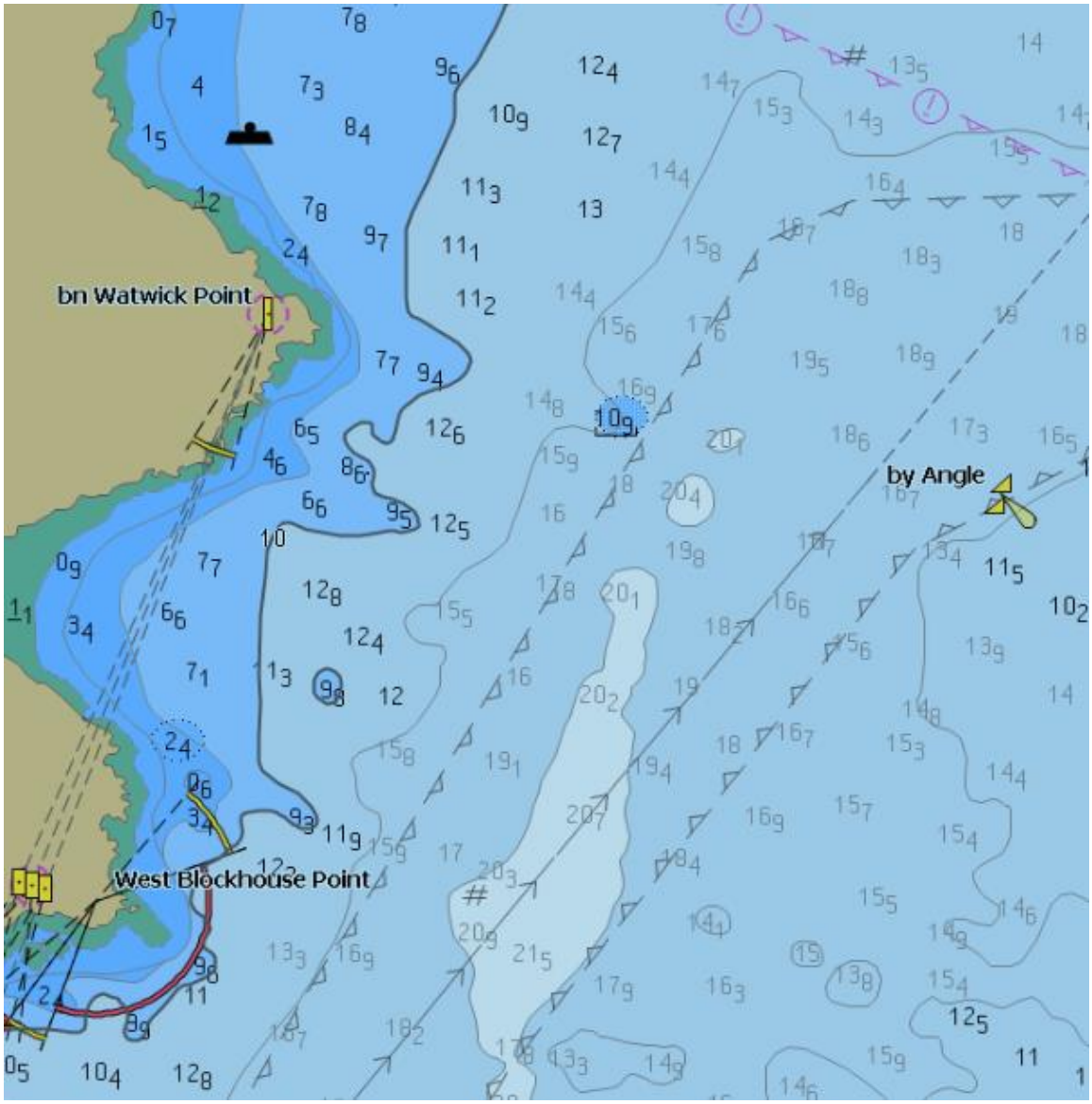
According to “IEC_61174_Ed.4.0” Annex N: ‘Use cases for safety contour and safety depth’, it should be possible to use spot soundings to improve the interpretation between navigable and non-navigable waters. The use of spot soundings for this purpose requires that the value of safety depth and the value of the safety contour are separately settable.

If the user selects for such purpose now the ‘Safety Contour’=10m and keeps ‘Safety Depth’=13m, and selects ‘Display Category’=”Standard” plus additional ‘Viewing Group’ “Spot soundings”, then the following picture will be visible:



The 'Isolated Danger Symbol' and/or the wreck at 51°41.693’N 005°08.773’W with VALSOU=10.9 m is NOT visible and also the ‘Detection of Navigational Hazard’ will NOT indicate this wreck!

In such cases the user should select ‘Display Category’=”All Other” or at least additionally select ‘Viewing Group’ “All isolated dangers”:



Picture generated with additionally selection of ‘Viewing Group’ “All isolated dangers”.

However, the 'Isolated Danger Symbol' will in any case not be displayed, because the S-52 CSP ‘UDWHAZ05’ always uses only the actual selected ‘Safety Contour’ for the decision.

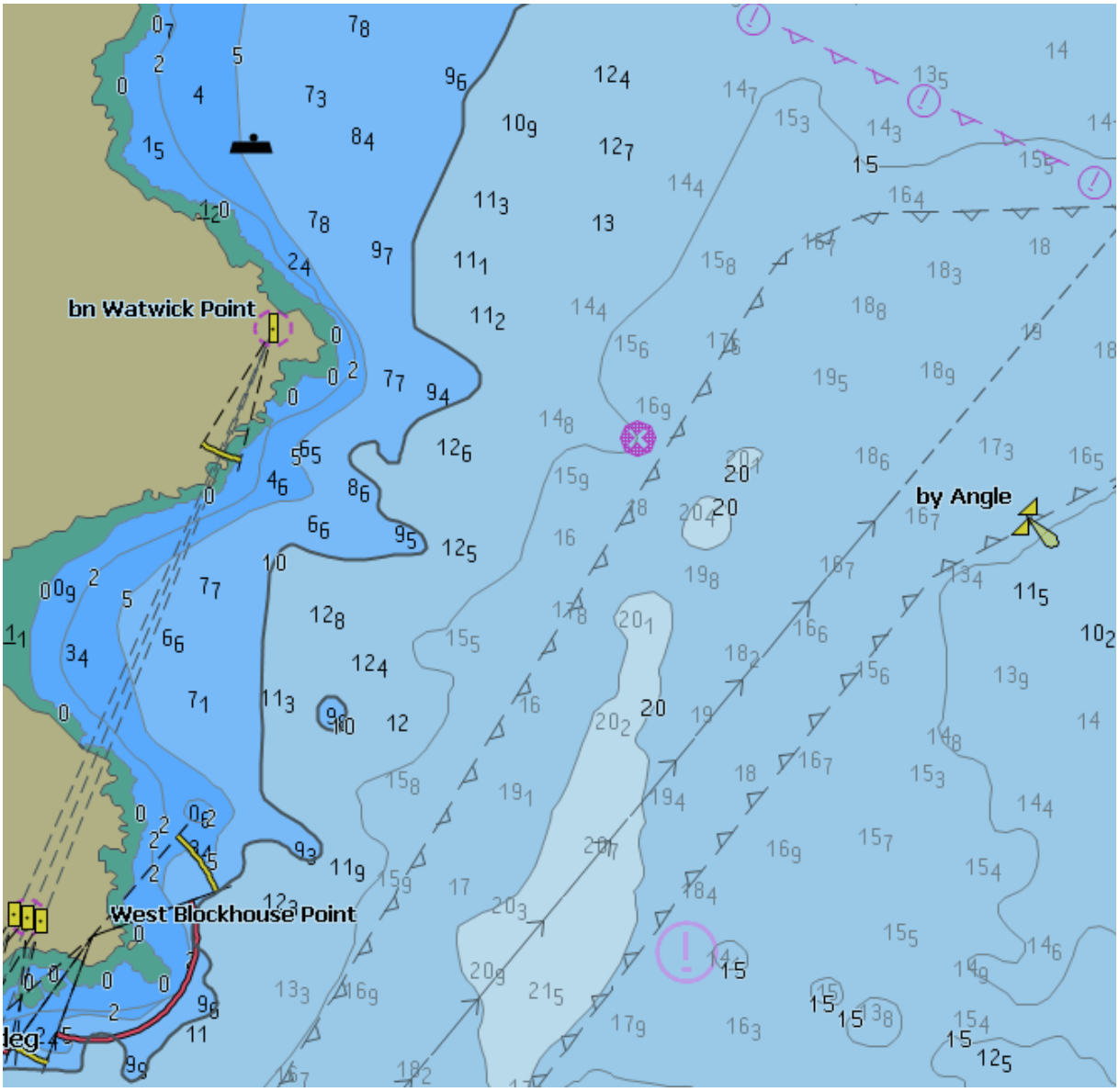
Because the same decision is used also by the ‘Detection of Navigational Hazard’, it will also NOT indicate this wreck!

Recommendations

Wärtsilä SAM Electronics Proposal for safety reasons:

Change the S52 CSP 'UDWHAZ05' to compare the object depth value with the "*largest value of the 'Safety Contour' and the 'Safety Depth'*".

Change also the S52 'Detection of Navigational Hazard' for the S-57 objects 'OBSTRN', 'UWTROC', 'WRECKS' and SOUNDG to compare the object depth value with "largest value of the '*Safety Contour' and the 'Safety Depth'*".



With using "*largest value of the 'Safety Contour' and the 'Safety Depth'",* (In this example=13m) the above picture will be generated and also the 'Detection of Navigational Hazard' will indicate this dangerous wreck!

Justification and Impacts
Inconsistencies with selecting Safety-Contour and Safety-Depth must be resolved.

Action Required of ENCWG
The ENCWG is invited to discuss the issue outlined in this paper.