

IHO CSMWG 16
IHB Monaco 29-31 May 2006

Changes to IHO Chart Specifications for Wrecks



(submitted 3 May 06)

Purpose of this Paper


1. There have been some proposed changes to the IHO's Chart Specifications, in respect of the portrayal of wrecks (& obstructions). These changes are part of an ongoing revision and updating of IHO Publication M-4 (IHO (Paper) Chart Specifications). The revision has been undertaken by the IHO's CSPCWG and is now subject to full Member States' approval (due 08 June 06).
2. The purpose of this paper is to present these changes to the C&SMWG for consideration and discussion on their possible impact on S-52, the Presentation Library and the Conditional Symbology Procedures.

Background


3. IHO Circular Letter 30/2006, dated 8 March 2006, requests IHO MS' approval of the proposed CSPCWG re-write of M-4 Part B paragraphs 400-429. The specifications for wrecks are at B-422; an extract from the proposed final draft is provided at Annex A.
4. CSPCWG judged it necessary to address this important matter for the reasons outlined below. The outcome is the result of very extensive discussion and careful drafting. CSPCWG comprises 25 IHO MS, of which about 15 have been actively engaged in contributing to the subject discussion. Additionally, full consultation has been undertaken with other IHO technical WGs (particularly those developing ENC specifications).
5. It has long been recognized that there is a need for enhanced standardization of the symbols K28 (⚓ dangerous wreck) and K29 (⚓ so-called non-dangerous wreck). (Reference: INT1 – symbols and Abbreviations on Charts).
 - The existing specification (adopted in 1982, but written much earlier) uses 20m as a dividing criterion. However, some MS have used different values e.g. increasing this criterion up to 28m to reflect the increasing draughts of some ships.
 - Consequently, the same symbols may have different meanings on different MS' charts and, sometimes, different meanings on the same MS's charts. For example, where old wrecks have not been re-assessed at new editions (NE); on cross-channel charts, where the French use 20m and UK uses 28m.
5. The principal changes are:
 - The revised specifications provide an order of preference for using the various symbols available, ie: 1. Swept. 2. Depth by sounding. 3. Safe clearance. 4. Unknown depth.

- A simplified system for estimating safe clearance depths has been provided, with its use extended to other obstructions. A generic version of the symbol  will be included at K3 in INT 1, in due course.
- The subjective and potentially misleading terms 'dangerous' and 'non-dangerous' wrecks have been removed from the Specifications, with a recommendation to avoid, if possible, the use of K29  (except in deep water).
- Advice is given on how to deal with the legacy of existing chart symbols that may be misleading.
- A cut-off depth of 100m is advised for the use of blue tint over obstructions of unknown depth.

ANNEX A: draft revision M-4 B422.3 - .7



B-422.3 A wreck which has been wire swept, or has had its least depth determined by a diver, must be shown by sounding numerals showing the depth to which it has been swept, surrounded by a danger line, with the abbreviation 'Wk'; the swept depths symbol  **K2** must be inserted under the danger line.

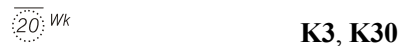


B-422.4 A wreck over which the least depth that is known has been found by sounding only, must be shown as in B-422.3 but without the swept  symbol.



B-422.5 A wreck with estimated safe clearance. For a wreck (in water less than 200m deep) over which the least depth is unknown, a safe clearance depth must be estimated if possible.

To avoid the ambiguity in interpreting the symbols  and , the 'safe clearance bar' must be used for a wreck which is considered to have a safe clearance to the depth shown, eg:



Method for estimating safe clearances. Some data on the sunken vessel will be required (eg vertical length from keel to highest point), so that its likely height above the seabed can be determined. Any further information about the wreck should also be taken into account (eg it may be lying on its side, in which case the beam of the vessel will determine the height of the wreck).

Then obtain the most probable depth of the seabed in the charted position of the wreck. If known, take into account the sea floor topography. Consult latest surveys if possible. If the position of the wreck is approximate, use the shoalest depth in about a 2-mile radius.

Next, obtain the 'probable clearance depth' by subtracting the maximum likely height of the wreck from the probable depth of the seabed.

Finally, subtract a safety margin of 5m from the probable clearance depth, to obtain the 'safe clearance depth'. In very shallow water, estimate a safe clearance only if confidence in the data supports a safety margin of less than 5m.

Safe clearance depths may also be estimated for **other obstructions** (eg wellheads, diffusers, underwater turbines) where sufficient data (eg vertical length) about the obstruction is known, on the same principles as for wrecks. Note that some wellheads have safety cages that may significantly increase their height.

B-422.6 A wreck of unknown depth for which a safe clearance cannot be estimated.

For a wreck over which the least depth is unknown and a safe clearance **cannot** be estimated, the underwater wreck symbol must be used:

++ **K29**

The symbol ++ should also be used for all wrecks in waters over 200 metres deep.

For a wreck **considered to be potentially dangerous** to some surface vessels capable of navigating in the vicinity, a surrounding danger line and solid blue tint must be added:

 **K28**

The use of symbols K28 and K29 should be reviewed whenever the size of vessels capable of navigating in the vicinity changes (eg if an access channel is dredged)

B-422.7 Changing criteria for wrecks. B-422.1-6 provides guidance on charting new wrecks. However, historically the criteria used for differentiating between symbols K28 and K29 for wrecks were often based on a threshold value for the estimated depth over the wreck (eg 20m, 28m). Criteria have varied between nations and over time (due to the increasing draught of large vessels). The term ‘non-dangerous wreck’ was formerly used for K29 symbols, even though they may be dangerous to some vessels capable of navigating in the vicinity. Unfortunately, the chart user is not necessarily aware of that fact or that, due to the changing criteria, the same symbol on a chart may have different meanings. Ideally, therefore, all charted K28 and K29 symbols should be re-assessed to conform to the guidance above.

If resources and knowledge do not allow for an immediate re-assessment of all charted K28 and K29 symbols, the following actions should be taken to reduce possible confusion, starting with priority areas:

- An explanation (or reference to an explanation in a nautical publication) of the possible inconsistency between the meaning of K28 and K29 symbols on a chart must be given in the national equivalent of INT 1, and a cautionary note may be added to charts.
- Existing K29 symbols may be updated according to the following formula:
 - i. Retain K29 in water deeper than 100m.
 - ii. In water shallower than 100m, amend K29 to K30, with the safe clearance depth being that formerly applied to differentiate between K28 and K29. (Take care where the criteria used has changed over time).
 - iii. If this action results in over-crowding, a selection should be made to show the extent of the area, or symbols merged into extended danger lines. Alternatively, the size of the K30 symbol may be reduced.
 - iv. Take care to ensure no anomalies result, such as wrecks with a safe clearance greater than the surrounding depths; in such cases, the original data must be reassessed or, if not possible, the symbol should not be changed.
- A database, maintained for wreck information, would assist any reassessment and demonstrate why a particular symbol was chosen.