Paper for Consideration by ENCWG1
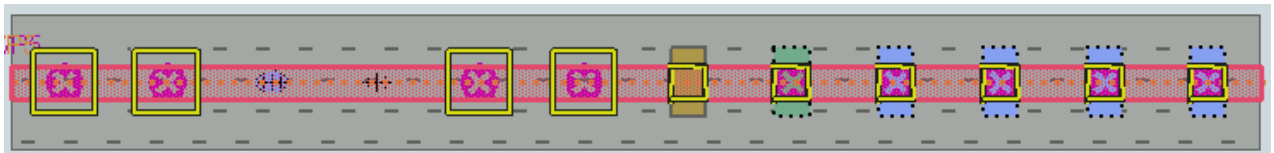
Isolated danger symbol in un-surveyed areas

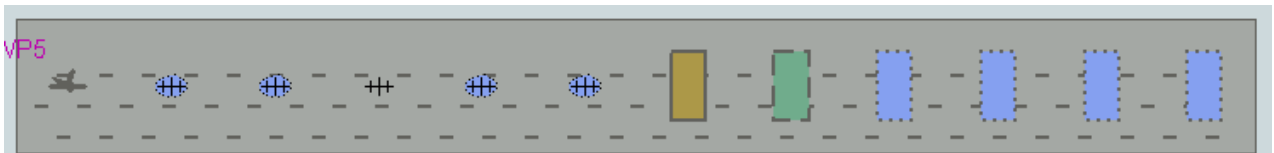|	
Submitted by:	Hannu Peiponen / Furuno Finland
Executive Summary:	This paper request publishing of clarifications for discrepancy about content of the conditional symbology procedure UDWHAZxx found during review of S-64.
Related Documents:	N/A.
Related Projects:	Recently published new editions of S-52 and S-64

Introduction / Background

1. ENCWG has had a feedback collection time period about use of new editions of the S-52 and S-64. The collected feedback was made available for the ENCWG-TG1 meeting 8.-10. Feb 2016 Monaco.

2. One part of the feedback was that the symbols in screen plots in S-64 chapter 5. Detection and Notification of Navigational Hazards had mistakes for those navigational hazards which were located in unsurveyed areas (UNSARE). Further it was found that for some manufacturers present in the ENCWG-TG1 meeting were of opinion that there were no mistakes and some manufacturers present in the ENCWG-TG1 meeting were of opinion that there were mistakes.

A part of screen plot as published in S-64 Ed 4.0.1
Note that those detected as navigational hazard are both presented as isolated danger (magenta cross) and highlight with yellow indication.

Same part of screen plot showing the presentation of the disputed objects if the object in UNSARE areas are newer isolated dangers.
Note that this plot do not have the planned route nor the highlight of navigational hazards.

3. The writer of this paper was given a task to study the issue and submit an input paper for the ENCWG1 meeting 14. - 18. Mar 2016 Tokyo.
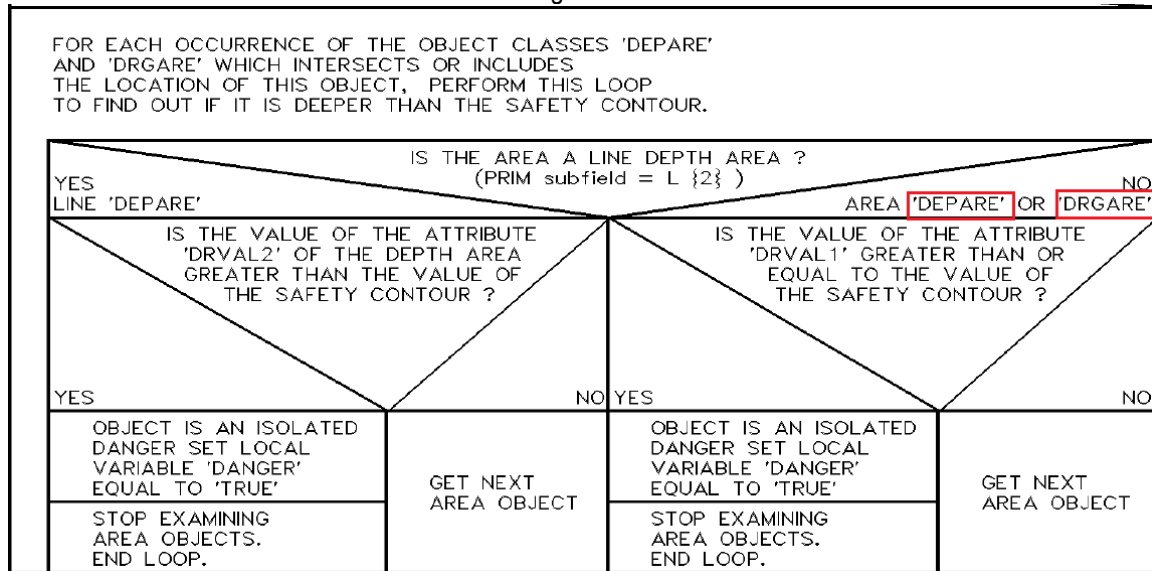
Analysis/Discussion

4. The focal point of this issue is "what is the correct content of the conditional symbology procedure UDWHAZ". There seems to be two different understandings depending of the development history of the ECDIS for each company.

5. If the roots of the software for ECDIS implementation are old then the screen samples for navigational hazards laying in unsurveyed areas are same as in the published S-64 Ed 3.0.1

6. If the roots of the software for ECDIS implementation are relatively recent then they claim that the screen samples for navigational hazards laying in unsurveyed areas contain mistakes in the published S-64 Ed 3.0.1

7. After the study the issue is around which of the underlying skin of the earth objects cause judgement that a navigational hazard is an isolated danger (i.e. presentation is the magenta cross).

8. Originally up to S-52 Presentation library ed 3.2 this detail was as in UDWHAZ03 below. In this version only DEPARE and DRGARE were able to cause isolated danger status.

9. Next evaluation was drafting of a new UDWHAZ04. This was agreed as deferred amendment d6.co.13 by the C&SWG meeting 13. - 15. May 2002, Hamburg. The minutes of meeting C&SWG meeting 13. - 15. May 2002, Hamburg has recorded following details:

> 5.10 Review of changes to UOC for impact on PL and S-52 – resulting in deferred amendments d6.co.10 to d6.cl.16
> C&S 13/5C (deferred amendment 6)
> The following decisions were taken:
> > d6.co.10 - new CSP for symbolising tracks & routes: not accepted. Ask the chairman TSMAD to cancel the change in UOC from 'must' to 'should'.
> > d6.co.11 - new CSP for bridges with underlying UNSARE: not accepted. Ask the chairman TSMAD to code un-defined bridges with an attribute.
> > d6.co.12 - revision to CSP DEPARE to handle new group 1 underlay for non-navigable rivers etc.: accepted.
> > d6.co.13 - revision to CSP UDWHAZ to handle new group 1 underlay for obstructions; accepted.
> > d6.cl.14 - geographic names: only for information. No action required at present.
> > d6.cl.15 - collection objects: addition to PresLib manual accepted.
> > d6.cl.16 - floating breakwater: only for information. No action required at present.
>
> 12 Time Schedule
> 12.1 When to issue Edition 3.3?
> - work completed Oct/Nov 2002
> - issued by IHO at end of 2002

10. Final publication of deferred amendment happened in Mar 2004 as C&S Maintenance document number 4, see below a part of the front page, a part of change hisrory, the section explaining the change for UDWHAZ and the detail of new UDWHAZ04 related to the issue of this paper.

C & S MAINTENANCE DOCUMENT

Number 4 – March 2004

DEFERRED AMENDMENT 6

CHANGE HISTORY FROM 1997 TO 2004
As required by C&S12 minutes 5.3.4, a change history should be added to the C&S Specs. and the PresLib. The history of the previous changes is as follows (MD stands for IHO Maintenance Document; IA stands for Immediate Amendment; and DA stands for Deferred Amendment):

Presentation Library (Annex A to S-52 Appendix 2)

Edition 3.2 + MD2 DA d02 + MD3 DA d05 + MD4 DA d6 --> Edition 3.3 (2004)

Item No. PL03.2.d6.co.16 - Correction to Presentation Library section 12 - **UOC change: LNDARE underlay for area obstrns**
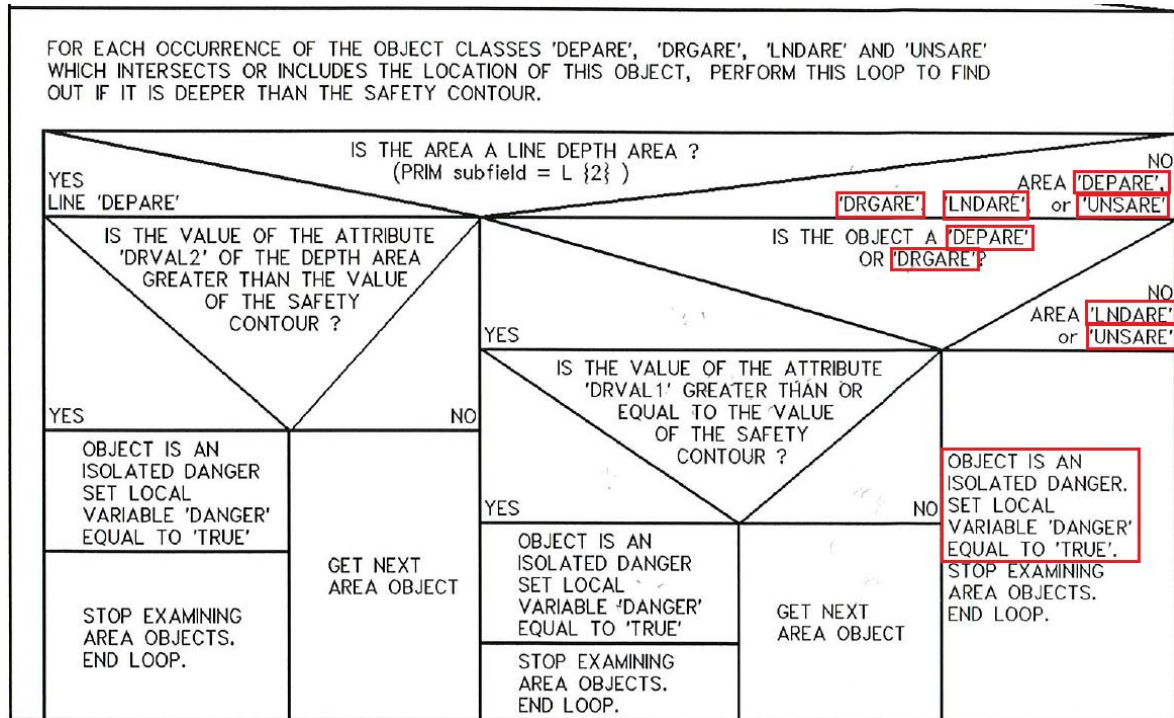Clause 6.2.2 of the UOC has been in changed to include LNDARE in addition to the original DEPARE or UNSARE as an underlay for area obstructions.
In order to determine whether an obstruction is an underwater hazard a revised CSP UDWHAZ04 has been written which examines LNDAREs and UNSAREs as well as DEPAREs and DRGAREs to determine whether the obstruction is an isolated danger lying in safe water.
See separate file 'CSP UDWHAZ04'

Follow-on change:
Change CS(UDWHAZ03) to CS(UDWHAZ04) wherever it appears

11. In addition to new UDWHAZ04 the deferred amendment 6 contained removal of linear depth areas.

Item No. PL03.2.d6.co.10 - Correction to PresLib section 12 CSPs – **drawing from 'edges' rather than from line depth areas**.
C&S12 Minutes item 5.4.3 implied that drawing the Safety Contour from the 'edges' of depth areas should be evaluated in order to assess the impact on S52 of dropping linear depth areas from S57.
C&S 13 minutes item 7 (d7.c0.3) and item 8 note that this method was accepted, subject to testing by volunteering manufacturers.

Revised CSP DEPARE02 of Jan. '03 draws the safety contour from the edges of DEPARE and DRGARE objects and highlights it as the safety contour. If, and only if, the safety contour is suppported by a DEPCNT object, DEPARE02 also labels it, as a mariner's option.

Edition 3.3 of the PresLib no longer recognises line depth areas. Revised CSP DEPCNT03 of Sept '02 merely draws and optionally labels all DEPCNT objects. (The higher display priority of the safety contour drawn by CSP DEPARE02 will ensure that the safety contour overwrites the repeat of an ordinary contour drawn by CSP DEPCNT03.)

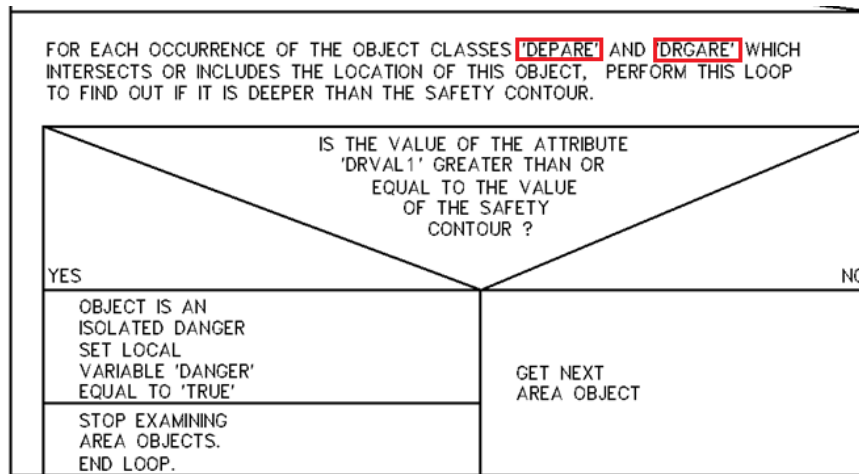These CSPs have worked satisfactorily in tests in the office.

Changes required:
Item d6.co.11 below describes the revisions needed to implement these changes in general.

In particular, because edition 3.3 of the PresLib no longer recognises line depth areas, add to PresLib section 11.2 line look-up table the following 'no symbol' entry: "DEPARE","","","","S","",""

12. Removal of linear depth areas reference only conditional symbology procedures DEPCNT and DEPARE. In the deferred amendment there is no indication that also the conditional symbology procedure UDWHAZ should be changed for the linear depth areas.

13. Next step is interesting. IHO publish the S-52 Presentation library 3.3 as consolidated edition containing the changes described in maintenance document 2, 3 and 4 (MD2 DA d02, MD3 DA d05 + MD4 DA d6). Suddenly the published UDWHAZ04 is in this document different than published in the traceable source document. This published version has been amended for the linear depth area. They have been removed, but the basis to do this removal was the UDWHAZ03 of the previous edition, not the UDWHAZ04 agreed and documented in deferred amendment and in maintenance document number 4.

14. In Mar 2008 IHO publish next new edition 3.4 of the S-52 Presentation library. The UDWHAZ is unchanged and equal to the version described in paragraph 13 of this document

15. The newest edition 4.0.1 of the S-52 presentation library has all conditional symbology procedures changed for more modern documentation style. The foreword of this document declare all intended changes and based in this there are no change for the UDWHAZ. When compared, the newest version of the UDWHAZ is equal to previous editions 3.3 and 3.4 although the documentation style is different.

Conclusions

16. Based on this study the root cause for dispute about correct content of the UDWHAZ seems to be round removal of linear depth areas (see paragraphs 11 and 12 of this document). When this change was executed a wrong version of the UDWHAZ was used as a baseline.

17. It seem that those who has same result as the screen plot in the published S-64 Ed 3.0.1 have created and maintained their software as an iterative process through the history. While those who established their software baseline after publishing of the S-52 Presentation library 3.3. or later claim that S-64 Ed 3.0.1 has screen plot mistakes for this detail.

Recommendations

18. The original reason for including LNDARE and UNSARE for the UDWHAZ has been justified. There is no reason why this decision should now be reversed.

Action Required of ENCWG

The ENCWG is invited to:

a)   note the issue presented in this paper

b)   consider what is the best way forward and act based on that decision (i.e. either to fix UDWHAZ in S-52 or to screen samples in S-64)