

INTERNATIONAL HYDROGRAPHIC  
ORGANIZATION



ORGANISATION HYDROGRAPHIQUE  
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## CHART STANDARDIZATION & PAPER CHART WORKING GROUP (CSPCWG)

[A Working Group of the Hydrographic Services and Standards Committee (HSSC)]

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To CSPCWG Members

Date 20 February 2013

Dear Colleagues,

### **Subject: Actions from 9<sup>th</sup> CSPCWG meeting: Group 1 'Clarifications'.**

Here is the first group of drafts in fulfilment of CSPCWG9 actions. This progresses actions 41, 44, 45, 46, 47 and 52. Of these, we agreed at CSPCWG9 that actions 41, 44, 45 and 52 are clarifications, ie they can be included in the next edition of S-4, without consulting IHO Member States. Potentially, Action 46 could also be regarded as a clarification; I would welcome your view on this. We have already agreed that Action 47 will be referred to HSSC.

The next edition of S-4 is likely to be mainly for including the revised section B-300 and a few other accumulated updates. Any clarifications can also be included if we have agreed the wording in time.

Please let me have your comments by 17 April, using the response form attached at Annex B.

Yours sincerely,

Andrew Heath-Coleman  
Secretary

Annex A: CSPCWG9 Actions drafts: Group 1 'Clarifications'

Annex B: Response form.

**CSPCWG9 Actions drafts: Group 1 'Clarifications'**

CSPCWG9 Actions in blue  
Comments and explanations in green  
Extracts from S-4 in black  
Proposed additional words in red  
Proposed deletions ~~crossed through~~.

**ACTION 41:** Secretary to draft clarification on sounding selection. (Include as annex to meeting record letter).

The following new sub-paragraph is mainly derived from AU and US guidance supplied. The existing sub-paragraphs will have to be re-lettered. It was not included in the Annex to Letter 01/2013, as not affecting S-4 Section B-300.

**B-410 REPRESENTATION OF DEPTH: GENERAL**

Some of the principles of depth depiction are summarized below (see also B-403.1):

- a. The main principle is the selection of soundings based on a 'shoal biased' pattern. For well surveyed areas, this is achieved through the 'triangular method of selection', whereby:
  - no actual sounding will exist within a triangle of charted soundings which is less than the least of any of the soundings defining the edges of the triangle; and
  - no actual sounding will exist between two adjacent charted soundings forming an edge of the triangle which is less than the lesser of the two charted soundings.

The latter principle should also be applied between adjacent charted soundings in areas covered only by passage soundings. In order to provide an indication to the mariner of the location of the tracks, charted soundings along tracks may be much closer together than soundings in surveyed areas (see also B-417.4 and B-418.2).

The final test of depth selection is that no source material should contain depths the mariner would consider 'unexpected' after examining the chart.

- b. The least depth over shoals and banks, ...

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**ACTION 44:** Secretary to include clarification for removal of obsolescent symbols from S-4 in next edition of S-4.

**B-120.6** **Obsolete or obsolescent symbols.** Normally, obsolete and obsolescent symbols will be replaced by new symbols; any associated out of date guidance and symbols will be removed. The obsolescent symbols will still be available for reference in INT1 (until they are considered to be obsolete, ie no longer present on any published charts, which in practice may mean they are retained in INT1 in perpetuity). Exceptionally, where considered useful, a brief note may be included stating that they 'were formerly charted as:' and a copy of the obsolescent symbol retained. This is to guide the cartographer in deleting the feature.

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**ACTION 45:** Secretary to include clarification for convention on upright and sloping text styles in next edition of S-4.

AU suggested B-125.3. B-125 is 'Depiction of symbols' and the existing 125.1 is 'Symbol sizes' and 125.2 is 'Displacement of symbols'. This seems an inappropriate place to add a convention about text (font) styles. AU alternative suggestion was the vacant B-129. B-120 sub-section deals with 'Terms and

Convention used in the Specifications' (rather than on charts). It seems that most of B-120 to B-129 was originally devoted to the specifications rather than on charts, although some chart applications have crept in (eg B-122.1, B-125.1-2). Sub-section B-130 contains fairly unrelated conventions used on charts: What units to use; How to express geographical positions; Conventions for expressing bearings, so B-133 would be a suitable place (and Secretary has had a note to include this here for some time).

**B-133 TEXT STYLES (FONT).**

Names and legends referring to land features should be in an upright style and those relating to water features in a sloping style. For features which are difficult to define as either 'land' or 'water', see specifications for the appropriate feature (eg: Pontoons B-324; Locks B-326). For more guidance on text styles, see B-560.

One issue to be decided is the term we should use: we consider 'Type styles' (as in current B-500 and B-600) to be dated (based on pre-digital production methods). Should we refer to 'Text styles' or 'Fonts'? The title must be consistent with whatever is decided for B-500.

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**ACTION 46:** Secretary to consider appropriate placement and draft guidance about updating large scale charts first. New Work Plan item.

The meeting agreed with the principle of updating largest scale charts first and decided it would be useful to state this explicitly in either S-4 or S-11. S-11 is 'Guidance for the Preparation and Maintenance of International Chart Schemes'. In common with S-4, while the guidance is designed specifically for paper INT chart schemes, the basic principles apply to non-INT chart schemes and some of them to ENC schemes (although the extent of that is yet to be determined). However, it does not at present provide any guidance concerning individual charts; that is the purpose of S-4. Guidance on compilation principles belongs therefore in S-4 rather than S-11 Part A.

S-4 currently has very little on 'general' principles. It provides very detailed guidance on how to chart a great many things, if the compiler chooses to include them, but little guidance on what should be charted (eg minimum content) or general principles of marine cartography. We will shortly publish the revised B-300 section, which will provide some additional more general guidance, but only related to topography. Perhaps the only really general example is B-100.4, which was added very recently. We suggest therefore, that this new 'general' item should follow at B-100.5. (Other possibilities would be B-126 (Scales) or to start a new section on general principles at B-170).

Proposed new paragraph:

**B-100.5 Compilation procedure: largest scale first.** The mariner requires charts to be consistent throughout the scales, at least for essential data content; this is called 'vertical consistency'. For this reason, as far as possible, the original compilation and subsequent updating of charts, whether by Notice to Mariners or new edition, should proceed from the largest scale, through the series, to the smallest scale. In practice, this is best achieved by compiling from original source data into the largest scale chart and then compiling the next smaller scale using the largest scale chart as source, and so on to the smallest scale appropriate for the data type.

Within a series of different scale charts covering the same location, chart content in terms of its cartographic detail and resolution is greatest at the largest scale. At smaller scales, detail must be generalized, with only a selection of the available source data (including soundings) portrayed, so that the information which is selected is clearly presented. This selection is based upon the significance of the information to the mariner and the design purpose of the chart (see B-300.3 and B-403). This will ensure that the charts are vertically consistent; consequently, any sounding on the smallest scale chart will also be present on the largest scale.

**Updating.** Vertical consistency also benefits hydrographic offices in simplifying the task of updating all charts covering the same location when new data is received. Note also that B-620.2 states that 'where differences exist between charts, the largest scale national and, where appropriate, INT chart is accepted as the authoritative document and must therefore be given priority for updating'.

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**ACTION 47:** Chairman to review where and how the principle of referring all charts to WGS84 can be expressed in S-4 (ready for HSSC approval).

The meeting agreed that referring all charts to WGS84 is an ideal objective and that it could be useful to express this concept in S-4, similar to that expressed for vertical datums at B-405.3. However, this should first be agreed by HSSC. We also need to await the response from IHB about whether 'WGS84' is the best term to use (Action 48). However, before approaching HSSC, this WG should agree in general terms what we need to say and where we should say it; here is our initial suggestion:

**B-201.2** The **World Geodetic System (1984) (WGS84)** should be used as a basic worldwide reference system for nautical charts until an adequate alternative geodetic datum is adopted by the relevant international organizations to be used as the international geodetic reference system for cartographic work on land and sea areas.

**B-201.3** Internationally recognized **regional datums or local datums** may continue to be used for the graduation of paper charts in areas where they apply; ~~however, a~~ transformation adjustment to WGS84 ~~should~~ **must** be included on any such chart (see B-202). **However, the adoption of WGS84 Datum, or its equivalent, for all charting is a long term objective. This supports international standardization of position referencing across nautical products and services, mitigates the risk of error arising from misunderstanding and/or mis-converting positional information and meets chart users' needs and expectations in today's navigation environment. For hydrographic offices, standardizing the position reference of data will bring benefits for processes and, indeed, may be an essential requirement (e.g. in populating a coherent digital database from which to derive both paper and electronic products, noting that ENC's must be referenced to WGS84).**

In positioning chart source data during chart compilation, it is recognized that the vast majority of this data was acquired before the advent of accurate satellite-derived positioning and thus needs to be 're-positioned' to make it compatible with a WGS84-referenced chart frame; see also B-202.4. Hydrographic offices should manage the transfer of charts to WGS84 in a coherent programme, to avoid a mix of charts on different datums in the same region for any significant period.

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**ACTION 52:** Secretary to include clarification on land boundary symbols in next edition of S-4.

The following additional paragraph was included at B-360, immediately following the existing paragraph, as explained in Annex to CSPCWG Letter 01/2013 (revised):

**Boundaries** around cultural features (eg airports, cemeteries, wind farms) are usually physical structures such as walls or fences. Although this may not invariably be the case, for consistency, boundaries around cultural features should be charted by fine continuous lines.

**CSPCWG9 Actions drafts: Group 1 'Clarifications'**

Response Form

(please return to CSPCWG Secretary by 17 April 2013)

[andrew.coleman@ukho.gov.uk](mailto:andrew.coleman@ukho.gov.uk)

WG9 Action	Question	Yes	No
41	Do you agree with the wording of draft B-410a?		
44	Do you agree with the wording of draft B-120.6?		
45	Do you agree that B-133 is a suitable place for the convention on upright and sloping text?		
	What should the title line for the convention be (please choose one from the following, noting that it will also be applied to revised section B-500):		
	Fonts		
	Text styles		
	Something else – please put your suggestion below		
	Do you agree with the wording of draft B-133?		
46	Do you agree that S-4 B-100.5 is a suitable place for the guidance of updating largest scales first?		
	Do you agree that there is no requirement to include such guidance in S-11 Part A?		
	Do you agree with the wording of draft B-100.5?		
	Do you agree that this guidance is a 'clarification'?		
47	Do you agree that B-201.3 is a suitable place for stating the principle of referring all charts to WGS84?		
	Do you agree with the wording of draft B-201.3?		
52	This paragraph was included at B-360, immediately following the existing paragraph, as explained in Annex to CSPCWG Letter 01/2013 (revised) and is therefore now awaiting approval by IHO Member States (CL03/2013 refers).		

Further comments:

Name:

Member State: